SEQUENCE LISTING

<110> Pfizer Inc.
Damelin, Marc

<120> ANTI-PTK7 ANTIBODY-DRUG CONJUGATES

<130> PC72045

<160> 87

<170> PatentIn version 3.5

<210> 1
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 1

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

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

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

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

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Val Arg Ser Asn Tyr Gly Tyr Ala Trp Phe Ala Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 2
<211> 360
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic nucleotide sequence

<400> 2
cagatcacct tgaaggagtc tggtcctacg ctggtgaaac ccacacagac cctcacgctg 60

acctgcacct tctctgggtt ctcactcagc actagtaaca tgggtgtggg ctggatccgt 120

cagcccccag gaaaggccct ggagtggctt gcacacattt ggtgggatga tgataagtac 180

tacagcccat ctctgaagag caggctcacc atcaccaagg acacctccaa aaaccaggtg 240

gtccttacaa tgaccaacat ggaccctgtg gacacagcca catattactg tgttcgaagt 300

aactatggtt acgcctggtt tgcttactgg ggccaaggga ctctggtcac tgtctcttca 360

<210> 3
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 3

Thr Ser Asn Met Gly Val Gly
1 5

<210> 4
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 4

Gly Phe Ser Leu Ser Thr Ser Asn Met
1 5

<210> 5
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 5
actagtaaca tgggtgtggg c 21

<210> 6
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 6
gggttctcac tcagcactag taacatg 27

<210> 7
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 7

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

<210> 8
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 8

Trp Trp Asp Asp Asp
1 5

<210> 9
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 9
cacatttggt gggatgatga taagtactac agcccatctc tgaagagc 48

<210> 10
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 10
tggtgggatg atgat 15

<210> 11
<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 11

Ser Asn Tyr Gly Tyr Ala Trp Phe Ala Tyr
1 5 10

<210> 12
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 12
agtaactatg gttacgcctg gtttgcttac 30

<210> 13
<211> 449
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 13

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

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

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

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

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Val Arg Ser Asn Tyr Gly Tyr Ala Trp Phe Ala Tyr Trp Gly Gln
100 105 110

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

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
130 135 140

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

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

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

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
195 200 205

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

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225 230 235 240

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

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
260 265 270

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

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
290 295 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305 310 315 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
325 330 335

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

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
355 360 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
370 375 380

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
405 410 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
420 425 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
435 440 445

Gly

<210> 14
<211> 1347
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 14
cagatcacct tgaaggagtc tggtcctacg ctggtgaaac ccacacagac cctcacgctg 60

acctgcacct tctctgggtt ctcactcagc actagtaaca tgggtgtggg ctggatccgt 120

cagcccccag gaaaggccct ggagtggctt gcacacattt ggtgggatga tgataagtac 180

tacagcccat ctctgaagag caggctcacc atcaccaagg acacctccaa aaaccaggtg 240

gtccttacaa tgaccaacat ggaccctgtg gacacagcca catattactg tgttcgaagt 300

aactatggtt acgcctggtt tgcttactgg ggccaaggga ctctggtcac tgtctcttca 360

gcctccacca agggcccatc ggtcttcccc ctggcaccct cgagcaagag cacctctggg 420

ggcacagcgg ccctgggctg cctggtcaag gactacttcc ccgagccggt gacggtgtcg 480

tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 540

ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacccagacc 600

tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agttgagccc 660

aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 720

ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 780

gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 840

tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 900

agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 960

gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 1020

aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgcccccatc ccgggatgag 1080

ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 1140

gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 1200

ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 1260

cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg 1320

cagaagagcc tctccctgtc tccgggt 1347

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

<220>
<223> Synthetic peptide sequence

<400> 15

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

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

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

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

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

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

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

<210> 16
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 16
gacatccaga tgacccagtc tccatcttcc ctgtctgcat ctgtaggaga tagagtcact 60

atcacttgca aggcgagtca ggacatttat ccctatttaa actggttcca acaaaaacca 120

gggaaagctc ctaagaccct gatctatcgt acaaatagat tgctagatgg ggtcccatca 180

aggttcagtg gcagtggatc tggaacagat tttactttca ccatcagcag cctgcaacct 240

gaagatattg caacttatta ttgtctacag tatgatgagt ttccgctcac gttcggtgct 300

gggaccaagc tggaaatcaa a 321

<210> 17
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 17

Lys Ala Ser Gln Asp Ile Tyr Pro Tyr Leu Asn
1 5 10

<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 18
aaggcgagtc aggacattta tccctattta aac 33

