

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.
 <120> NON-HUMAN ANIMALS COMPRISING A HUMANIZED COAGULATION FACTOR 12 LOCUS
 <130> 057766-545986
 <150> US 62/829,321
 <151> 2019-04-04
 <160> 84
 <170> PatentIn version 3.5
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 <211> 597
 <212> PRT
 <213> Mus musculus

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 <223> Signal Peptide

<220>
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 <222> (20)..(354)
 <223> Heavy Chain

<220>
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 <222> (355)..(597)
 <223> Light Chain

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Pro	Asp	Gly	Pro	Thr	Val	Val	Leu	Thr	Val	Asp	Gly	Arg	Leu	Cys	His
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Phe	Pro	Phe	Gln	Tyr	His	Arg	Gln	Leu	His	His	Lys	Cys	Ile	His	Lys
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Arg Arg Pro Gly Ser Arg Pro Trp Cys Ala Thr Thr Pro Asn Phe Asp
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Glu Asp Gln Gln Trp Gly Tyr Cys Leu Glu Pro Lys Lys Val Lys Asp
85 90 95

His Cys Ser Lys His Asn Pro Cys His Lys Gly Gly Thr Cys Ile Asn
100 105 110

Thr Pro Asn Gly Pro His Cys Leu Cys Pro Glu His Leu Thr Gly Lys
115 120 125

His Cys Gln Lys Glu Lys Cys Phe Glu Pro Gln Leu Leu Lys Phe Phe
130 135 140

His Glu Asn Glu Leu Trp Phe Arg Thr Gly Pro Gly Gly Val Ala Arg
145 150 155 160

Cys Glu Cys Lys Gly Ser Glu Ala His Cys Lys Pro Val Ala Ser Gln
165 170 175

Ala Cys Ser Ile Asn Pro Cys Leu Asn Gly Gly Ser Cys Leu Leu Val
180 185 190

Glu Asp His Pro Leu Cys Arg Cys Pro Thr Gly Tyr Thr Gly Tyr Phe
195 200 205

Cys Asp Leu Asp Leu Trp Ala Thr Cys Tyr Glu Gly Arg Gly Leu Ser
210 215 220

Tyr Arg Gly Gln Ala Gly Thr Thr Gln Ser Gly Ala Pro Cys Gln Arg
225 230 235 240

Trp Thr Val Glu Ala Thr Tyr Arg Asn Met Thr Glu Lys Gln Ala Leu
245 250 255

Ser Trp Gly Leu Gly His His Ala Phe Cys Arg Asn Pro Asp Asn Asp
260 265 270

Thr Arg Pro Trp Cys Phe Val Trp Ser Gly Asp Arg Leu Ser Trp Asp

275

280

285

Tyr Cys Gly Leu Glu Gln Cys Gln Thr Pro Thr Phe Ala Pro Leu Val
 290 295 300

Val Pro Glu Ser Gln Glu Glu Ser Pro Ser Gln Ala Pro Ser Leu Ser
 305 310 315 320

His Ala Pro Asn Asp Ser Thr Asp His Gln Thr Ser Leu Ser Lys Thr
 325 330 335

Asn Thr Met Gly Cys Gly Gln Arg Phe Arg Lys Gly Leu Ser Ser Phe
 340 345 350

Met Arg Val Val Gly Gly Leu Val Ala Leu Pro Gly Ser His Pro Tyr
 355 360 365

Ile Ala Ala Leu Tyr Trp Gly Asn Asn Phe Cys Ala Gly Ser Leu Ile
 370 375 380

Ala Pro Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asn Arg Pro
 385 390 395 400

Ala Pro Glu Glu Leu Thr Val Val Leu Gly Gln Asp Arg His Asn Gln
 405 410 415

Ser Cys Glu Trp Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg Leu His
 420 425 430

Glu Gly Phe Ser Ser Ile Thr Tyr Gln His Asp Leu Ala Leu Leu Arg
 435 440 445

Leu Gln Glu Ser Lys Thr Asn Ser Cys Ala Ile Leu Ser Pro His Val
 450 455 460

Gln Pro Val Cys Leu Pro Ser Gly Ala Ala Pro Pro Ser Glu Thr Val
 465 470 475 480

Leu Cys Glu Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala Glu Glu
 485 490 495

Tyr Ser Thr Phe Leu Gln Glu Ala Gln Val Pro Phe Ile Ala Leu Asp
500 505 510

Arg Cys Ser Asn Ser Asn Val His Gly Asp Ala Ile Leu Pro Gly Met
515 520 525

Leu Cys Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln Gly Asp
530 535 540

Ser Gly Gly Pro Leu Val Cys Glu Glu Gly Thr Ala Glu His Gln Leu
545 550 555 560

Thr Leu Arg Gly Val Ile Ser Trp Gly Ser Gly Cys Gly Asp Arg Asn
565 570 575

Lys Pro Gly Val Tyr Thr Asp Val Ala Asn Tyr Leu Ala Trp Ile Gln
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Lys His Ile Ala Ser
595

<210> 2
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<212> PRT
<213> Mus musculus

<400> 2

Met Thr Ala Leu Leu Phe Leu Gly Ser Leu Leu Met Ser Leu Asp Leu
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Thr Leu Ser

