

SEQUENCE LISTING

<110> NOVARTIS AG

<120> ANTIBODIES TARGETING BONE MORPHOGENETIC PROTEIN 9 (BMP9) AND
METHODS THEREFOR

<130> PAT056928-WO-PCT02

<140>

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<150> PCT/CN2015/080887

<151> 2015-06-05

<160> 222

<170> PatentIn version 3.5

<210> 1

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<212> PRT

<213> Artificial Sequence

<220>

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<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 1

Arg Tyr Trp Met His

1 5

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<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 2

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

1 5 10 15

Ser

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

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 3
Gly Ser Asn Tyr Gly Gly Leu Val Tyr
1 5

<210> 4
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 4
Gly Tyr Thr Phe Thr Arg Tyr
1 5

<210> 5
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 5
Asn Pro Ser Gln Gly Gly
1 5

<210> 6
<211> 9

<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 6
Gly Ser Asn Tyr Gly Gly Leu Val Tyr
1 5

<210> 7
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 7
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

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

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

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

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

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

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

Leu Val Thr Val Ser Ser
115

<210> 8
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 8
caagtccagt tggccaatc gggcgagaa gtgaaaaagc cgggagcctc agtgaagggtg 60
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ccgggacagg gtctggaatg gatgggagag attaatccca gccaggagg caccaactac 180
aacgagaagt tcaagtcccg ggtcaccatg accgtggata agagcatcag cactgcctac 240
atggagctgt ccaggctgcg gtcggacgac accgccgtgt actactgcgc catcgggtca 300
aactacggcg gactggtgta ctggggccag gggaccctcg tgactgtgtc ctcg 354

<210> 9
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 9
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

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

Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met

35

40

45

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys

435

440

445

<210> 10

<211> 1344

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 10

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ccgggacagg gtctggaatg gatgggagag attaatccca gccaggagg caccaactac	180
aacgagaagt tcaagtccc ggtcaccatg accgtggata agagcatcag cactgcctac	240
atggagctgt ccaggctgcg gtcggacgac accgccgtgt actactgcg catcgggtca	300
aactacggcg gactggtgta ctggggccag gggaccctcg tgactgtgtc ctcggctagc	360
accaagggcc caagtgtgtt tcccctggcc cccagcagca agtctacttc cggcggaact	420
gctgccctgg gttgcctggt gaaggactac ttccccgagc ccgtgacagt gtcctggaac	480
tctggggctc tgacttccgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg	540
tacagcctga gcagcgtggt gacagtgtccc tccagctctc tgggaaccca gacctatc	600
tgcaacgtga accacaagcc cagcaacacc aagggtggaca agagagtgga gccaagagc	660
tgcgacaaga cccacacctg cccccctgc ccagctccag aactgctggg agggccttcc	720
gtgttcctgt tccccccaa gccaaggac accctgatga tcagcaggac ccccgagggtg	780
acctgcgtgg tgggtggacgt gtcccacgag gaccagagg tgaagttcaa ctggtacgtg	840
gacggcgtgg aggtgcacaa cgccaagacc aagcccagag aggagcagta caacagcacc	900
tacagggtgg tgtccgtgct gaccgtgctg caccaggact ggctgaacgg caaagaatac	960
aagtgcaaag tctccaacaa ggccctgcca gcccgaatcg aaaagacaat cagcaaggcc	1020
aagggccagc cacgggagcc ccagggtgtac accctgcccc ccagccggga ggagatgacc	1080

aagaaccagg tgtccctgac ctgtctggtg aagggcttct accccagcga tatcgccgtg 1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccaccccccc agtgctggac 1200
agcgacggca gcttcttcct gtacagcaag ctgaccgtgg acaagtccag gtggcagcag 1260
ggcaacgtgt tcagctgcag cgtgatgcac gagggcctgc acaaccacta cacccagaag 1320
tccctgagcc tgagccccgg caag 1344

<210> 11
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 11
Arg Ala Ser Glu Ser Leu Asp Asn Tyr Gly Ile Ser Phe Met Asn
1 5 10 15

<210> 12
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 12
Ala Ala Ser Asn Gln Gly Ser
1 5

<210> 13
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 13
Gln Gln Ser Lys Glu Val Pro Arg Thr
1 5

<210> 14
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 14
Ser Glu Ser Leu Asp Asn Tyr Gly Ile Ser Phe
1 5 10

<210> 15
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 15
Ala Ala Ser
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<210> 16
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 16
Ser Lys Glu Val Pro Arg
1 5

<210> 17
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 17
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 Leu Asp Asn Tyr
20 25 30

Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro
35 40 45

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

Glu Val Pro Arg Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 18
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 18
 gaaattgtgc tgacccagtc ccccgcgacg ctgtcactgt cccctgggga gcgggctacc 60
 ttgtcctgcc ggcctccga atcgctcgac aactacggca tcagcttcat gaactgggtc 120
 cagcaaaagc cgggacaggc cccacgggtc ctgatctacg ccgcatcgaa ccagggttca 180
 gggattcccc cgaggttctc gggatctgga tccggcaccg acttcactct gacaatcagc 240
 agcctgcagc ctgaagatac cgccgtgtac ttctgccaac agtccaagga ggtcccgcg 300
 acttttggcg gaggcaccaa agtggagatc aag 333

<210> 19
 <211> 218
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 19
 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 Leu Asp Asn Tyr
 20 25 30

Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro
 35 40 45

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

Glu Val Pro Arg Thr Phe Gly Gly Gly Thr Lys Val 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> 20

<211> 654

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 20

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ttgtcctgcc gcgcctccga atcgctcgac aactacggca tcagcttcat gaactggttc 120

cagcaaaagc cgggacaggc cccacggttc ctgatctacg ccgcatcgaa ccagggttca 180

gggattcccg cgaggttctc gggatctgga tccggcaccg acttcactct gacaatcagc 240

agcctgcagc ctgaagatac cgccgtgtac ttctgccaac agtccaagga ggtcccgcgg	300
acttttggcg gaggcaccaa agtggagatc aagcgtagcg tggccgctcc cagcgtgttc	360
atcttcccc ccagcgacga gcagctgaag agcggcaccg ccagcgtggt gtgcctgctg	420
aacaacttct acccccggga ggccaaggtg cagtggaagg tggacaacgc cctgcagagc	480
ggcaacagcc aggagagcgt caccgagcag gacagcaagg actccaccta cagcctgagc	540
agcaccctga ccctgagcaa ggccgactac gagaagcata aggtgtacgc ctgcgaggtg	600
accaccagg gcctgtccag ccccgtagcc aagagcttca acaggggcga gtgc	654

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

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 21
 Ser Tyr Ala Met Ser
 1 5

<210> 22
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 22
 Ile Thr Leu Gly Thr Gly His Thr His Tyr Ala Asp Ser Val Lys Gly
 1 5 10 15

<210> 23
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 23
Gly Ser Tyr Ile Ile Trp Ser Ala Leu Asp Tyr
1 5 10

<210> 24
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 24
Gly Phe Thr Phe Ser Ser Tyr
1 5

<210> 25
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 25
Leu Gly Thr Gly His
1 5

<210> 26
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 26

Gly Ser Tyr Ile Ile Trp Ser Ala Leu Asp Tyr
1 5 10

<210> 27

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 27

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

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

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

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

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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 28

<211> 357

<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 28
caagtccagc tgctcgaatc tggcggcgga ctggtgcagc ccggaggcag cctgcggctg 60
tcgtgtgccg cctccggatt caccttctca tcctacgcca tgtcctgggt ccgccaggca 120
ccggggaagg gactggaatg ggtgtcgatc accctgggaa ccgggcacac tcattatgcg 180
gactccgtga aagggcgctt caccatttcc cgggacaaca gcaagaacac tctgtacttg 240
caaatgaact ccctgagagc cgaggatacc gctgtgtact actgcgcgag gggctcctac 300
atcatctgga gcgccctgga ctactgggga cagggtactc tcgtgaccgt gtcgagc 357

<210> 29
<211> 449
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 29
Gln Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Ile Thr Leu Gly Thr Gly His Thr His Tyr Ala Asp Ser Val Lys
50 55 60
Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu

65		70		75		80
Gln Met Asn Ser	Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala					
	85		90		95	
Arg Gly Ser Tyr	Ile Ile Trp Ser Ala Leu Asp Tyr Trp Gly Gln Gly					
	100		105		110	
Thr Leu 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 Arg 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 Glu Glu Met 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