<210> 19
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 19

Arg Thr Asn Arg Leu Leu Asp
1 5

<210> 20
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 20
cgtacaaata gattgctaga t 21

<210> 21
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 21

Leu Gln Tyr Asp Glu Phe Pro Leu Thr
1 5

<210> 22
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 22
ctacagtatg atgagtttcc gctcacg 27

<210> 23
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 23

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

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 24
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 24
gacatccaga tgacccagtc tccatcttcc ctgtctgcat ctgtaggaga tagagtcact 60

atcacttgca aggcgagtca ggacatttat ccctatttaa actggttcca acaaaaacca 120

gggaaagctc ctaagaccct gatctatcgt acaaatagat tgctagatgg ggtcccatca 180

aggttcagtg gcagtggatc tggaacagat tttactttca ccatcagcag cctgcaacct 240

gaagatattg caacttatta ttgtctacag tatgatgagt ttccgctcac gttcggtgct 300

gggaccaagc tggaaatcaa acggactgtg gctgcaccaa gtgtcttcat cttcccgcca 360

tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat 420

cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag 480

gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 540

ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600

ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 642

<210> 25
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 25

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

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

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

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

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

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

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

Thr Ser Val Thr Val Ser Ser
115

<210> 26
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 26
caggtccagc ttgtgcagtc tgggcctgag gtgaagaagc ctggggcctc agtgaaggtt 60

tcctgcaagg cttctggata caccttcact gactatgctg tgcattgggt gcgccaggcc 120

cccggaaaaa ggcttgagtg gattggagtg atcagcactt acaatgatta cacatacaat 180

aaccaggact tcaagggcag agtcaccatg accagggaca catccgcgag cacagcctac 240

atggagctga gcagactgag atctgaagac acggctgtgt attactgtgc gagaggtaac 300

tcctacttct atgctttgga ctactggggt caaggaacct cagtcaccgt ctcctca 357

<210> 27
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 27

Asp Tyr Ala Val His
1 5

<210> 28
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 28

Gly Tyr Thr Phe Thr Asp Tyr
1 5

<210> 29
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 29
gactatgctg tgcat 15

<210> 30
<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 30
ggatacacct tcactgacta t 21

<210> 31
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 31

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

Gly

<210> 32
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 32

Ser Thr Tyr Asn Asp Tyr
1 5

<210> 33
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 33
gtgatcagca cttacaatga ttacacatac aataaccagg acttcaaggg c 51

<210> 34
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 34
agcacttaca atgattac 18

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

<220>
<223> Synthetic peptide sequence

<400> 35

Gly Asn Ser Tyr Phe Tyr Ala Leu Asp Tyr
1 5 10

<210> 36
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 36
ggtaactcct acttctatgc tttggactac 30

<210> 37
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 37

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

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

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

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

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

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

85 90 95

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

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

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

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

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

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

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

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

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
225 230 235 240

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

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
260 265 270

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

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

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305 310 315 320

Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
325 330 335

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

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
355 360 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
370 375 380

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

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
405 410 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
420 425 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
435 440 445

<210> 38
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 38
caggtccagc ttgtgcagtc tgggcctgag gtgaagaagc ctggggcctc agtgaaggtt 60