<210> 3
<211> 335
<212> PRT
<213> Mus musculus

<400> 3

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35 40 45

Gly Ser Arg Pro Trp Cys Ala Thr Thr Pro Asn Phe Asp Glu Asp Gln
50 55 60

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

Lys His Asn Pro Cys His Lys Gly Gly Thr Cys Ile Asn Thr Pro Asn
85 90 95

Gly Pro His Cys Leu Cys Pro Glu His Leu Thr Gly Lys His Cys Gln
100 105 110

Lys Glu Lys Cys Phe Glu Pro Gln Leu Leu Lys Phe Phe His Glu Asn
115 120 125

Glu Leu Trp Phe Arg Thr Gly Pro Gly Gly Val Ala Arg Cys Glu Cys
130 135 140

Lys Gly Ser Glu Ala His Cys Lys Pro Val Ala Ser Gln Ala Cys Ser
145 150 155 160

Ile Asn Pro Cys Leu Asn Gly Gly Ser Cys Leu Leu Val Glu Asp His
165 170 175

Pro Leu Cys Arg Cys Pro Thr Gly Tyr Thr Gly Tyr Phe Cys Asp Leu
180 185 190

Asp Leu Trp Ala Thr Cys Tyr Glu Gly Arg Gly Leu Ser Tyr Arg Gly
195 200 205

Gln Ala Gly Thr Thr Gln Ser Gly Ala Pro Cys Gln Arg Trp Thr Val
210 215 220

Glu Ala Thr Tyr Arg Asn Met Thr Glu Lys Gln Ala Leu Ser Trp Gly

225 230 235 240

Leu Gly His His Ala Phe Cys Arg Asn Pro Asp Asn Asp Thr Arg Pro
245 250 255

Trp Cys Phe Val Trp Ser Gly Asp Arg Leu Ser Trp Asp Tyr Cys Gly
260 265 270

Leu Glu Gln Cys Gln Thr Pro Thr Phe Ala Pro Leu Val Val Pro Glu
275 280 285

Ser Gln Glu Glu Ser Pro Ser Gln Ala Pro Ser Leu Ser His Ala Pro
290 295 300

Asn Asp Ser Thr Asp His Gln Thr Ser Leu Ser Lys Thr Asn Thr Met
305 310 315 320

Gly Cys Gly Gln Arg Phe Arg Lys Gly Leu Ser Ser Phe Met Arg
325 330 335

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<211> 243
<212> PRT
<213> Mus musculus

<400> 4

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1 5 10 15

Ala Leu Tyr Trp Gly Asn Asn Phe Cys Ala Gly Ser Leu Ile Ala Pro
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Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asn Arg Pro Ala Pro
35 40 45

Glu Glu Leu Thr Val Val Leu Gly Gln Asp Arg His Asn Gln Ser Cys
50 55 60

Glu Trp Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg Leu His Glu Gly
65 70 75 80

Phe Ser Ser Ile Thr Tyr Gln His Asp Leu Ala Leu Leu Arg Leu Gln
85 90 95

Glu Ser Lys Thr Asn Ser Cys Ala Ile Leu Ser Pro His Val Gln Pro
100 105 110

Val Cys Leu Pro Ser Gly Ala Ala Pro Pro Ser Glu Thr Val Leu Cys
115 120 125

Glu Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala Glu Glu Tyr Ser
130 135 140

Thr Phe Leu Gln Glu Ala Gln Val Pro Phe Ile Ala Leu Asp Arg Cys
145 150 155 160

Ser Asn Ser Asn Val His Gly Asp Ala Ile Leu Pro Gly Met Leu Cys
165 170 175

Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln Gly Asp Ser Gly
180 185 190

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

Arg Gly Val Ile Ser Trp Gly Ser Gly Cys Gly Asp Arg Asn Lys Pro
210 215 220

Gly Val Tyr Thr Asp Val Ala Asn Tyr Leu Ala Trp Ile Gln Lys His
225 230 235 240

Ile Ala Ser

<210> 5
<211> 615
<212> PRT
<213> Homo sapiens

<220>
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<222> (1)..(19)
<223> Signal Peptide

<220>
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<222> (20)..(372)
<223> Heavy Chain

<220>
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<222> (373)..(615)
<223> Light Chain

<400> 5

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Thr Leu Ser Ile Pro Pro Trp Glu Ala Pro Lys Glu His Lys Tyr Lys
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Ala Glu Glu His Thr Val Val Leu Thr Val Thr Gly Glu Pro Cys His
35 40 45