Lys

<210> 30

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 30
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tcgtgtgccg cctccggatt caccttctca tcctacgcca tgtcctgggt ccgccaggca 120
ccggggaagg gactggaatg ggtgtcgatc accctgggaa ccgggcacac tcattatgcg 180
gactccgtga aagggcgctt caccatttcc cgggacaaca gcaagaacac tctgtacttg 240
caaatgaact ccctgagagc cgaggatacc gctgtgtact actgcgcgag gggctcctac 300
atcatctgga gcgccctgga ctactgggga cagggtactc tcgtgaccgt gtcgagcgct 360
agcaccaagg gcccaagtgt gtttcccctg gccccagca gcaagtctac ttccggcgga 420
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ctgtacagcc tgagcagcgt ggtgacagtg ccctccagct ctctgggaac ccagacctat 600
atctgcaacg tgaaccacaa gcccagcaac accaagggtg acaagagagt ggagcccaag 660
agctgcgaca agaccacac ctgccccccc tgcccagctc cagaactgct gggagggcct 720
tccgtgttcc tgttcccccc caagcccaag gacaccctga tgatcagcag gacccccgag 780
gtgacctgcg tgggtggtgga cgtgtccac gaggaccag aggtgaagtt caactggtac 840
gtggacggcg tggaggtgca caacgccaag accaagccca gagaggagca gtacaacagc 900
acctacaggg tgggtgtccgt gctgaccgtg ctgcaccagg actggctgaa cggcaaagaa 960
tacaagtgca aagtctcaa caaggccctg ccagcccaa tcgaaaagac aatcagcaag 1020
gccaagggcc agccacggga gccccaggtg tacaccctgc ccccagccg ggaggagatg 1080
accaagaacc aggtgtccct gacctgtctg gtgaagggt tctaccccag cgatatcgcc 1140
gtggagtggg agagcaacgg ccagcccag aacaactaca agaccacccc ccagtgctg 1200

gacagcgacg gcagcttctt cctgtacagc aagctgaccg tggacaagtc caggtggcag 1260

cagggcaacg tgttcagctg cagcgtgatg cacgaggccc tgcacaacca ctacaccag 1320

aagtcctga gcctgagccc cggcaag 1347

<210> 31

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 31

Arg Ala Ser Gln Asp Ile Arg Ser Tyr Leu Asn

1 5 10

<210> 32

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 32

Asp Ala Ser Asn Leu Gln Ser

1 5

<210> 33

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 33

Gln Gln Ser Asp Thr Ser Pro Leu Thr

1 5

<210> 34
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 34
Ser Gln Asp Ile Arg Ser Tyr
1 5

<210> 35
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 35
Asp Ala Ser
1

<210> 36
<211> 6
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<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 36
Ser Asp Thr Ser Pro Leu
1 5

<210> 37
<211> 107
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 37

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

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

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

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

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

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 38

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 38

gacatccaga tgactcagtc accgtcatcg ctgtccgcct ccgtgggaga tcgggtcacc 60

attacctgtc gggcatccca agacatcaga agctacctga actggtatca gcagaagcct 120

gggaaggccc ccaagctgct catctacgac gcgagcaacc tccagtctgg agtgcccagc	180
cgcttctccg gttcggggtc cggcactgac ttaccctga ccatttcgtc cctgcaaccg	240
gaggatttcg ctacctacta ctgccagcag tccgacacaa gcccactgac gttcggccag	300
ggcaccaaag tggaaatcaa g	321

<210> 39
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 39
 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 Arg Ala Ser Gln Asp Ile Arg Ser Tyr
 20 25 30

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

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

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

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

Thr Phe Gly Gln Gly Thr Lys Val 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> 40

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 40

gacatccaga tgactcagtc accgtcatcg ctgtccgcct ccgtgggaga tcgggtcacc 60

attacctgtc gggcatccca agacatcaga agctacctga actggtatca gcagaagcct 120

gggaaggccc ccaagctgct catctacgac gcgagcaacc tccagtctgg agtgcccagc 180

cgcttctccg gttcggggtc cggcactgac tttaccctga ccatttcgtc cctgcaaccg 240

gaggatttcg ctacctacta ctgccagcag tccgacacaa gcccactgac gttcggccag 300

ggcaccaaag tggaaatcaa gcgtacggtg gccgctccca gcgtgttcat cttccccccc 360

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agcgacgagc agctgaagag cggcaccgcc agcgtggtgt gcctgctgaa caacttctac      420
ccccgggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag      480
gagagcgtca ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc      540
ctgagcaagg ccgactacga gaagcataag gtgtacgcct gcgagggtgac ccaccagggc      600
ctgtccagcc ccgtgaccaa gagcttcaac aggggcgagt gc                          642

```

```

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

```

```

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

```

```

<400> 41
Thr Tyr Trp Ile Gly
1              5

```

```

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

```

```

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

```

```

<400> 42
Ile Ile Tyr Pro Glu Gly Ser Tyr Thr Thr Tyr Ser Pro Ser Phe Gln
1              5              10              15

```

Gly

```

<210> 43
<211> 11
<212> PRT
<213> Artificial Sequence

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<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 43
Gly Lys Arg Val Asp Ala Ser Ser Phe Asp Tyr
1 5 10

<210> 44
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 44
Gly Tyr Ser Phe Thr Thr Tyr
1 5

<210> 45
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 45
Tyr Pro Glu Gly Ser Tyr
1 5

<210> 46
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 46

Gly Lys Arg Val Asp Ala Ser Ser Phe Asp Tyr
1 5 10

<210> 47

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 47

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

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Thr Tyr
20 25 30

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

Gly Ile Ile Tyr Pro Glu Gly Ser Tyr Thr Thr Tyr Ser Pro Ser Phe
50 55 60

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

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

Ala Arg Gly Lys Arg Val Asp Ala Ser Ser Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 48

<211> 360

<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 48
gaagtgcagc tcgtgcagtc cggagcggaa gtgaaaaagc cgggagaatc cctgaagatt 60
agctgcaagg ggtcggggta ctcatcacg acttactgga tcggctgggt ccggcagatg 120
cccggaaagg gactggagtg gatgggcatc atctacccgg agggcagcta caccacctac 180
tccccatcgt ttcaaggaca ggtcaccatt tccgccgata agtcaatcag caccgcctac 240
ctccaatggg cgagcctgaa ggcctccgac actgctatgt actattgcgc gagagggaag 300
cgcgtggacg cctcctcctt cgactactgg ggccagggca ctctggtcac cgtgtcctcg 360

<210> 49
<211> 450
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 49
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Thr Tyr
20 25 30

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

Gly Ile Ile Tyr Pro Glu Gly Ser Tyr Thr Thr Tyr Ser Pro Ser Phe
50 55 60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr

65					70						75				80
Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met	Tyr	Tyr	Cys
				85					90					95	
Ala	Arg	Gly	Lys	Arg	Val	Asp	Ala	Ser	Ser	Phe	Asp	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	Arg	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 Glu Glu Met 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 Lys
450