tcctgcaagg cttctggata caccttcact gactatgctg tgcattgggt gcgccaggcc 120

cccggaaaaa ggcttgagtg gattggagtg atcagcactt acaatgatta cacatacaat 180

aaccaggact tcaagggcag agtcaccatg accagggaca catccgcgag cacagcctac 240

atggagctga gcagactgag atctgaagac acggctgtgt attactgtgc gagaggtaac 300

tcctacttct atgctttgga ctactggggt caaggaacct cagtcaccgt ctcctcagcc 360

tccaccaagg gcccatcggt cttccccctg gcaccctcga gcaagagcac ctctgggggc 420

acagcggccc tgggctgcct ggtcaaggac tacttccccg agccggtgac ggtgtcgtgg 480

aactcaggcg ccctgaccag cggcgtgcac accttcccgg ctgtcctaca gtcctcagga 540

ctctactccc tcagcagcgt ggtgaccgtg ccctccagca gcttgggcac ccagacctac 600

atctgcaacg tgaatcacaa gcccagcaac accaaggtgg acaagaaagt tgagcccaaa 660

tcttgtgaca aaactcacac atgcccaccg tgcccagcac ctgaactcct gggggggaccg 720

tcagtcttcc tcttcccccc aaaacccaag gacaccctca tgatctcccg gacccctgag 780

gtcacatgcg tggtggtgga cgtgagccac gaagaccctg aggtcaagtt caactggtac 840

gtggacggcg tggaggtgca taatgccaag acaaagccgc gggaggagca gtacaacagc 900

acgtaccgtg tggtcagcgt cctcaccgtc ctgcaccagg actggctgaa tggcaaggag 960

tacaagtgca aggtctccaa caaagccctc ccagccccca tcgagaaaac catctccaaa 1020

gccaaagggc agccccgaga accacaggtg tacaccctgc ccccatcccg ggatgagctg 1080

accaagaacc aggtcagcct gacctgcctg gtcaaaggct tctatcccag cgacatcgcc 1140

gtggagtggg agagcaatgg gcagccggag aacaactaca agaccacgcc tcccgtgctg 1200

gactccgacg gctccttctt cctctacagc aagctcaccg tggacaagag caggtggcag 1260

caggggaacg tcttctcatg ctccgtgatg catgaggctc tgcacaacca ctacacgcag 1320

aagagcctct ccctgtctcc ggga 1344

<210> 39
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 39

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Glu Ser Val Asp Ser Tyr
20 25 30

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

Arg Leu Leu Ile Tyr Arg Ala Ser Asn Leu Glu Ser Gly Ile Pro Ala
50 55 60

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

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

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

<210> 40
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 40
gaaattgtgt tgacacagtc tccagccacc ctgtctttgt ctccagggga aagagccacc 60

ctctcctgca gggccagtga gagtgttgac agctatggca aaagttttat gcactggtac 120

caacagaaac ctggccaggc tcccaggctc ctcatctata gggcatccaa cctggaatct 180

ggcatcccag ccaggttcag tggcagtggg tctgggacag acttcactct caccatcagc 240

agcctagagc ctgaagattt tgcagtttat tactgtcagc agagtaatga ggatccgtgg 300

acgttcggtg gaggcaccaa gctggaaatc aaa 333

<210> 41
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 41

Arg Ala Ser Glu Ser Val Asp Ser Tyr Gly Lys Ser Phe Met His
1 5 10 15

<210> 42
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 42
agggccagtg agagtgttga cagctatggc aaaagtttta tgcac 45

<210> 43
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 43

Arg Ala Ser Asn Leu Glu Ser

1 5

<210> 44
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 44
agggcatcca acctggaatc t 21

<210> 45
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 45

Gln Gln Ser Asn Glu Asp Pro Trp Thr
1 5

<210> 46
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 46
cagcagagta atgaggatcc gtggacg 27

<210> 47
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 47

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Glu Ser Val Asp Ser Tyr
20 25 30

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

Arg Leu Leu Ile Tyr Arg Ala Ser Asn Leu Glu Ser Gly Ile Pro Ala
50 55 60

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

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

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

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

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

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
145 150 155 160

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
165 170 175

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

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

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 48
<211> 654
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 48
gaaattgtgt tgacacagtc tccagccacc ctgtctttgt ctccagggga aagagccacc 60