Phe Pro Phe Gln Tyr His Arg Gln Leu Tyr His Lys Cys Thr His Lys
50 55 60

Gly Arg Pro Gly Pro Gln Pro Trp Cys Ala Thr Thr Pro Asn Phe Asp
65 70 75 80

Gln Asp Gln Arg Trp Gly Tyr Cys Leu Glu Pro Lys Lys Val Lys Asp
85 90 95

His Cys Ser Lys His Ser Pro Cys Gln Lys Gly Gly Thr Cys Val Asn
100 105 110

Met Pro Ser Gly Pro His Cys Leu Cys Pro Gln His Leu Thr Gly Asn
115 120 125

His Cys Gln Lys Glu Lys Cys Phe Glu Pro Gln Leu Leu Arg Phe Phe
130 135 140

His Lys Asn Glu Ile Trp Tyr Arg Thr Glu Gln Ala Ala Val Ala Arg
145 150 155 160

Cys Gln Cys Lys Gly Pro Asp Ala His Cys Gln Arg Leu Ala Ser Gln

165

170

175

Ala Cys Arg Thr Asn Pro Cys Leu His Gly Gly Arg Cys Leu Glu Val
 180 185 190

Glu Gly His Arg Leu Cys His Cys Pro Val Gly Tyr Thr Gly Pro Phe
 195 200 205

Cys Asp Val Asp Thr Lys Ala Ser Cys Tyr Asp Gly Arg Gly Leu Ser
 210 215 220

Tyr Arg Gly Leu Ala Arg Thr Thr Leu Ser Gly Ala Pro Cys Gln Pro
 225 230 235 240

Trp Ala Ser Glu Ala Thr Tyr Arg Asn Val Thr Ala Glu Gln Ala Arg
 245 250 255

Asn Trp Gly Leu Gly Gly His Ala Phe Cys Arg Asn Pro Asp Asn Asp
 260 265 270

Ile Arg Pro Trp Cys Phe Val Leu Asn Arg Asp Arg Leu Ser Trp Glu
 275 280 285

Tyr Cys Asp Leu Ala Gln Cys Gln Thr Pro Thr Gln Ala Ala Pro Pro
 290 295 300

Thr Pro Val Ser Pro Arg Leu His Val Pro Leu Met Pro Ala Gln Pro
 305 310 315 320

Ala Pro Pro Lys Pro Gln Pro Thr Thr Arg Thr Pro Pro Gln Ser Gln
 325 330 335

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

Arg Asn Gly Pro Leu Ser Cys Gly Gln Arg Leu Arg Lys Ser Leu Ser
 355 360 365

Ser Met Thr Arg Val Val Gly Gly Leu Val Ala Leu Arg Gly Ala His
 370 375 380

Pro Tyr Ile Ala Ala Leu Tyr Trp Gly His Ser Phe Cys Ala Gly Ser
385 390 395 400

Leu Ile Ala Pro Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asp
405 410 415

Arg Pro Ala Pro Glu Asp Leu Thr Val Val Leu Gly Gln Glu Arg Arg
420 425 430

Asn His Ser Cys Glu Pro Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg
435 440 445

Leu His Glu Ala Phe Ser Pro Val Ser Tyr Gln His Asp Leu Ala Leu
450 455 460

Leu Arg Leu Gln Glu Asp Ala Asp Gly Ser Cys Ala Leu Leu Ser Pro
465 470 475 480

Tyr Val Gln Pro Val Cys Leu Pro Ser Gly Ala Ala Arg Pro Ser Glu
485 490 495

Thr Thr Leu Cys Gln Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala
500 505 510

Glu Glu Tyr Ala Ser Phe Leu Gln Glu Ala Gln Val Pro Phe Leu Ser
515 520 525

Leu Glu Arg Cys Ser Ala Pro Asp Val His Gly Ser Ser Ile Leu Pro
530 535 540

Gly Met Leu Cys Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln
545 550 555 560

Gly Asp Ser Gly Gly Pro Leu Val Cys Glu Asp Gln Ala Ala Glu Arg
565 570 575

Arg Leu Thr Leu Gln Gly Ile Ile Ser Trp Gly Ser Gly Cys Gly Asp
580 585 590

Arg Asn Lys Pro Gly Val Tyr Thr Asp Val Ala Tyr Tyr Leu Ala Trp

595

600

605

Ile Arg Glu His Thr Val Ser
610 615

<210> 6
<211> 19
<212> PRT
<213> Homo sapiens

<400> 6

Met Arg Ala Leu Leu Leu Leu Gly Phe Leu Leu Val Ser Leu Glu Ser
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Thr Leu Ser

<210> 7
<211> 353
<212> PRT
<213> Homo sapiens

<400> 7

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His Thr Val Val Leu Thr Val Thr Gly Glu Pro Cys His Phe Pro Phe
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Gln Tyr His Arg Gln Leu Tyr His Lys Cys Thr His Lys Gly Arg Pro
35 40 45

Gly Pro Gln Pro Trp Cys Ala Thr Thr Pro Asn Phe Asp Gln Asp Gln
50 55 60

Arg Trp Gly Tyr Cys Leu Glu Pro Lys Lys Val Lys Asp His Cys Ser
65 70 75 80

Lys His Ser Pro Cys Gln Lys Gly Gly Thr Cys Val Asn Met Pro Ser
85 90 95

Gly Pro His Cys Leu Cys Pro Gln His Leu Thr Gly Asn His Cys Gln

100

105

110

Lys Glu Lys Cys Phe Glu Pro Gln Leu Leu Arg Phe Phe His Lys Asn
 115 120 125

Glu Ile Trp Tyr Arg Thr Glu Gln Ala Ala Val Ala Arg Cys Gln Cys
 130 135 140

Lys Gly Pro Asp Ala His Cys Gln Arg Leu Ala Ser Gln Ala Cys Arg
 145 150 155 160

Thr Asn Pro Cys Leu His Gly Gly Arg Cys Leu Glu Val Glu Gly His
 165 170 175

Arg Leu Cys His Cys Pro Val Gly Tyr Thr Gly Pro Phe Cys Asp Val
 180 185 190

Asp Thr Lys Ala Ser Cys Tyr Asp Gly Arg Gly Leu Ser Tyr Arg Gly
 195 200 205

Leu Ala Arg Thr Thr Leu Ser Gly Ala Pro Cys Gln Pro Trp Ala Ser
 210 215 220

Glu Ala Thr Tyr Arg Asn Val Thr Ala Glu Gln Ala Arg Asn Trp Gly
 225 230 235 240

Leu Gly Gly His Ala Phe Cys Arg Asn Pro Asp Asn Asp Ile Arg Pro
 245 250 255

Trp Cys Phe Val Leu Asn Arg Asp Arg Leu Ser Trp Glu Tyr Cys Asp
 260 265 270

Leu Ala Gln Cys Gln Thr Pro Thr Gln Ala Ala Pro Pro Thr Pro Val
 275 280 285

Ser Pro Arg Leu His Val Pro Leu Met Pro Ala Gln Pro Ala Pro Pro
 290 295 300

Lys Pro Gln Pro Thr Thr Arg Thr Pro Pro Gln Ser Gln Thr Pro Gly
 305 310 315 320

Ala Leu Pro Ala Lys Arg Glu Gln Pro Pro Ser Leu Thr Arg Asn Gly
325 330 335

Pro Leu Ser Cys Gly Gln Arg Leu Arg Lys Ser Leu Ser Ser Met Thr
340 345 350

Arg

<210> 8
<211> 243
<212> PRT
<213> Homo sapiens

<400> 8

Val Val Gly Gly Leu Val Ala Leu Arg Gly Ala His Pro Tyr Ile Ala
1 5 10 15

Ala Leu Tyr Trp Gly His Ser Phe Cys Ala Gly Ser Leu Ile Ala Pro
20 25 30

Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asp Arg Pro Ala Pro
35 40 45