<210> 50

<211> 1350
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 50
gaagtgcagc tcgtgcagtc cggagcggaa gtgaaaaagc cgggagaatc cctgaagatt 60
agctgcaagg ggtcggggta ctcatcacg acttactgga tcggctgggt ccggcagatg 120
cccggaaagg gactggagtg gatgggcatc atctacccgg agggcagcta caccacctac 180
tccccatcgt ttcaaggaca ggtcaccatt tccgccgata agtcaatcag caccgcctac 240
ctccaatggg cgagcctgaa ggcctccgac actgctatgt actattgcgc gagagggaag 300
cgcgtggacg cctcctcctt cgactactgg ggccagggca ctctgggtcac cgtgtcctcg 360
gctagcacca agggcccaag tgtgtttccc ctggcccca gcagcaagtc tacttccggc 420
ggaactgctg ccctgggttg cctggtgaag gactacttcc ccgagcccgt gacagtgtcc 480
tggaactctg gggctctgac ttccggcgtg cacaccttcc ccgccgtgct gcagagcagc 540
ggcctgtaca gcctgagcag cgtggtgaca gtgccctcca gctctctggg aaccagacc 600
tatatctgca acgtgaacca caagcccagc aacaccaagg tggacaagag agtggagccc 660
aagagctgcg acaagaccca cacctgcccc ccctgcccag ctccagaact gctgggaggg 720
ccttccgtgt tcctgttccc cccaagccc aaggacacc tgatgatcag caggaccccc 780
gaggtgacct gcgtgggtgt ggacgtgtcc cacgaggacc cagaggtgaa gttcaactgg 840
tacgtggacg gcgtggaggt gcacaacgcc aagaccaagc ccagagagga gcagtacaac 900
agcacctaca ggggtggtgtc cgtgctgacc gtgctgcacc aggactggct gaacggcaaa 960
gaatacaagt gcaaagtctc caacaaggcc ctgccagccc caatcgaaaa gacaatcagc 1020
aaggccaagg gccagccacg ggagccccag gtgtacaccc tgccccccag ccgggaggag 1080
atgaccaaga accaggtgtc cctgacctgt ctggtgaagg gcttctaccc cagcgatatc 1140
gccgtggagt gggagagcaa cggccagccc gagaacaact acaagaccac cccccagtg 1200

ctggacagcg acggcagctt cttcctgtac agcaagctga ccgtggacaa gtccaggtgg 1260

cagcaggggca acgtgttcag ctgcagcgtg atgcacgagg ccctgcacaa ccactacacc 1320

cagaagtccc tgagcctgag ccccggcaag 1350

<210> 51

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 51

Ser Gly Ser Ser Ser Asn Ile Gly Asp Asn Tyr Val Ser

1

5

10

<210> 52

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 52

Arg Asn Asn Lys Arg Pro Ser

1

5

<210> 53

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 53

Ser Ser Thr Asp Lys Glu His Leu Val

1

5

<210> 54
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 54
Ser Ser Ser Asn Ile Gly Asp Asn Tyr
1 5

<210> 55
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 55
Arg Asn Asn
1

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 56
Thr Asp Lys Glu His Leu
1 5

<210> 57
<211> 108
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 57

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asp Asn
20 25 30

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

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

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
65 70 75 80

Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Thr Asp Lys Glu His
85 90 95

Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 58

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 58

caatcagtg tgacccagcc cccgagcgtg tccgggtgccc ctggacagcg ggtcaccatc 60

tcctgttccg gtcctcaag caatattggc gacaactatg tgtcgtggta ccagcagctg 120

115

120

125

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

Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly
 145 150 155 160

Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala
 165 170 175

Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser
 180 185 190

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

Ala Pro Thr Glu Cys Ser
 210

<210> 60

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 60

caatcagtgc tgacccagcc cccgagcgtg tccggtgccc ctggacagcg ggtcaccatc 60

tcctgttccg gtcctcaag caatattggc gacaactatg tgtcgtggta ccagcagctg 120

ccggggacgg cccctaagct gctgatctac cggaacaaca aaaggccatc cggcgtgccg 180

gatagattct cgggctcgaa gtccggaact agcgccagcc tggcaatcac cgggctgcag 240

gctgaagatg aggcggacta ctactgctcc tctaccgaca aggaacacct ggtgttcgga 300

ggaggaacca agctgactgt gctgggacag cctaaggctg cccccagcgt gaccctgttc 360

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ccccccagca gcgaggagct gcaggccaac aaggccaccc tgggtgtgcct gatcagcgac      420
ttctacccag gcgccgtgac cgtggcctgg aaggccgaca gcagccccgt gaaggccggc      480
gtggagacca ccacccccag caagcagagc aacaacaagt acgccgccag cagctacctg      540
agcctgaccc ccgagcagtg gaagagccac aggtcctaca gctgccaggt gacccacgag      600
ggcagcaccg tggaaaagac cgtggcccca accgagtgca gc                          642

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```

<210> 61
<211> 5
<212> PRT
<213> Artificial Sequence

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```

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

```

```

<400> 61
Ser Tyr Asn Met His
1              5

```

```

<210> 62
<211> 17
<212> PRT
<213> Artificial Sequence

```

```

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

```

```

<400> 62
Leu Ile Tyr Pro Gly Asn Ala Val Thr Ser Tyr Ser Gln Lys Phe Lys
1              5              10              15

```

Asp