ctctcctgca gggccagtga gagtgttgac agctatggca aaagttttat gcactggtac 120

caacagaaac ctggccaggc tcccaggctc ctcatctata gggcatccaa cctggaatct 180

ggcatcccag ccaggttcag tggcagtggg tctgggacag acttcactct caccatcagc 240

agcctagagc ctgaagattt tgcagtttat tactgtcagc agagtaatga ggatccgtgg 300

acgttcggtg gaggcaccaa gctggaaatc aaacggactg tggctgcacc aagtgtcttc 360

atcttcccgc catctgatga gcagttgaaa tctggaactg cctctgttgt gtgcctgctg 420

aataacttct atcccagaga ggccaaagta cagtggaagg tggataacgc cctccaatcg 480

ggtaactccc aggagagtgt cacagagcag gacagcaagg acagcaccta cagcctcagc 540

agcaccctga cgctgagcaa agcagactac gagaaacaca aagtctacgc ctgcgaagtc 600

acccatcagg gcctgagctc gcccgtcaca aagagcttca acaggggaga gtgt 654

<210> 49
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 49

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr
20 25 30

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

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

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

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

Thr Leu Ile Thr Thr Leu Val Pro Tyr Thr Met Asp Phe Trp Gly Gln
100 105 110

Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 50
<211> 360

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 50
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt cgactttagt agatattgga tgagctgggt ccgccaggct 120

ccagggaagg ggctggagtg gatcggcgac ctaaacccag attcaagtgc gataaactat 180

gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtac actcattact 300

acgttagtac cctatactat ggacttctgg ggtcaaggaa cctcagtcac cgtctcctca 360

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

<220>
<223> Synthetic peptide sequence

<400> 51

Arg Tyr Trp Met Ser
1 5

<210> 52
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 52

Gly Phe Asp Phe Ser Arg Tyr
1 5

<210> 53
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 53
agatattgga tgagc 15

<210> 54

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

<220>
<223> Synthetic nucleotide sequence

<400> 54
ggattcgact ttagtagata t 21

<210> 55
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 55

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

Gly

<210> 56
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 56

Asn Pro Asp Ser Ser Ala
1 5

<210> 57
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 57
gacctaaacc cagattcaag tgcgataaac tatgtggact ctgtgaaggg c 51

<210> 58
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic nucleotide sequence

<400> 58
aacccagatt caagtgcg 18

<210> 59
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 59

Ile Thr Thr Leu Val Pro Tyr Thr Met Asp Phe
1 5 10

<210> 60
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 60
attactacgt tagtacccta tactatggac ttc 33

<210> 61
<211> 449
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 61

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr
20 25 30

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

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

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

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

Thr Leu Ile Thr Thr Leu Val Pro Tyr Thr Met Asp Phe Trp Gly Gln
100 105 110

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

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
130 135 140

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

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

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

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
195 200 205

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

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225 230 235 240

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

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
260 265 270

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

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
290 295 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305 310 315 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
325 330 335

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

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
355 360 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
370 375 380

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
405 410 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
420 425 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
435 440 445

Gly

<210> 62
<211> 1347
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 62
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt cgactttagt agatattgga tgagctgggt ccgccaggct 120

ccagggaagg ggctggagtg gatcggcgac ctaaacccag attcaagtgc gataaactat 180

gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtac actcattact 300

acgttagtac cctatactat ggacttctgg ggtcaaggaa cctcagtcac cgtctcctca 360

gcctccacca agggcccatc ggtcttcccc ctggcaccct cgagcaagag cacctctggg 420

ggcacagcgg ccctgggctg cctggtcaag gactacttcc ccgagccggt gacggtgtcg 480

tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 540

ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacccagacc 600

tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agttgagccc 660

aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 720

ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 780

gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 840

tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 900

agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 960

gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 1020

aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgcccccatc ccgggatgag 1080

ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 1140

gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 1200

ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 1260

cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg 1320

cagaagagcc tctccctgtc tccgggt 1347

<210> 63
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 63

Glu Thr Thr Leu Thr Gln Ser Pro Ala Phe Met Ser Ala Thr Pro Gly
1 5 10 15

Asp Lys Val Asn Ile Ser Cys Ile Thr Asn Thr Asp Ile Asp Asp Asp
20 25 30

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

Ser Glu Gly Asn Gly Leu Arg Pro Gly Ile Pro Pro Arg Phe Ser Gly
50 55 60

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

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

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

<210> 64
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 64
gaaacgacac tcacgcagtc tccagcattc atgtcagcga ctccaggaga caaagtcaac 60