Glu Asp Leu Thr Val Val Leu Gly Gln Glu Arg Arg Asn His Ser Cys
50 55 60

Glu Pro Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg Leu His Glu Ala
65 70 75 80

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

Glu Asp Ala Asp Gly Ser Cys Ala Leu Leu Ser Pro Tyr Val Gln Pro
100 105 110

Val Cys Leu Pro Ser Gly Ala Ala Arg Pro Ser Glu Thr Thr Leu Cys
115 120 125

Gln Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala Glu Glu Tyr Ala
130 135 140

Ser Phe Leu Gln Glu Ala Gln Val Pro Phe Leu Ser Leu Glu Arg Cys
145 150 155 160

Ser Ala Pro Asp Val His Gly Ser Ser Ile Leu Pro Gly Met Leu Cys
165 170 175

Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln Gly Asp Ser Gly
180 185 190

Gly Pro Leu Val Cys Glu Asp Gln Ala Ala Glu Arg Arg Leu Thr Leu
195 200 205

Gln Gly Ile Ile Ser Trp Gly Ser Gly Cys Gly Asp Arg Asn Lys Pro
210 215 220

Gly Val Tyr Thr Asp Val Ala Tyr Tyr Leu Ala Trp Ile Arg Glu His
225 230 235 240

Thr Val Ser

<210> 9
<211> 1794
<212> DNA
<213> Mus musculus

<220>
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<223> Signal Peptide

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<223> Heavy Chain

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<223> Light Chain

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actgtggatg ggaggctctg ccattttccc tttcagtacc accgtcagct acaccacaaa	180
tgcatccaca aaaggcggcc aggctccgc ccctggtgtg ctaccacccc caactttgat	240
gaagatcagc aatggggata ctgcttgag cccaagaaag tgaaagacca ttgcagcaaa	300
cacaacccgt gccacaaagg agggacatgt atcaacaccc ccaatgggcc aactgtctc	360
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ctcaagttct tccacgagaa tgagctatgg tttagaacgg ggccaggagg tgtggccagg	480
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<212> DNA
<213> Mus musculus

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<213> Homo sapiens

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<223> Signal Peptide

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<223> Heavy Chain

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<223> Light Chain

<400> 13

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Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp His Ile
835 840 845

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
850 855 860

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser Glu
865 870 875 880

Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu Asn Ala
885 890 895

Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys Ala Glu Arg
900 905 910

Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile Lys Arg Gln Leu
915 920 925

Val Glu Thr Arg Gln Ile Thr Lys His Val Ala Gln Ile Leu Asp Ser
930 935 940

Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp Lys Leu Ile Arg Glu Val
945 950 955 960

Lys Val Ile Thr Leu Lys Ser Lys Leu Val Ser Asp Phe Arg Lys Asp
965 970 975

Phe Gln Phe Tyr Lys Val Arg Glu Ile Asn Asn Tyr His His Ala His
980 985 990

Asp Ala Tyr Leu Asn Ala Val Val Gly Thr Ala Leu Ile Lys Lys Tyr
995 1000 1005

Pro Lys Leu Glu Ser Glu Phe Val Tyr Gly Asp Tyr Lys Val Tyr
1010 1015 1020

Asp Val Arg Lys Met Ile Ala Lys Ser Glu Gln Glu Ile Gly Lys
1025 1030 1035

Ala Thr Ala Lys Tyr Phe Phe Tyr Ser Asn Ile Met Asn Phe Phe
1040 1045 1050

Lys Thr Glu Ile Thr Leu Ala Asn Gly Glu Ile Arg Lys Arg Pro
1055 1060 1065

Leu Ile Glu Thr Asn Gly Glu Thr Gly Glu Ile Val Trp Asp Lys
1070 1075 1080

Gly Arg Asp Phe Ala Thr Val Arg Lys Val Leu Ser Met Pro Gln
1085 1090 1095

Val Asn Ile Val Lys Lys Thr Glu Val Gln Thr Gly Gly Phe Ser
1100 1105 1110

Lys Glu Ser Ile Leu Pro Lys Arg Asn Ser Asp Lys Leu Ile Ala
1115 1120 1125

Arg Lys Lys Asp Trp Asp Pro Lys Lys Tyr Gly Gly Phe Asp Ser
1130 1135 1140

Pro Thr Val Ala Tyr Ser Val Leu Val Val Ala Lys Val Glu Lys
1145 1150 1155

Gly Lys Ser Lys Lys Leu Lys Ser Val Lys Glu Leu Leu Gly Ile
1160 1165 1170

Thr Ile Met Glu Arg Ser Ser Phe Glu Lys Asn Pro Ile Asp Phe
1175 1180 1185

Leu Glu Ala Lys Gly Tyr Lys Glu Val Lys Lys Asp Leu Ile Ile
1190 1195 1200

Lys Leu Pro Lys Tyr Ser Leu Phe Glu Leu Glu Asn Gly Arg Lys
1205 1210 1215

Arg Met Leu Ala Ser Ala Gly Glu Leu Gln Lys Gly Asn Glu Leu
1220 1225 1230

Ala Leu Pro Ser Lys Tyr Val Asn Phe Leu Tyr Leu Ala Ser His
1235 1240 1245

Tyr Glu Lys Leu Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys Gln
1250 1255 1260