```

<210> 63
<211> 13
<212> PRT
<213> Artificial Sequence

```

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 63
Asp Asp Tyr Phe Arg Gly Gly Ser Tyr Ala Met Asp Tyr
1 5 10

<210> 64
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 64
Gly Tyr Thr Phe Arg Ser Tyr
1 5

<210> 65
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 65
Tyr Pro Gly Asn Ala Val
1 5

<210> 66
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 66

Asp Asp Tyr Phe Arg Gly Gly Ser Tyr Ala Met Asp Tyr
1 5 10

<210> 67

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 67

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

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

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

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

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

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

Ala Lys Asp Asp Tyr Phe Arg Gly Gly Ser Tyr Ala Met Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 68

<211> 366

<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 68
caagtccagc tcgtccagtc cggggccgaa gtcaagaagc ccggagccag cgtgaaagtg 60
tcctgcaagg cgtcaggcta taccttccgg tcgtacaaca tgcactgggt cagacaggcc 120
ccaggacagg ggctggaatg gatgggcctg atctaccgga gaaacgctgt gactagctac 180
tcccaaaaagt tcaaggatcg cgtgacgatg accgtggata agtccacctc aaccgcgtac 240
atggagctgt cctcgtgag gtcggaggac accgcagtgt actactgcgc caaggacgac 300
tacttccggg gcggttccta cgccatggac tactggggac agggcaccac tgtgactgtg 360
tccagc 366

<210> 69
<211> 452
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 69
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Ser Tyr
20 25 30
Asn Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Leu Ile Tyr Pro Gly Asn Ala Val Thr Ser Tyr Ser Gln Lys Phe
50 55 60

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

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

Ala Lys Asp Asp Tyr Phe Arg Gly Gly Ser Tyr Ala Met Asp Tyr Trp
100 105 110

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

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

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

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

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

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

His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser
210 215 220

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

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
245 250 255

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser

260

265

270

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

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

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
 305 310 315 320

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

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

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

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

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

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

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

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

Ser Pro Gly Lys
 450

<210> 70
<211> 1356
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 70
caagtccagc tcgtccagtc cggggccgaa gtcaagaagc ccggagccag cgtgaaagtg 60
tcctgcaagg cgtcaggcta taccttccgg tcgtacaaca tgcactgggt cagacaggcc 120
ccaggacagg ggctggaatg gatgggcctg atctaccgga gaaacgctgt gactagctac 180
tcccaaaaagt tcaaggatcg cgtgacgatg accgtggata agtccacctc aaccgcgtac 240
atggagctgt cctcgctgag gtcggaggac accgcagtgt actactgcgc caaggacgac 300
tacttccggg gcggttccta cgccatggac tactggggac agggcaccac tgtgactgtg 360
tccagcgcta gcaccaaggg cccaagtgtg tttcccctgg ccccagcag caagtctact 420
tccggcggaa ctgctgccct gggttgcctg gtgaaggact acttccccga gcccgtgaca 480
gtgtcctgga actctggggc tctgacttcc ggcgtgcaca ctttccccgc cgtgctgcag 540
agcagcggcc tgtacagcct gagcagcgtg gtgacagtgc cctccagctc tctgggaacc 600
cagacctata tctgcaacgt gaaccacaag cccagcaaca ccaaggtgga caagagagtg 660
gagcccaaga gctgcgacaa gacccacacc tgccccccct gccagctcc agaactgctg 720
ggagggcctt ccgtgttcct gttccccccc aagcccaagg acaccctgat gatcagcagg 780
acccccgagg tgacctgcgt ggtggtggac gtgtccacag aggaccaga ggtgaagtgc 840
aactggtacg tggacggcgt ggaggtgcac aacgccaaga ccaagcccag agaggagcag 900
tacaacagca cctacagggt ggtgtccgtg ctgaccgtgc tgcaccagga ctggctgaac 960
ggcaaagaat acaagtgcaa agtctccaac aaggccctgc cagccccaat cgaaaagaca 1020
atcagcaagg ccaagggcca gccacgggag ccccagggtg acaccctgcc ccccagccgg 1080
gaggagatga ccaagaacca ggtgtccctg acctgtctgg tgaagggtt ctaccccagc 1140

gatatcgccg tggagtggga gagcaacggc cagcccgaga acaactacaa gaccaccccc 1200
ccagtgtctgg acagcgacgg cagcttcttc ctgtacagca agctgaccgt ggacaagtcc 1260
aggtggcagc agggcaacgt gttcagctgc agcgtgatgc acgaggccct gcacaaccac 1320
tacaccaga agtccctgag cctgagcccc ggcaag 1356

<210> 71

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 71

Arg Ala Ser Gln Ser Ile Arg Asn Asn Leu His
1 5 10

<210> 72

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 72

Tyr Ala Ser Gln Ser Ile Arg
1 5

<210> 73

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 73

Gln Gln Ser His Ser Trp Pro Tyr Thr
1 5

<210> 74

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 74

Ser Gln Ser Ile Arg Asn Asn
1 5

<210> 75

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 75

Tyr Ala Ser
1

<210> 76

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 76

Ser His Ser Trp Pro Tyr
1 5

<210> 77

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 77
Glu Ile Val Leu Thr Gln Ser Pro Asp Phe Gln Ser Val Thr Pro Lys
1 5 10 15

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

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

Lys Tyr Ala Ser Gln Ser Ile Arg Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 78
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 78
gaaattgtgc tgaccagag cccggacttc caatccgtga ctccaagga gaaggtcaca

atcacgtgca gagcatcgca gtccatccgg aacaacttgc actggtatca acagaagccc	120
gaccagtccc ctaagctgct gattaagtac gccagccagt cgatcagggg ggtgccatca	180
cggtttagcg gatccggatc aggcaccgac ttactctga ccatcaactc cctggaggct	240
gaagatgcgg ccacctacta ctgccagcag tcccattcgt ggccgtacac tttcggcggc	300
ggtaccaaag tggaaatcaa g	321

<210> 79
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 79
 Glu Ile Val Leu Thr Gln Ser Pro Asp Phe Gln Ser Val Thr Pro Lys
 1 5 10 15

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

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

Lys Tyr Ala Ser Gln Ser Ile Arg Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

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

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

Thr Phe Gly Gly Gly Thr Lys Val 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> 80

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 80

gaaattgtgc tgacccagag cccggacttc caatccgtga ctcccaagga gaaggtcaca 60

atcacgtgca gagcatcgca gtccatccgg aacaacttgc actggtatca acagaagccc 120

gaccagtccc ctaagctgct gattaagtac gccagccagt cgatcagggg ggtgccatca 180

cggtttagcg gatccggatc aggcaccgac ttactctga ccatcaactc cctggaggct 240

gaagatgcgg ccacctacta ctgccagcag tcccattcgt ggccgtacac tttcggcggc 300

ggtaccaaag tggaaatcaa gcgtacgggtg gccgctccca gcgtgttcat cttccccccc	360
agcgacgagc agctgaagag cggcaccgcc agcgtgggtg gcctgctgaa caacttctac	420
ccccgggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag	480
gagagcgtca ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc	540
ctgagcaagg ccgactacga gaagcataag gtgtacgcct gcgaggtgac ccaccagggc	600
ctgtccagcc ccgtgaccaa gagcttcaac aggggcgagt gc	642

<210> 81

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 81

Arg Tyr Trp Met His

1	5
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<210> 82

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 82

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

1	5	10	15
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Ser

<210> 83

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 83

Gly Ala Asn Tyr Gly Gly Leu Val Tyr
1 5

<210> 84

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 84

Gly Tyr Thr Phe Thr Arg Tyr
1 5

<210> 85

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 85

Asn Pro Ser Gln Gly Gly
1 5

<210> 86

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic

peptide"

<400> 86

Gly Ala Asn Tyr Gly Gly Leu Val Tyr
1 5

<210> 87

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 87

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

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

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

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

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

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

Ala Ile Gly Ala Asn Tyr Gly Gly Leu Val Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 88
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 88
caagtccagc tcgtccaatc gggcgccgaa gtgaaaaagc cgggagcctc cgtgaagggtg 60
tcctgcaagg cgtccggtta tactttcacg cgctactgga tgcactgggt cagacaggct 120
ccgggacagg gactggaatg gatgggagag attaaccctt cccaggaggg caccaactac 180
aacgagaagt tcaagtcccg gggtaccatg accgtggata agtccatcag cactgcctac 240
atggagctgt cccgcctgcg gtcggacgac accgccgtgt actactgcgc catcggggcg 300
aactacggcg gactggtgta ctggggccag gggactctcg tgactgtgtc ctcg 354

<210> 89
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 89
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

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

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

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

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

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

Ala Ile Gly Ala Asn Tyr Gly Gly Leu Val Tyr Trp Gly Gln Gly Thr
100 105 110

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

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

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

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

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

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

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

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

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

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro

260

265

270

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

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

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

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

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

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

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

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

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

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

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

<210> 90

<211> 1344

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 90

caagtccagc tcgtccaatc gggcgccgaa gtgaaaaagc cgggagcctc cgtgaagggtg	60
tcctgcaagg cgtccgggtta tacttttcacg cgctactgga tgcactgggt cagacaggct	120
ccgggacagg gactggaatg gatgggagag attaaccctt cccagggagg caccaactac	180
aacgagaagt tcaagtcccg gggtcaccatg accgtggata agtccatcag cactgcctac	240
atggagctgt cccgcctgcg gtcggacgac accgccgtgt actactgcgc catcggggcg	300
aactacggcg gactggtgta ctggggccag gggactctcg tgactgtgtc ctcggctagc	360
accaagggcc caagtgtgtt tcccctggcc cccagcagca agtctacttc cggcggaact	420
gctgccctgg gttgcctggt gaaggactac ttccccgagc ccgtgacagt gtcctggaac	480
tctggggctc tgacttccgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg	540
tacagcctga gcagcgtggt gacagtgtcc tccagctctc tgggaaccca gacctatata	600
tgcaacgtga accacaagcc cagcaacacc aagggtggaca agagagtgga gccaagagc	660
tgcgacaaga cccacacctg cccccctgc ccagctccag aactgctggg agggccttcc	720
gtgttcctgt tcccccccaa gccaaggac accctgatga tcagcaggac ccccgagggtg	780
acctgcgtgg tgggtggacgt gtcccacgag gaccagagg tgaagttcaa ctggtacgtg	840
gacggcgtgg aggtgcacaa cgccaagacc aagcccagag aggagcagta caacagcacc	900
tacagggtgg tgtccgtgct gaccgtgctg caccaggact ggctgaacgg caaagaatac	960
aagtgcaaag tctccaacaa ggccctgccg gcccgaatcg aaaagacaat cagcaaggcc	1020
aagggccagc cacgggagcc ccaggtgtac accctgcccc ccagccggga ggagatgacc	1080
aagaaccagg tgtccctgac ctgtctggtg aagggttctt accccagcga tatcgcctg	1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccaccccccc agtgctggac	1200
agcgacggca gcttcttcct gtacagcaag ctgaccgtgg acaagtccag gtggcagcag	1260

ggcaacgtgt tcagctgcag cgtgatgcac gaggccctgc acaaccacta caccagaag 1320
tccctgagcc tgagccccgg caag 1344

<210> 91
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 91
Arg Ala Ser Glu Ser Leu Asp Asn Tyr Gly Ile Ser Phe Met Asn
1 5 10 15

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 92
Ala Ala Ser Asn Gln Gly Ser
1 5

<210> 93
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 93
Gln Gln Ser Lys Glu Val Pro Arg Thr
1 5

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 94
Ser Glu Ser Leu Asp Asn Tyr Gly Ile Ser Phe
1 5 10

<210> 95
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 95
Ala Ala Ser
1

<210> 96
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 96
Ser Lys Glu Val Pro Arg
1 5

<210> 97
<211> 111
<212> PRT
<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 97

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 Leu Asp Asn Tyr
20 25 30

Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro
35 40 45

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

Glu Val Pro Arg Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 98

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 98

gaaattgtgc tgacccagtc ccccgcgacg ctgtcactgt cccctgggga gcgggctacc 60

ttgtcctgcc ggcctccga atcgctcgac aactacggca tcagcttcat gaactgggttc 120

cagcaaaagc cgggacaggc cccacggttc ctgatctacg ccgcatcgaa ccagggttca 180

gggattccccg cgaggttctc gggatctgga tccggcaccg acttcactct gacaatcagc 240
 agcctgcagc ctgaagatac cgccgtgtac ttctgccaac agtccaagga ggtccccgcg 300
 acttttggcg gaggcaccaa agtggagatc aag 333

<210> 99
 <211> 218
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 99
 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 Leu Asp Asn Tyr
 20 25 30

Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro
 35 40 45

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

Glu Val Pro Arg Thr Phe Gly Gly Gly Thr Lys Val 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> 100

<211> 654

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 100

gaaattgtgc tgaccagtc cccgcgacg ctgtcactgt cccctgggga gcgggctacc 60

ttgtcctgcc gcgcctccga atcgctcgac aactacggca tcagcttcac gaactgggttc 120

cagcaaaagc cgggacaggc cccacgggttc ctgatctacg ccgcatcgaa ccagggttca 180

gggattcccg cgaggttctc gggatctgga tccggcaccg acttcactct gacaatcagc 240

agcctgcagc ctgaagatac cgccgtgtac ttctgccaac agtccaagga ggtcccgcgg 300

acttttggcg gaggcaccaa agtggagatc aagcgtacgg tggccgctcc cagcgtgttc 360

atcttccccc ccagcgacga gcagctgaag agcggcaccg ccagcgtggt gtgcctgctg 420

aacaacttct acccccggga ggccaagggtg cagtgggaagg tggacaacgc cctgcagagc	480
ggcaacagcc aggagagcgt caccgagcag gacagcaagg actccaccta cagcctgagc	540
agcaccctga ccctgagcaa ggccgactac gagaagcata aggtgtacgc ctgcgaggtg	600
accaccagg gcctgtccag ccccgtagacc aagagcttca acaggggcga gtgc	654

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

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 101
 Ser Tyr Ala Ile Ser
 1 5

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

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 102
 His Ile Ile Pro His Trp Gly His Ala Arg Tyr Ala Gln Lys Phe Gln
 1 5 10 15

Gly

<210> 103
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 103

Ser Ala Ser Ser Leu Pro His Phe His Trp Phe Asp Tyr
1 5 10

<210> 104

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 104

Gly Gly Thr Phe Ser Ser Tyr
1 5

<210> 105

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 105

Ile Pro His Trp Gly His
1 5

<210> 106

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 106

Ser Ala Ser Ser Leu Pro His Phe His Trp Phe Asp Tyr

1 5 10

<210> 107

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 107

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

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

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

Gly His Ile Ile Pro His Trp Gly His Ala Arg Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Ser Ala Ser Ser Leu Pro His Phe His Trp Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 108

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 108

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caagtccaac tcgtgcagtc tggagcagaa gtcaagaagc cgggctcaag cgtgaagggtg      60
tcctgcaaag ccagcggagg gaccttctcc tcctatgcca tctcatgggt cagacaggcc      120
ccgggccagg gcctggaatg gatgggtcac atcatcccc attggggaca cgcgcgctac      180
gcccagaagt ttcagggccg cgtgactatt accgcggacg aaagcacttc caccgcctac      240
atggagctgt cctccctgcg gtcggaggac accgcagtgt actactgcgc ccggtcggct      300
tcgtccctgc cacacttcca ctggttcgat tactggggac aggggaaccct ggtcactgtg      360
tccagc                                          366
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<210> 109

<211> 452

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 109

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

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

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