atctcctgca taaccaacac agacattgat gatgatatga actggtacca acagaaacca 120

ggagaagctg ctattctcct tatttcagaa ggtaatggtc tccgtcctgg aatcccacct 180

cgattcagtg gcagcgggta tggaacagat tttaccctca caattaataa catagaatct 240

gaggatgctg catattactt ctgtctacaa agtgataact tgcctctcac gttcggctcg 300

gggacaaagt tggaaataaa a 321

<210> 65
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 65

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

<210> 66
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 66
ataaccaaca cagacattga tgatgatatg aac 33

<210> 67
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 67

Glu Gly Asn Gly Leu Arg Pro
1 5

<210> 68
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 68
gaaggtaatg gtctccgtcc t 21

<210> 69
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 69

Leu Gln Ser Asp Asn Leu Pro Leu Thr
1 5

<210> 70
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 70
ctacaaagtg ataacttgcc tctcacg 27

<210> 71
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 71

Glu Thr Thr Leu Thr Gln Ser Pro Ala Phe Met Ser Ala Thr Pro Gly
1 5 10 15

Asp Lys Val Asn Ile Ser Cys Ile Thr Asn Thr Asp Ile Asp Asp Asp
20 25 30

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

Ser Glu Gly Asn Gly Leu Arg Pro Gly Ile Pro Pro Arg Phe Ser Gly
50 55 60

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 72
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 72