Leu Phe Val Glu Gln His Lys His Tyr Leu Asp Glu Ile Ile Glu
1265 1270 1275

Gln Ile Ser Glu Phe Ser Lys Arg Val Ile Leu Ala Asp Ala Asn
1280 1285 1290

Leu Asp Lys Val Leu Ser Ala Tyr Asn Lys His Arg Asp Lys Pro
1295 1300 1305

Ile Arg Glu Gln Ala Glu Asn Ile Ile His Leu Phe Thr Leu Thr
1310 1315 1320

Asn Leu Gly Ala Pro Ala Ala Phe Lys Tyr Phe Asp Thr Thr Ile
1325 1330 1335

Asp Arg Lys Arg Tyr Thr Ser Thr Lys Glu Val Leu Asp Ala Thr
1340 1345 1350

Leu Ile His Gln Ser Ile Thr Gly Leu Tyr Glu Thr Arg Ile Asp
1355 1360 1365

Leu Ser Gln Leu Gly Gly Asp Lys Arg Pro Ala Ala Thr Lys Lys
1370 1375 1380

Ala Gly Gln Ala Lys Lys Lys Lys
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<210> 36
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<222> (1)..(3)
<223> Start Codon

<220>
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<222> (10)..(30)
<223> 5' NLS

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<223> 3' NLS

<220>
<221> misc_feature
<222> (4174)..(4176)
<223> Stop Codon

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aggcggaaga acaggatctg ctatctgcaa gagatcttca gcaacgagat ggccaaggtg	300
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 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 37	
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<210> 38
 <211> 67
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 38	
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gugcuuu

67

<210> 39
<211> 77
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 39
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ggcaccgagu cggugcu 77

<210> 40
<211> 82
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 40
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aaaaguggca ccgagucggu gc 82

<210> 41
<211> 76
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 41
guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc cguaucaac uugaaaaagu 60
ggcaccgagu cggugc 76

<210> 42
<211> 86
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 42

guuuuagagc uaugcuggaa acagcauagc aaguuuuuuu aaggcuaguc cguuaucaac 60

uugaaaaagu ggcaccgagu cggugc 86

<210> 43
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (2)..(21)
<223> n is a, c, g, or t

<400> 43
gnnnnnnnnnn nnnnnnnnnnn ngg 23

<210> 44
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(21)
<223> n is a, c, g, or t

<400> 44
nnnnnnnnnnnn nnnnnnnnnnn ngg 23

<210> 45
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (3)..(23)
<223> n is a, c, g, or t

<400> 45
ggnnnnnnnnnn nnnnnnnnnnn nnnngg

25

<210> 46
<211> 615
<212> PRT
<213> Homo sapiens

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<222> (1)..(19)
<223> Signal Peptide

<220>
<221> MISC_FEATURE
<222> (20)..(372)
<223> Heavy Chain

<220>
<221> MISC_FEATURE
<222> (373)..(615)
<223> Light Chain

<400> 46

Met Arg Ala Leu Leu Leu Leu Gly Phe Leu Leu Val Ser Leu Glu Ser
1 5 10 15

Thr Leu Ser Ile Pro Pro Trp Glu Ala Pro Lys Glu His Lys Tyr Lys
20 25 30

Ala Glu Glu His Thr Val Val Leu Thr Val Thr Gly Glu Pro Cys His
35 40 45

Phe Pro Phe Gln Tyr His Arg Gln Leu Tyr His Lys Cys Thr His Lys
50 55 60

Gly Arg Pro Gly Pro Gln Pro Trp Cys Ala Thr Thr Pro Asn Phe Asp
65 70 75 80

Gln Asp Gln Arg Trp Gly Tyr Cys Leu Glu Pro Lys Lys Val Lys Asp
85 90 95

His Cys Ser Lys His Ser Pro Cys Gln Lys Gly Gly Thr Cys Val Asn
100 105 110

Met Pro Ser Gly Pro His Cys Leu Cys Pro Gln His Leu Thr Gly Asn
115 120 125

His Cys Gln Lys Glu Lys Cys Phe Glu Pro Gln Leu Leu Arg Phe Phe
130 135 140

His Lys Asn Glu Ile Trp Tyr Arg Thr Glu Gln Ala Ala Val Ala Arg
145 150 155 160

Cys Gln Cys Lys Gly Pro Asp Ala His Cys Gln Arg Leu Ala Ser Gln
165 170 175

Ala Cys Arg Thr Asn Pro Cys Leu His Gly Gly Arg Cys Leu Glu Val
180 185 190

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

Cys Asp Val Asp Thr Lys Ala Ser Cys Tyr Asp Gly Arg Gly Leu Ser
210 215 220

Tyr Arg Gly Leu Ala Arg Thr Thr Leu Ser Gly Ala Pro Cys Gln Pro
225 230 235 240

Trp Ala Ser Glu Ala Thr Tyr Arg Asn Val Thr Ala Glu Gln Ala Arg
245 250 255

Asn Trp Gly Leu Gly Gly His Ala Phe Cys Arg Asn Pro Asp Asn Asp
260 265 270

Ile Arg Pro Trp Cys Phe Val Leu Asn Arg Asp Arg Leu Ser Trp Glu
275 280 285

Tyr Cys Asp Leu Ala Gln Cys Gln Thr Pro Thr Gln Ala Ala Pro Pro
290 295 300

Thr Pro Val Ser Pro Arg Leu His Val Pro Leu Met Pro Ala Gln Pro
305 310 315 320

Ala Pro Pro Lys Pro Gln Pro Thr Thr Arg Thr Pro Pro Gln Ser Gln
325 330 335

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

Arg Asn Gly Pro Leu Ser Cys Gly Gln Arg Leu Arg Lys Ser Leu Ser
355 360 365

Ser Met Thr Arg Val Val Gly Gly Leu Val Ala Leu Arg Gly Ala His
370 375 380

Pro Tyr Ile Ala Ala Leu Tyr Trp Gly His Ser Phe Cys Ala Gly Ser
385 390 395 400

Leu Ile Ala Pro Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asp
405 410 415