```
Gly His Ile Ile Pro His Trp Gly His Ala Arg Tyr Ala Gln Lys Phe
50          55          60
```

```
Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr
```

65		70		75		80	
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser
			85				Glu
							Asp
							Thr
							Ala
							Val
							Tyr
							Tyr
							Cys
							95
Ala	Arg	Ser	Ala	Ser	Ser	Leu	Pro
			100				His
							Phe
							His
							Trp
							Phe
							Asp
							Tyr
							Trp
							110
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val
		115					120
							Ser
							Ser
							Ala
							Ser
							Thr
							Lys
							Gly
							Pro
							125
Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser
							Ser
							Lys
							Ser
							Thr
							Ser
							Gly
							Gly
							Thr
							130
Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys
							Asp
							Tyr
							Phe
							Pro
							Glu
							Pro
							Val
							Thr
							145
Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu
							Thr
							Ser
							Gly
							Val
							His
							Thr
							Phe
							Pro
							165
Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu
							Tyr
							Ser
							Leu
							Ser
							Ser
							Val
							Val
							Thr
							180
Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr
							Gln
							Thr
							Tyr
							Ile
							Cys
							Asn
							Val
							Asn
							195
His	Lys	Pro	Ser	Asn	Thr	Lys	Val
							Asp
							Lys
							Arg
							Val
							Glu
							Pro
							Lys
							Ser
							210
Cys	Asp	Lys	Thr	His	Thr	Cys	Pro
							Pro
							Cys
							Pro
							Ala
							Pro
							Glu
							Leu
							Leu
							225
Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe
							Pro
							Pro
							Lys
							Pro
							Lys
							Asp
							Thr
							Leu
							245
Met	Ile	Ser	Arg	Thr	Pro	Glu	Val
							Thr
							Cys
							Val
							Val
							Val
							Asp
							Val
							Ser
							260
							265
							270

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

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

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
305 310 315 320

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

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

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

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

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

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

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

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

Ser Pro Gly Lys
450

<210> 110

<211> 1356
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 110
caagtccaac tcgtgcagtc tggagcagaa gtcaagaagc cgggctcaag cgtgaagggtg 60
tcctgcaaag ccagcggagg gaccttctcc tcctatgcca tctcatgggt cagacaggcc 120
ccgggccagg gcctggaatg gatgggtcac atcatcccc attggggaca cgcgcgtac 180
gcccagaagt ttcagggccg cgtgactatt accgcggacg aaagcacttc caccgcctac 240
atggagctgt cctccctgcg gtcggaggac accgcagtgt actactgcgc ccggtcggct 300
tcgtccctgc cacacttcca ctggttcgat tactggggac agggaaacct ggctactgtg 360
tccagcgcta gcaccaaggg cccaagtgtg tttcccctgg ccccagcag caagtctact 420
tccggcggaa ctgctgccct gggttgcctg gtgaaggact acttccccga gcccgtgaca 480
gtgtcctgga actctggggc tctgacttcc ggcgtgcaca ctttccccgc cgtgctgcag 540
agcagcggcc tgtacagcct gagcagcgtg gtgacagtgc cctccagctc tctgggaacc 600
cagacctata tctgcaacgt gaaccacaag cccagcaaca ccaaggtgga caagagagtg 660
gagcccaaga gctgcgacaa gacccacacc tgccccccct gccagctcc agaactgctg 720
ggagggcctt ccgtgttcct gttccccccc aagcccaagg acaccctgat gatcagcagg 780
acccccgagg tgacctgcgt ggtggtggac gtgtcccacg aggaccaga ggtgaagttc 840
aactggtacg tggacggcgt ggagggtcac aacgccaaga ccaagcccag agaggagcag 900
tacaacagca cctacagggt ggtgtccgtg ctgaccgtgc tgcaccagga ctggctgaac 960
ggcaaagaat acaagtgcaa agtctccaac aaggccctgc cagccccaat cgaaaagaca 1020
atcagcaagg ccaagggcc a gccacgggag ccccagggtg acaccctgcc ccccagccgg 1080
gaggagatga ccaagaacca ggtgtccctg acctgtctgg tgaagggtt ctacccagc 1140
gatatcgccg tggagtggga gagcaacggc cagcccagaga acaactacaa gaccaccccc 1200

ccagtgtctgg acagcgacgg cagcttcttc ctgtacagca agctgaccgt ggacaagtcc 1260

aggtggcagc agggcaacgt gttcagctgc agcgtgatgc acgaggccct gcacaaccac 1320

tacacccaga agtccctgag cctgagcccc ggcaag 1356

<210> 111

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 111

Arg Ala Ser Gln Asp Ile Asn Asn Tyr Leu Asn
1 5 10

<210> 112

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 112

Ala Ala Ser Arg Leu Gln Ser
1 5

<210> 113

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 113

Gln Gln Arg Asp Thr Thr Pro Trp Thr
1 5

<210> 114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 114
Ser Gln Asp Ile Asn Asn Tyr
1 5

<210> 115
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 115
Ala Ala Ser
1

<210> 116
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 116
Arg Asp Thr Thr Pro Trp
1 5

<210> 117
<211> 107
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 117

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Arg Asp Thr Thr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 118

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 118

gatatccaga tgactcagtc cccatcctcc ctgtcggcct ccgtgggcga tcgggtcact 60

attacgtgcc gcgccagcca ggacattaac aactacctga actggtatca acagaagccg 120

gggaaggccc ctaagctgct gatctacgct gcaagccggt tgcagtcagg agtgcacctca 180
 aggttctccg gttccggatc gggcaccgac ttcaccctga ccatcagcag cctccagccg 240
 gaggactttg cgacctacta ctgtcagcaa agagacacca cccctggac attcggacag 300
 ggcaccaaag tggaaatcaa g 321

<210> 119
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 119
 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 Arg Ala Ser Gln Asp Ile Asn Asn Tyr
 20 25 30

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Arg Asp Thr Thr Pro Trp
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Val 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> 120

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 120

gatatccaga tgactcagtc cccatcctcc ctgtcggcct ccgtgggcga tcgggtcact 60

attacgtgcc gcgccagcca ggacattaac aactacctga actggtatca acagaagccg 120

gggaaggccc ctaagctgct gatctacgct gcaagccggt tgcagtcagg agtgccctca 180

aggttctccg gttccggatc gggcaccgac ttcaccctga ccatcagcag cctccagccg 240

gaggactttg cgacctacta ctgtcagcaa agagacacca cccctggac attcggacag 300

ggcaccaaag tggaaatcaa gcgtacggtg gccgctccca gcgtgttcat cttccccccc 360

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agcgacgagc agctgaagag cggcaccgcc agcgtggtgt gcctgctgaa caacttctac      420
ccccgggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag      480
gagagcgtca ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc      540
ctgagcaagg ccgactacga gaagcataag gtgtacgcct gcgagggtgac ccaccagggc      600
ctgtccagcc ccgtgaccaa gagcttcaac aggggcgagt gc                          642

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<210> 121
<211> 5
<212> PRT
<213> Artificial Sequence

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<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

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<400> 121
Ser Ala Trp Met Ser
1              5