gaaacgacac tcacgcagtc tccagcattc atgtcagcga ctccaggaga caaagtcaac 60

atctcctgca taaccaacac agacattgat gatgatatga actggtacca acagaaacca 120

ggagaagctg ctattctcct tatttcagaa ggtaatggtc tccgtcctgg aatcccacct 180

cgattcagtg gcagcgggta tggaacagat tttaccctca caattaataa catagaatct 240

gaggatgctg catattactt ctgtctacaa agtgataact tgcctctcac gttcggctcg 300

gggacaaagt tggaaataaa acggactgtg gctgcaccaa gtgtcttcat cttcccgcca 360

tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat 420

cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag 480

gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 540

ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600

ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 642

<210> 73
<211> 1070
<212> PRT
<213> Homo sapiens

<400> 73

Met Gly Ala Ala Arg Gly Ser Pro Ala Arg Pro Arg Arg Leu Pro Leu
1 5 10 15

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

Val Phe Ile Lys Gln Pro Ser Ser Gln Asp Ala Leu Gln Gly Arg Arg
35 40 45

Ala Leu Leu Arg Cys Glu Val Glu Ala Pro Gly Pro Val His Val Tyr
50 55 60

Trp Leu Leu Asp Gly Ala Pro Val Gln Asp Thr Glu Arg Arg Phe Ala
65 70 75 80

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

Gly Thr Phe Gln Cys Val Ala Arg Asp Asp Val Thr Gly Glu Glu Ala
100 105 110

Arg Ser Ala Asn Ala Ser Phe Asn Ile Lys Trp Ile Glu Ala Gly Pro
115 120 125

Val Val Leu Lys His Pro Ala Ser Glu Ala Glu Ile Gln Pro Gln Thr
130 135 140

Gln Val Thr Leu Arg Cys His Ile Asp Gly His Pro Arg Pro Thr Tyr
145 150 155 160

Gln Trp Phe Arg Asp Gly Thr Pro Leu Ser Asp Gly Gln Ser Asn His
165 170 175

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

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

Ala Cys Ser Ser Gln Asn Phe Thr Leu Ser Ile Ala Asp Glu Ser Phe
210 215 220

Ala Arg Val Val Leu Ala Pro Gln Asp Val Val Val Ala Arg Tyr Glu
225 230 235 240

Glu Ala Met Phe His Cys Gln Phe Ser Ala Gln Pro Pro Pro Ser Leu
245 250 255

Gln Trp Leu Phe Glu Asp Glu Thr Pro Ile Thr Asn Arg Ser Arg Pro
260 265 270

Pro His Leu Arg Arg Ala Thr Val Phe Ala Asn Gly Ser Leu Leu Leu
275 280 285

Thr Gln Val Arg Pro Arg Asn Ala Gly Ile Tyr Arg Cys Ile Gly Gln
290 295 300

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

Glu Ile Glu Asp Met Pro Leu Phe Glu Pro Arg Val Phe Thr Ala Gly
325 330 335

Ser Glu Glu Arg Val Thr Cys Leu Pro Pro Lys Gly Leu Pro Glu Pro
340 345 350

Ser Val Trp Trp Glu His Ala Gly Val Arg Leu Pro Thr His Gly Arg
355 360 365

Val Tyr Gln Lys Gly His Glu Leu Val Leu Ala Asn Ile Ala Glu Ser
370 375 380

Asp Ala Gly Val Tyr Thr Cys His Ala Ala Asn Leu Ala Gly Gln Arg
385 390 395 400

Arg Gln Asp Val Asn Ile Thr Val Ala Thr Val Pro Ser Trp Leu Lys
405 410 415

Lys Pro Gln Asp Ser Gln Leu Glu Glu Gly Lys Pro Gly Tyr Leu Asp
420 425 430

Cys Leu Thr Gln Ala Thr Pro Lys Pro Thr Val Val Trp Tyr Arg Asn
435 440 445

Gln Met Leu Ile Ser Glu Asp Ser Arg Phe Glu Val Phe Lys Asn Gly
450 455 460

Thr Leu Arg Ile Asn Ser Val Glu Val Tyr Asp Gly Thr Trp Tyr Arg
465 470 475 480

Cys Met Ser Ser Thr Pro Ala Gly Ser Ile Glu Ala Gln Ala Arg Val
485 490 495

Gln Val Leu Glu Lys Leu Lys Phe Thr Pro Pro Pro Gln Pro Gln Gln
500 505 510

Cys Met Glu Phe Asp Lys Glu Ala Thr Val Pro Cys Ser Ala Thr Gly
515 520 525

Arg Glu Lys Pro Thr Ile Lys Trp Glu Arg Ala Asp Gly Ser Ser Leu
530 535 540

Pro Glu Trp Val Thr Asp Asn Ala Gly Thr Leu His Phe Ala Arg Val
545 550 555 560

Thr Arg Asp Asp Ala Gly Asn Tyr Thr Cys Ile Ala Ser Asn Gly Pro
565 570 575

Gln Gly Gln Ile Arg Ala His Val Gln Leu Thr Val Ala Val Phe Ile
580 585 590

Thr Phe Lys Val Glu Pro Glu Arg Thr Thr Val Tyr Gln Gly His Thr
595 600 605

Ala Leu Leu Gln Cys Glu Ala Gln Gly Asp Pro Lys Pro Leu Ile Gln

610 615 620

Trp Lys Gly Lys Asp Arg Ile Leu Asp Pro Thr Lys Leu Gly Pro Arg
625 630 635 640

Met His Ile Phe Gln Asn Gly Ser Leu Val Ile His Asp Val Ala Pro
645 650 655

Glu Asp Ser Gly Arg Tyr Thr Cys Ile Ala Gly Asn Ser Cys Asn Ile
660 665 670

Lys His Thr Glu Ala Pro Leu Tyr Val Val Asp Lys Pro Val Pro Glu