Arg Pro Ala Pro Glu Asp Leu Thr Val Val Leu Gly Gln Glu Arg Arg
420 425 430

Asn His Ser Cys Glu Pro Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg
435 440 445

Leu His Glu Ala Phe Ser Pro Val Ser Tyr Gln His Asp Leu Ala Leu
450 455 460

Leu Arg Leu Gln Glu Asp Ala Asp Gly Ser Cys Ala Leu Leu Ser Pro
465 470 475 480

Tyr Val Gln Pro Val Cys Leu Pro Ser Gly Ala Ala Arg Pro Ser Glu
485 490 495

Thr Thr Leu Cys Gln Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala
500 505 510

Glu Glu Tyr Ala Ser Phe Leu Gln Glu Ala Gln Val Pro Phe Leu Ser
515 520 525

Leu Glu Arg Cys Ser Ala Pro Asp Val His Gly Ser Ser Ile Leu Pro
530 535 540

Gly Met Leu Cys Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln
545 550 555 560

Gly Asp Ser Gly Gly Pro Leu Val Cys Glu Asp Gln Ala Ala Glu Arg
565 570 575

Arg Leu Thr Leu Gln Gly Ile Ile Ser Trp Gly Ser Gly Cys Gly Asp
580 585 590

Arg Asn Lys Pro Gly Val Tyr Thr Asp Val Ala Tyr Tyr Leu Ala Trp
595 600 605

Ile Arg Glu His Thr Val Ser
610 615

<210> 47
<211> 353
<212> PRT
<213> Homo sapiens

<400> 47

Ile Pro Pro Trp Glu Ala Pro Lys Glu His Lys Tyr Lys Ala Glu Glu
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His Thr Val Val Leu Thr Val Thr Gly Glu Pro Cys His Phe Pro Phe
20 25 30

Gln Tyr His Arg Gln Leu Tyr His Lys Cys Thr His Lys Gly Arg Pro
35 40 45

Gly Pro Gln Pro Trp Cys Ala Thr Thr Pro Asn Phe Asp Gln Asp Gln
50 55 60

Arg Trp Gly Tyr Cys Leu Glu Pro Lys Lys Val Lys Asp His Cys Ser
65 70 75 80

Lys His Ser Pro Cys Gln Lys Gly Gly Thr Cys Val Asn Met Pro Ser
85 90 95

Gly Pro His Cys Leu Cys Pro Gln His Leu Thr Gly Asn His Cys Gln

100

105

110

Lys Glu Lys Cys Phe Glu Pro Gln Leu Leu Arg Phe Phe His Lys Asn
 115 120 125

Glu Ile Trp Tyr Arg Thr Glu Gln Ala Ala Val Ala Arg Cys Gln Cys
 130 135 140

Lys Gly Pro Asp Ala His Cys Gln Arg Leu Ala Ser Gln Ala Cys Arg
 145 150 155 160

Thr Asn Pro Cys Leu His Gly Gly Arg Cys Leu Glu Val Glu Gly His
 165 170 175

Arg Leu Cys His Cys Pro Val Gly Tyr Thr Gly Ala Phe Cys Asp Val
 180 185 190

Asp Thr Lys Ala Ser Cys Tyr Asp Gly Arg Gly Leu Ser Tyr Arg Gly
 195 200 205

Leu Ala Arg Thr Thr Leu Ser Gly Ala Pro Cys Gln Pro Trp Ala Ser
 210 215 220

Glu Ala Thr Tyr Arg Asn Val Thr Ala Glu Gln Ala Arg Asn Trp Gly
 225 230 235 240

Leu Gly Gly His Ala Phe Cys Arg Asn Pro Asp Asn Asp Ile Arg Pro
 245 250 255

Trp Cys Phe Val Leu Asn Arg Asp Arg Leu Ser Trp Glu Tyr Cys Asp
 260 265 270

Leu Ala Gln Cys Gln Thr Pro Thr Gln Ala Ala Pro Pro Thr Pro Val
 275 280 285

Ser Pro Arg Leu His Val Pro Leu Met Pro Ala Gln Pro Ala Pro Pro
 290 295 300

Lys Pro Gln Pro Thr Thr Arg Thr Pro Pro Gln Ser Gln Thr Pro Gly
 305 310 315 320

Ala Leu Pro Ala Lys Arg Glu Gln Pro Pro Ser Leu Thr Arg Asn Gly
325 330 335

Pro Leu Ser Cys Gly Gln Arg Leu Arg Lys Ser Leu Ser Ser Met Thr
340 345 350

Arg

<210> 48
<211> 1848
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)..(57)
<223> Signal Peptide

<220>
<221> misc_feature
<222> (58)..(1116)
<223> Heavy Chain

<220>
<221> misc_feature
<222> (1117)..(1845)
<223> Light Chain

<400> 48
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tgtaccaca agggccggcc aggccctcag ccctggtgtg ctaccacccc caactttgat 240
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<210> 49
 <211> 1059
 <212> DNA
 <213> Homo sapiens