```

```

<210> 122
<211> 19
<212> PRT
<213> Artificial Sequence

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<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

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<400> 122
His Ile Lys Ser Lys Thr Tyr Gly Gly Thr Ile Asp Tyr Ala Ala Pro
1              5              10              15

```

```

Val Lys Gly

```

```

<210> 123
<211> 13
<212> PRT
<213> Artificial Sequence

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<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 123
Val Gly Gly Tyr Tyr Gly Tyr Gly Tyr Ala Phe Ala Tyr
1 5 10

<210> 124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 124
Gly Phe Thr Phe Ser Ser Ala
1 5

<210> 125
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 125
Lys Ser Lys Thr Tyr Gly Gly Thr
1 5

<210> 126
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 126

Val Gly Gly Tyr Tyr Gly Tyr Gly Tyr Ala Phe Ala Tyr
1 5 10

<210> 127

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 127

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

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

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

Gly His Ile Lys Ser Lys Thr Tyr Gly Gly Thr Ile Asp Tyr Ala Ala
50 55 60

Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

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

Tyr Cys Ala Arg Val Gly Gly Tyr Tyr Gly Tyr Gly Tyr Ala Phe Ala
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 128

<211> 372

<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 128
caagtccagc tcgtcgaatc cggtaggcgga ctctgaagc cgggaggatc cctgcggctg 60
tcctgcgccg cctccgggtt cactttttcc tccgcatgga tgtcatgggt ccgccaggcc 120
cccggaagg gtctggaatg ggtaggcac atcaagtcaa agacctacgg cggcaccatt 180
gactacgccg cccagtgaa aggaaggttc actatctgc ggtagcacag caagaacacc 240
ctgtatctgc aaatgaacag cctcaagacc gaggatactg cgggtgtacta ctgcgaaga 300
gtgggcggat actacgggta cggctacgct ttcgcgtact ggggacaggg caccctcgtg 360
accgtgtcga gc 372

<210> 129
<211> 454
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 129
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Ala
20 25 30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Gly His Ile Lys Ser Lys Thr Tyr Gly Gly Thr Ile Asp Tyr Ala Ala
50 55 60

Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

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

Tyr Cys Ala Arg Val Gly Gly Tyr Tyr Gly Tyr Gly Tyr Ala Phe Ala
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys
115 120 125

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

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

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

Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val
180 185 190

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

Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro
210 215 220

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

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

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp

260

265

270

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

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

Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp
 305 310 315 320

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

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

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

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
 370 375 380

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

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

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
 420 425 430

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

Ser Leu Ser Pro Gly Lys
 450

<210> 130
<211> 1362
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 130
caagtccagc tcgtcgaatc cggtagcgga ctcgtgaagc cgggaggatc cctgcggctg 60
tcctgcgccg cctccgggtt cactttttcc tccgcatgga tgtcatgggt ccgccaggcc 120
cccgggaagg gtctggaatg ggtagggcac atcaagtcaa agacctacgg cggcaccatt 180
gactacgccg cccagtgaa aggaagggtt actatctcgc gggacgacag caagaacacc 240
ctgtatctgc aaatgaacag cctcaagacc gaggatactg cgggtgtacta ctgcgcaaga 300
gtgggtaggat actacgggta cggctacgct ttcggtact ggggacaggg caccctcgtg 360
accgtgtcga gcgctagcac caagggtcca agtgtgtttc ccctggcccc cagcagcaag 420
tctacttccg gcggaactgc tgccctgggt tgccctggga aggactactt ccccgagccc 480
gtgacagtgt cctggaactc tggggctctg acttccggcg tgcacacctt ccccgccgtg 540
ctgcagagca gcggcctgta cagcctgagc agcgtgggta cagtgcctc cagctctctg 600
ggaacccaga cctatatctg caacgtgaac cacaagcccc gcaacaccaa ggtggacaag 660
agagtggagc ccaagagctg cgacaagacc cacacctgcc cccctgccc agctccagaa 720
ctgctgggag ggccttccgt gttcctgttc cccccaagc ccaaggacac cctgatgatc 780
agcaggaccc ccgaggtgac ctgcgtgggt gtggacgtgt cccacgagga ccagaggtg 840
aagttcaact ggtacgtgga cggcgtggag gtgcacaacg ccaagaccaa gcccagagag 900
gagcagtaca acagcaccta cagggtgggt tccgtgctga ccgtgctgca ccaggactgg 960
ctgaacggca aagaatacaa gtgcaaagtc tccaacaagg ccctgccagc cccaatcgaa 1020
aagacaatca gcaaggccaa gggccagcca cgggagcccc aggtgtacac cctgcccccc 1080
agccgggagg agatgaccaa gaaccagggt tccctgacct gtctggtgaa gggcttctac 1140

cccagcgata tcgccgtgga gtgggagagc aacggccagc ccgagaacaa ctacaagacc 1200
acccccccag tgctggacag cgacggcagc ttcttcctgt acagcaagct gaccgtggac 1260
aagtccaggt ggcagcaggg caacgtgttc agctgcagcg tgatgcacga ggccctgcac 1320
aaccactaca ccagaagtc cctgagcctg agccccggca ag 1362

<210> 131
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 131
Ser Gly Asp Asn Ile Gly Asp Lys Tyr Val Ser
1 5 10

<210> 132
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 132
Asp Asp Asn Lys Arg Pro Ser
1 5

<210> 133
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 133

Ser Ser Thr Ala Ser Lys Ser Phe Asn Val
1 5 10

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 134
Asp Asn Ile Gly Asp Lys Tyr
1 5

<210> 135
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 135
Asp Asp Asn
1

<210> 136
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 136
Thr Ala Ser Lys Ser Phe Asn
1 5

<210> 137

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 137
Ser Tyr Glu Leu Thr Gln Pro Leu Ser Val Ser Val Ala Leu Gly Gln
1 5 10 15

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

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

Asp Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Ala Gln Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Thr Ala Ser Lys Ser Phe Asn
85 90 95

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 138
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 138
agctacgaac tcaccagcc tctgtccgtg tccgtcgcgc tgggacagac tgctcgcac

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acttgctccg gcgacaacat cggggacaaa tacgtgtcgt ggtaccagca gaagccgggc      120
caagcccccg tgctgggtcat ctatgacgat aacaagcggc catcgggcat tccggagaga      180
ttcagcgggtt ccaacagcgg aaacactgcc accctgacca tcagcagggc acaggccggg      240
gatgaggccg actactactg ctcatccacc gcctccaagt cattcaatgt gttcggaggc      300
ggcaccaagc tgaccgtgct c                                          321

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<210> 139
 <211> 213
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<400> 139
 Ser Tyr Glu Leu Thr Gln Pro Leu Ser Val Ser Val Ala Leu Gly Gln
 1 5 10 15

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

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

Asp Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Ala Gln Ala Gly
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Thr Ala Ser Lys Ser Phe Asn
 85 90 95

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro Lys Ala
 100 105 110

Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala
115 120 125

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

Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val
145 150 155 160

Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser
165 170 175

Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser Tyr
180 185 190

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

Pro Thr Glu Cys Ser
210

<210> 140
<211> 639
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 140
agctacgaac tcacccagcc tctgtccgtg tccgtcgcgc tgggacagac tgctcgcac 60
acttgctccg gcgacaacat cggggacaaa tacgtgtcgt ggtaccagca gaagccgggc 120
caagcccccg tgctgggtcat ctatgacgat aacaagcggc catcgggcat tccggagaga 180
ttcagcgggtt ccaacagcgg aaacactgcc accctgacca tcagcagggc acaggccggg 240
gatgaggccg actactactg ctcatccacc gcctccaagt cattcaatgt gttcggaggc 300

ggcaccaagc tgaccgtgct cggtaacct aaggctgccc ccagcgtgac cctgttcccc	360
cccagcagcg aggagctgca ggccaacaag gccaccctgg tgtgcctgat cagcgacttc	420
tacccaggcg ccgtgaccgt ggccctggaag gccgacagca gccccgtgaa ggccggcgtg	480
gagaccacca cccccagcaa gcagagcaac aacaagtacg ccgccagcag ctacctgagc	540
ctgacccccg agcagtggaa gagccacagg tcctacagct gccaggtgac ccacgagggc	600
agcaccgtgg aaaagaccgt ggccccaacc gagtgcagc	639

<210> 141
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 141
 Ser Tyr Tyr Met Asn
 1 5

<210> 142
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 142
 Trp Ile Asn Pro Val Gln Gly Asn Thr Asn Tyr Ala Gln Lys Phe Gln
 1 5 10 15

Gly

<210> 143
 <211> 5
 <212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 143

Asn Tyr Phe Asp Val

1 5

<210> 144

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 144

Gly Tyr Thr Phe Thr Ser Tyr

1 5

<210> 145

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 145

Asn Pro Val Gln Gly Asn

1 5

<210> 146

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic

peptide"

<400> 146

Asn Tyr Phe Asp Val

1 5

<210> 147

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 147

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr

20 25 30

Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met

35 40 45

Gly Trp Ile Asn Pro Val Gln Gly Asn Thr Asn Tyr Ala Gln Lys Phe

50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile 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 Asn Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val

100 105 110

Ser Ser

<210> 148
<211> 342
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 148
caagtccagc tcgtccaatc cgggtgctgaa gtcaagaagc cgggagccag cgtgaaagtg 60
tcctgcaagg cctccgggta caccttcacc tcctactaca tgaactgggt cagacaggcc 120
ccgggccagg gcctggagtg gatgggatgg atcaatccag tgcagggaaa cactaactac 180
gcgcagaagt tccagggtcg cgtgaccatg actcgggaca ctagcatttc cacggcctac 240
atggagctgt caaggctgcg gtcggaagat accgcggtgt attactgcgc ccgcaactac 300
ttcgacgtgt ggggacaggg aacccttggt accgtgtcca gc 342

<210> 149
<211> 444
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 149
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

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

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

Gly Trp Ile Asn Pro Val Gln Gly Asn Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile 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 Asn Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val
100 105 110

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

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

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

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

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

Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro
210 215 220

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

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

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe

260

265

270

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

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