675 680 685

Glu Ser Glu Gly Pro Gly Ser Pro Pro Pro Tyr Lys Met Ile Gln Thr
690 695 700

Ile Gly Leu Ser Val Gly Ala Ala Val Ala Tyr Ile Ile Ala Val Leu
705 710 715 720

Gly Leu Met Phe Tyr Cys Lys Lys Arg Cys Lys Ala Lys Arg Leu Gln
725 730 735

Lys Gln Pro Glu Gly Glu Glu Pro Glu Met Glu Cys Leu Asn Gly Gly
740 745 750

Pro Leu Gln Asn Gly Gln Pro Ser Ala Glu Ile Gln Glu Glu Val Ala
755 760 765

Leu Thr Ser Leu Gly Ser Gly Pro Ala Ala Thr Asn Lys Arg His Ser
770 775 780

Thr Ser Asp Lys Met His Phe Pro Arg Ser Ser Leu Gln Pro Ile Thr
785 790 795 800

Thr Leu Gly Lys Ser Glu Phe Gly Glu Val Phe Leu Ala Lys Ala Gln
805 810 815

Gly Leu Glu Glu Gly Val Ala Glu Thr Leu Val Leu Val Lys Ser Leu
820 825 830

Gln Ser Lys Asp Glu Gln Gln Gln Leu Asp Phe Arg Arg Glu Leu Glu
835 840 845

Met Phe Gly Lys Leu Asn His Ala Asn Val Val Arg Leu Leu Gly Leu
850 855 860

Cys Arg Glu Ala Glu Pro His Tyr Met Val Leu Glu Tyr Val Asp Leu
865 870 875 880

Gly Asp Leu Lys Gln Phe Leu Arg Ile Ser Lys Ser Lys Asp Glu Lys
885 890 895

Leu Lys Ser Gln Pro Leu Ser Thr Lys Gln Lys Val Ala Leu Cys Thr
900 905 910

Gln Val Ala Leu Gly Met Glu His Leu Ser Asn Asn Arg Phe Val His
915 920 925

Lys Asp Leu Ala Ala Arg Asn Cys Leu Val Ser Ala Gln Arg Gln Val
930 935 940

Lys Val Ser Ala Leu Gly Leu Ser Lys Asp Val Tyr Asn Ser Glu Tyr
945 950 955 960

Tyr His Phe Arg Gln Ala Trp Val Pro Leu Arg Trp Met Ser Pro Glu
965 970 975

Ala Ile Leu Glu Gly Asp Phe Ser Thr Lys Ser Asp Val Trp Ala Phe
980 985 990

Gly Val Leu Met Trp Glu Val Phe Thr His Gly Glu Met Pro His Gly
995 1000 1005

Gly Gln Ala Asp Asp Glu Val Leu Ala Asp Leu Gln Ala Gly Lys
1010 1015 1020

Ala Arg Leu Pro Gln Pro Glu Gly Cys Pro Ser Lys Leu Tyr Arg
1025 1030 1035

Leu Met Gln Arg Cys Trp Ala Leu Ser Pro Lys Asp Arg Pro Ser
1040 1045 1050

Phe Ser Glu Ile Ala Ser Ala Leu Gly Asp Ser Thr Val Asp Ser
1055 1060 1065

Lys Pro
1070

<210> 74
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 74

Gly Gly Leu Leu Gln Gly Gly
1 5

<210> 75
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 75

Leu Leu Gln Gly Ala
1 5

<210> 76
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 76

Gly Gly Leu Leu Gln Gly Ala
1 5

<210> 77
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 77

Leu Leu Gln Gly Pro Gly Lys
1 5

<210> 78
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 78

Leu Leu Gln Gly Pro Gly
1 5

<210> 79
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 79

Leu Leu Gln Gly Pro Ala
1 5

<210> 80
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 80

Leu Leu Gln Gly Pro
1 5

<210> 81
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 81

Leu Leu Gln Pro
1

<210> 82
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 82

Leu Leu Gln Pro Gly Lys
1 5

<210> 83
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 83

Leu Leu Gln Gly Ala Pro Gly Lys
1 5

<210> 84
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 84

Leu Leu Gln Gly Ala Pro Gly
1 5

<210> 85
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 85

Leu Leu Gln Gly Ala Pro
1 5

<210> 86
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa can be G or P

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa can be A, G, P, or absent

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa can be A, G, K, P, or absent

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa can be G, K, or absent

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Xaa can be K or absent

<400> 86

Leu Leu Gln Xaa Xaa Xaa Xaa Xaa
1 5

<210> 87
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa can be any naturally occurring amino acid or absent

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa can be any naturally occurring amino acid or absent

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa can be any naturally occurring amino acid or absent

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Xaa can be any naturally occurring amino acid or absent

<400> 87

Leu Leu Gln Xaa Xaa Xaa Xaa Xaa
1 5