<400> 49	
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aaatgtaccc acaagggccg gccaggccct cagccctggt gtgctaccac ccccaacttt	180
gatcaggacc agcgatgggg atactgtttg gagcccaaga aagtgaaga ccactgcagc	240
aaacacagcc cctgccagaa aggagggacc tgtgtgaaca tgccaagcgg cccccactgt	300
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cttctccggt ttttccaaa gaatgagata tggatataga ctgagcaagc agctgtggcc	420
agatgccagt gcaagggctc tgatgccccac tgccagcggc tggccagcca ggcctgccgc	480
accaacccgt gcctccatgg gggctcgtgc ctagagggtg agggccaccg cctgtgccac	540
tgcccggtgg gctacaccgg agccttctgc gacgtggaca ccaaggcaag ctgctatgat	600
ggccgcgggc tcagctaccg cggcctggcc aggaccacgc tctcgggtgc gccctgtcag	660
ccgtgggcct cggaggccac ctaccggaac gtgactgccg agcaagcgcg gaactgggga	720
ctgggcggcc acgccttctg ccggaacccg gacaacgaca tccgcccgtg gtgcttcgtg	780
ctgaaccgcg accggctgag ctgggagtac tgcgacctgg cacagtgcca gacccaacc	840
caggcggcgc ctccgacccc ggtgtcccct aggcttcatg tcccactcat gccgcgcag	900
ccggcaccgc cgaagcctca gccacgacc cggacccgc ctcagtcca gacccggga	960
gccttgccgg cgaagcggga gcagccgcct tccctgacca ggaacggccc actgagctgc	1020
gggcagcggc tccgcaagag tctgtcttcg atgaccgc	1059

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<220>
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<400> 50	
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<210> 51
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<220>
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<400> 51

tgccacttcc ccttccag 18

<210> 52
<211> 21
<212> DNA
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<220>
<223> Synthetic

<400> 52
actgtctctg tccacaacac c 21

<210> 53
<211> 18
<212> DNA
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<220>
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<400> 53
accaacccgt gcctccat 18

<210> 54
<211> 19
<212> DNA
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<220>
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<400> 54
gtgggtgcttc gtgctgaac 19

<210> 55
<211> 20
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<213> Artificial Sequence

<220>
<223> Synthetic

<400> 55
aggatctgac ggtgggtgctc 20

<210> 56
<211> 20
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 56

acaccgatgt ggcctactac

20

<210> 57

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 57

ccaggtggtc tcctctgact

20

<210> 58

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 58

cccaaggtgg aatcgaaagt g

21

<210> 59

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 59

gtagcacacc agggctgag

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<210> 60

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 60

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<210> 61
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<400> 61
gcagaaggct ccggtgtag 19

<210> 62
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<220>
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<400> 62
gttggggctct ggcactgtg 19

<210> 63
<211> 19
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<220>
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<400> 63
gtagctgacg ggcgagaag 19

<210> 64
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<220>
<223> Synthetic

<400> 64
actgcggaat caccaagga 19

<210> 65
<211> 21
<212> DNA

<213> Artificial Sequence

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<223> Synthetic

<400> 65

gcttgacaaa gtggtcgttg a

21

<210> 66

<211> 23

<212> DNA

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<220>

<223> Synthetic

<400> 66

catgagggct ctgctgctcc tgg

23

<210> 67

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 67

accaccggca gctgtaccac aaat

24

<210> 68

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 68

tcactggaaa ccactgccag aaagaga

27

<210> 69

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 69

ctgcctagag gtggagggcc acc 23

<210> 70
<211> 23
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<213> Artificial Sequence

<220>
<223> Synthetic

<400> 70
cgaccggctg agctgggagt act 23

<210> 71
<211> 23
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<213> Artificial Sequence

<220>
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<400> 71
ccaggaacgc cgtaaccaca gct 23

<210> 72
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72
ctggatccgg gagcacaccg ttt 23

<210> 73
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73
tcaacagcga caccactcc tc 22