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
 305 310 315 320

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

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

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
 355 360 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
 370 375 380

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

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
 405 410 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
 420 425 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 435 440

<210> 150

<211> 1332

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 150

caagtccagc tcgtccaatc cgggtgctgaa gtcaagaagc cgggagccag cgtgaaagtg	60
tcctgcaagg cctccgggta caccttcacc tcctactaca tgaactgggt cagacaggcc	120
ccgggccagg gcctggagtg gatgggatgg atcaatccag tgcagggaaa cactaactac	180
gcgcagaagt tccagggtcg cgtgaccatg actcgggaca ctagcatttc cacggcctac	240
atggagctgt caaggctgcg gtcggaagat accgcggtgt attactgcg cgcgaactac	300
ttcgacgtgt ggggacaggg aacccttgtg accgtgtcca gcgctagcac caagggccca	360
agtgtgtttc ccctggcccc cagcagcaag tctacttccg gcggaactgc tgccctgggt	420
tgcttggtga aggactactt ccccgagccc gtgacagtgt cctggaactc tggggctctg	480
acttccggcg tgcacacctt ccccgccgtg ctgcagagca gcggcctgta cagcctgagc	540
agcgtggtga cagtgccctc cagctctctg ggaaccacaga cctatatctg caacgtgaac	600
cacaagccca gcaacaccaa ggtggacaag agagtggagc ccaagagctg cgacaagacc	660
cacacctgcc cccctgccc agctccagaa ctgctgggag ggccttccgt gttcctgttc	720
ccccccaagc ccaaggacac cctgatgata agcaggaccc ccgaggtgac ctgctggtg	780
gtggacgtgt cccacgagga cccagaggtg aagttcaact ggtacgtgga cggcgtggag	840
gtgcacaacg ccaagaccaa gccagagag gagcagtaca acagcaccta cagggtggtg	900
tccgtgctga ccgtgctgca ccaggactgg ctgaacggca aagaatacaa gtgcaaagtc	960
tccaacaagg ccctgccagc cccaatcgaa aagacaatca gcaaggccaa gggccagcca	1020
cgggagcccc aggtgtacac cctgcccccc agccgggagg agatgaccaa gaaccagggtg	1080
tccctgacct gtctggtgaa gggcttctac cccagcgata tcgccgtgga gtgggagagc	1140
aacggccagc ccgagaacaa ctacaagacc accccccag tgctggacag cgacggcagc	1200
ttcttcctgt acagcaagct gaccgtggac aagtccaggt ggcagcaggg caacgtgttc	1260

agctgcagcg tgatgcacga ggccctgcac aaccactaca ccagaagtc cctgagcctg 1320

agccccggca ag 1332

<210> 151

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 151

Arg Ala Ser Gln Thr Ile Ser Asn Phe Leu Ala

1 5 10

<210> 152

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 152

Ala Ala Ser Asn Leu Gln Ser

1 5

<210> 153

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 153

Gln Gln Leu Tyr Ala Glu Ser Ile Thr

1 5

<210> 154
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 154
Ser Gln Thr Ile Ser Asn Phe
1 5

<210> 155
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 155
Ala Ala Ser
1

<210> 156
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 156
Leu Tyr Ala Glu Ser Ile
1 5

<210> 157
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 157

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 Arg Ala Ser Gln Thr Ile Ser Asn Phe
20 25 30

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

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

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

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

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 158

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 158

gatatccaga tgacccagag cccatcatcc ctgtcggcct ccgtgggcga cagagtgacc 60

attacttgcc gggcatcaca gacgatctcc aactttctgg cctggtatca gcagaagccg 120

gggaaggcgc ccaagctgct catctacgct gcctccaacc tccaatccgg agtgcctagc 180

cggttcagcg gctcgggatc cgggactgac ttcaccctga ctatctcgag cctgcagccg 240
 gaggacttcg cgggtgtacta ctgtcagcaa ctgtacgccg aatccatcac attcggacag 300
 ggcaccaaag tggagattaa g 321

<210> 159
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 159
 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 Arg Ala Ser Gln Thr Ile Ser Asn Phe
 20 25 30

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

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

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

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

Thr Phe Gly Gln Gly Thr Lys Val 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> 160

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 160

gatatccaga tgacccagag cccatcatcc ctgtcggcct ccgtgggcga cagagtgacc	60
attacttgcc gggcatcaca gacgatctcc aactttctgg cctggatatca gcagaagccg	120
gggaaggcgc ccaagctgct catctacgct gcctccaacc tccaatccgg agtgcctagc	180
cggttcagcg gctcgggatc cgggactgac ttcaccctga ctatctcgag cctgcagccg	240
gaggacttcg cgggtgacta ctgtcagcaa ctgtacgccg aatccatcac attcggacag	300
ggcaccaaag tggagattaa gcgtacgggtg gccgctccca gcgtgttcat cttccccccc	360
agcgacgagc agctgaagag cggcaccgcc agcgtgggtgt gcctgctgaa caacttctac	420

ccccgggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag	480
gagagcgtca ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc	540
ctgagcaagg ccgactacga gaagcataag gtgtacgcct gcgagggtgac ccaccagggc	600
ctgtccagcc ccgtgaccaa gagcttcaac aggggcgagt gc	642

<210> 161
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 161
 Asp Tyr Ala Ile His
 1 5

<210> 162
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 162
 Gly Ile Ile Pro Phe Phe Gly Thr Ala Tyr Tyr Ala Gln Lys Phe Gln
 1 5 10 15

Gly

<210> 163
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 163

Arg Ile Val Ser Asp Ser Val Ala Val Gln Tyr Arg His Ala Phe Asp
1 5 10 15

Pro

<210> 164

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 164

Gly Gly Thr Phe Ser Asp Tyr
1 5

<210> 165

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 165

Ile Pro Phe Phe Gly Thr
1 5

<210> 166

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

peptide"

<400> 166

Arg Ile Val Ser Asp Ser Val Ala Val Gln Tyr Arg His Ala Phe Asp
1 5 10 15

Pro

<210> 167

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 167

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

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

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

Gly Gly Ile Ile Pro Phe Phe Gly Thr Ala Tyr Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Arg Ile Val Ser Asp Ser Val Ala Val Gln Tyr Arg His Ala
100 105 110

Phe Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 168
<211> 378
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 168
caagtgaac tcgtccagtc tgggtccgaa gtcaagaagc caggatcctc ggtgaaagtg 60
tcctgcaagg cctccggggg aaccttttcc gactacgcca tccactgggt ccgccaagca 120
ccgggacagg gcctggaatg gatgggtggc attatcccct tcttcgggac tgcttactat 180
gcgcagaagt tccagggaag agtgacgatt accgccgacg agagcacctc caccgcctac 240
atggaactga gctcactgag gtcggaggat actgcggtgt actactgcgc ccgccggatc 300
gtgtcggatt ccgtggccgt gcagtaccgg catgccttcg acccgtgggg ccagggaacc 360
ctggtcactg tgatcatcc 378

<210> 169
<211> 456
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 169
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

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

Ala Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met

35

40

45

Gly Gly Ile Ile Pro Phe Phe Gly Thr Ala Tyr Tyr Ala Gln Lys Phe
 50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr
 65 70 75 80

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

Ala Arg Arg Ile Val Ser Asp Ser Val Ala Val Gln Tyr Arg His Ala
 100 105 110

Phe Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
 115 120 125

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

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

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

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
 180 185 190

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
 195 200 205

Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val
 210 215 220

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

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
245 250 255

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

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

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
290 295 300

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
305 310 315 320

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
325 330 335

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

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
355 360 365

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
370 375 380

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
385 390 395 400

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

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
420 425 430

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

435

440

445

Ser Leu Ser Leu Ser Pro Gly Lys
450 455

<210> 170

<211> 1368

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 170

caagtgaac tcgtccagtc tgggtccgaa gtcaagaagc caggatcctc ggtgaaagtg	60
tcctgcaagg cctccggggg aaccttttcc gactacgcca tccactgggt ccgccaagca	120
ccgggacagg gcctggaatg gatgggtggc attatcccct tcttcgggac tgcttactat	180
gcgcagaagt tccagggaag agtgacgatt accgccgacg agagcacctc caccgcctac	240
atggaactga gctcactgag gtcggaggat actgcggtgt actactgcgc ccgccggatc	300
gtgtcggatt ccgtggccgt gcagtaccgg catgccttcg acccgtagggg ccagggaacc	360
ctgggtcactg tgtcatccgc tagcaccaag ggcccaagtg tgtttcccct ggcccccagc	420
agcaagtcta cttccggcgg aactgctgcc ctgggttgcc tggatgaagga ctacttcccc	480
gagcccgtga cagtgtcctg gaactctggg gctctgactt ccggcgtgca caccttcccc	540
gccgtgctgc agagcagcgg cctgtacagc ctgagcagcg tggtagacagt gccctccagc	600
tctctgggaa cccagaccta tatctgcaac gtgaaccaca agcccagcaa caccaagggtg	660
gacaagagag tggagcccaa gagctgcgac aagaccacaca cctgcccccc ctgcccagct	720
ccagaactgc tgggagggcc ttccgtgttc ctgttcccc ccaagcccaa ggacaccctg	780
atgatcagca ggacccccga ggtgacctgc gtggtgggtg acgtgtccca cgaggacca	840
gaggtgaagt tcaactggta cgtggacggc gtggagggtgc acaacgcaa gaccaagccc	900
agagaggagc agtacaacag cacctacagg gtggtgtccg tgctgaccgt gctgcaccag	960

gactggctga acggcaaaga atacaagtgc aaagtctcca acaaggccct gccagcccca	1020
atcgaaaaga caatcagcaa ggccaagggc cagccacggg agccccaggt gtacaccctg	1080
ccccccagcc gggaggagat gaccaagaac caggtgtccc tgacctgtct ggtgaagggc	1140
ttctacccca gcgatatcgc cgtggagtgg gagagcaacg gccagcccga gaacaactac	1200
aagaccaccc cccagtgct ggacagcgac ggcagcttct tcctgtacag caagctgacc	1260
gtggacaagt ccaggtggca gcagggcaac gtgttcagct gcagcgtgat gcacgaggcc	1320
ctgcacaacc actacaccca gaagtccctg agcctgagcc ccggcaag	1368

<210> 171
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 171
 Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Tyr Val Tyr
 1 5 10

<210> 172
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 172
 Gly Asn Asn Asn Arg Pro Ser
 1 5

<210> 173
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 173
Asn Ala Trp Asp Thr Lys Ala Tyr Val Trp Val
1 5 10

<210> 174
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 174
Ser Ser Ser Asn Ile Gly Ser Asn Tyr
1 5

<210> 175
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 175
Gly Asn Asn
1

<210> 176
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 176

Trp Asp Thr Lys Ala Tyr Val Trp
1 5

<210> 177

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 177

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
20 25 30

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

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

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
65 70 75 80

Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ala Trp Asp Thr Lys Ala
85 90 95

Tyr Val Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 178

<211> 330

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 178