<210> 74
<211> 300
<212> PRT

<213> Homo sapiens

<400> 74

Met Pro Ala Gln Pro Ala Pro Pro Lys Pro Gln Pro Thr Thr Arg Thr
1 5 10 15

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

Pro Pro Ser Leu Thr Arg Asn Gly Pro Leu Ser Cys Gly Gln Arg Leu
35 40 45

Arg Lys Ser Leu Ser Ser Met Thr Arg Val Val Gly Gly Leu Val Ala
50 55 60

Leu Arg Gly Ala His Pro Tyr Ile Ala Ala Leu Tyr Trp Gly His Ser
65 70 75 80

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

His Cys Leu Gln Asp Arg Pro Ala Pro Glu Asp Leu Thr Val Val Leu
100 105 110

Gly Gln Glu Arg Arg Asn His Ser Cys Glu Pro Cys Gln Thr Leu Ala
115 120 125

Val Arg Ser Tyr Arg Leu His Glu Ala Phe Ser Pro Val Ser Tyr Gln
130 135 140

His Asp Leu Ala Leu Leu Arg Leu Gln Glu Asp Ala Asp Gly Ser Cys
145 150 155 160

Ala Leu Leu Ser Pro Tyr Val Gln Pro Val Cys Leu Pro Ser Gly Ala
165 170 175

Ala Arg Pro Ser Glu Thr Thr Leu Cys Gln Val Ala Gly Trp Gly His
180 185 190

Gln Phe Glu Gly Ala Glu Glu Tyr Ala Ser Phe Leu Gln Glu Ala Gln
195 200 205

Val Pro Phe Leu Ser Leu Glu Arg Cys Ser Ala Pro Asp Val His Gly
 210 215 220

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

Thr Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Glu Asp
 245 250 255

Gln Ala Ala Glu Arg Arg Leu Thr Leu Gln Gly Ile Ile Ser Trp Gly
 260 265 270

Ser Gly Cys Gly Asp Arg Asn Lys Pro Gly Val Tyr Thr Asp Val Ala
 275 280 285

Tyr Tyr Leu Ala Trp Ile Arg Glu His Thr Val Ser
 290 295 300

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 <212> DNA
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 ccactgagct gcgggcagcg gctccgcaag agtctgtctt cgatgaccgc cgtcgttggc 180
 gggctggtgg cgctacgcgg ggcgcacccc tacatcgccg cgctgtactg gggccacagt 240
 ttctgcgccg gcagcctcat cgccccctgc tgggtgctga cggccgctca ctgcctgcag 300
 gaccggcccc caccgagga tctgacggtg gtgctcggcc aggaacgccg taaccacagc 360
 tgtgagccgt gccagacgtt ggccgtgcgc tcctaccgct tgcacgaggc cttctcgccc 420
 gtcagctacc agcacgacct ggctctgttg cgccttcagg aggatgcgga cggcagctgc 480
 gcgctcctgt cgccttacgt tcagccggtg tgcctgcaa gcggcgccgc gcgaccctcc 540
 gagaccacgc tctgccaggt ggccggctgg ggccaccagt tcgagggggc ggaggaatat 600
 gccagcttcc tgcaggaggc gcaggtaccg ttctctctcc tggagcgtg ctcagccccg 660

gacgtgcacg gatcctccat cctccccggc atgctctgcg cagggttcct cgagggcggc 720
 accgatgcgt gccagggtga ttccggaggc ccgctggtgt gtgaggacca agctgcagag 780
 cgccggctca ccctgcaagg catcatcagc tggggatcgg gctgtggtga ccgcaacaag 840
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 tga 903

<210> 76
 <211> 246
 <212> PRT
 <213> Homo sapiens

<400> 76

Met Thr Arg Val Val Gly Gly Leu Val Ala Leu Arg Gly Ala His Pro
 1 5 10 15

Tyr Ile Ala Ala Leu Tyr Trp Gly His Ser Phe Cys Ala Gly Ser Leu
 20 25 30

Ile Ala Pro Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asp Arg
 35 40 45

Pro Ala Pro Glu Asp Leu Thr Val Val Leu Gly Gln Glu Arg Arg Asn
 50 55 60

His Ser Cys Glu Pro Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg Leu
 65 70 75 80

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

Arg Leu Gln Glu Asp Ala Asp Gly Ser Cys Ala Leu Leu Ser Pro Tyr
 100 105 110

Val Gln Pro Val Cys Leu Pro Ser Gly Ala Ala Arg Pro Ser Glu Thr
 115 120 125

Thr Leu Cys Gln Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala Glu
 130 135 140

Glu Tyr Ala Ser Phe Leu Gln Glu Ala Gln Val Pro Phe Leu Ser Leu
145 150 155 160

Glu Arg Cys Ser Ala Pro Asp Val His Gly Ser Ser Ile Leu Pro Gly
165 170 175

Met Leu Cys Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln Gly
180 185 190

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

Leu Thr Leu Gln Gly Ile Ile Ser Trp Gly Ser Gly Cys Gly Asp Arg
210 215 220

Asn Lys Pro Gly Val Tyr Thr Asp Val Ala Tyr Tyr Leu Ala Trp Ile
225 230 235 240

Arg Glu His Thr Val Ser
245

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<211> 741

<212> DNA

<213> Homo sapiens

<400> 77

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gccgctcact gcctgcagga ccggcccgca cccgaggatc tgacggtggt gctcggccag 180

gaacgccgta accacagctg tgagccgtgc cagacgttgg ccgtgcgctc ctaccgcttg 240

cacgaggcct tctgcccgt cagctaccag cacgacctgg ctctgttgcg ccttcaggag 300

gatgcggacg gcagctgcgc gtcctgtcg ccttacgttc agccggtgtg cctgccaagc 360

ggcgccgcgc gaccctccga gaccacgctc tgccaggtgg ccggctgggg ccaccagttc 420

gagggggcgg aggaatatgc cagcttcctg caggaggcgc aggtaccgtt cctctccctg 480

gagcgtgct cagccccgga cgtgcacgga tcctccatcc tccccggcat gctctgcgca 540

gggttcctcg agggcggcac cgatgcgtgc cagggtgatt ccggaggccc gctggtgtgt 600

gaggaccaag ctgcagagcg ccggctcacc ctgcaaggca tcatcagctg gggatcgggc 660
 tgtggtgacc gcaacaagcc aggcgtctac accgatgtgg cctactacct ggcctggatc 720
 cgggagcaca ccgtttcctg a 741

<210> 78
 <211> 70
 <212> PRT
 <213> Homo sapiens

<400> 78

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

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

Asn Lys Pro Gly Val Tyr Thr Asp Val Ala Tyr Tyr Leu Ala Trp Ile
 50 55 60

Arg Glu His Thr Val Ser
 65 70

<210> 79
 <211> 213
 <212> DNA
 <213> Homo sapiens

<400> 79
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 ccgctggtgt gtgaggacca agctgcagag cgccggctca ccctgcaagg catcatcagc 120
 tggggatcgg gctgtggtga ccgcaacaag ccaggcgtct acaccgatgt ggcctactac 180
 ctggcctgga tccgggagca caccgtttcc tga 213

<210> 80
 <211> 72
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 80
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 gucggugcuu uu 72

<210> 81
 <211> 82
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 81
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 aaaaguggca ccgagucggu gc 82

<210> 82
 <211> 83
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 82
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 ggcaccgagu cggugcuuuu uuu 83

<210> 83
 <211> 80
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 83
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 ggcaccgagu cggugcuuuu 80

<210> 84
 <211> 92
 <212> RNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 84

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uugaaaaagu ggcaccgagu cggugcuuuu uu 92