```
cagtctgtgc tgactcagcc tccgagcgtg tcaggagcac cgggacagag agtgaccatc      60
tcctgttcgg ggtccagctc gaacattggc tccaactacg tgtactggta tcagcagctc      120
cccggtaccg cgcccaagct gttgatctac ggcaacaaca accggcctag cggcgtgccg      180
gataggttct cggggttcaaa atccgggacg tccgcttccc tggccatcac tggcctgcaa      240
gcggaggacg aagccgacta ctactgcaat gcctgggaca ccaaggccta cgtctgggtg      300
ttcggaggag gcactaagct gaccgtgctg      330
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<210> 179

<211> 216

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 179

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

```
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
          20          25          30
```

```
Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
          35          40          45
```

```
Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60
```

```
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
          65          70          75          80
```

```
Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ala Trp Asp Thr Lys Ala
```

85

90

95

Tyr Val Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
 100 105 110

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

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

Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys
 145 150 155 160

Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr
 165 170 175

Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His
 180 185 190

Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys
 195 200 205

Thr Val Ala Pro Thr Glu Cys Ser
 210 215

<210> 180

<211> 648

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 180

cagtctgtgc tgactcagcc tccgagcgtg tcaggagcac cgggacagag agtgaccatc 60

tcctgttcgg ggtccagctc gaacattggc tccaactacg tgtactggta tcagcagctc 120

cccggtaccg cgcccaagct gttgatctac ggcaacaaca accggcctag cggcgtgccg	180
gataggttct cgggttcaaa atccgggacg tccgcttccc tggccatcac tggcctgcaa	240
gcggaggacg aagccgacta ctactgcaat gcctgggaca ccaaggccta cgtctgggtg	300
ttcggaggag gcactaagct gaccgtgctg ggacagccta aggctgcccc cagcgtgacc	360
ctgttcccc ccagcagcga ggagctgcag gccaacaagg ccaccctggt gtgcctgac	420
agcgacttct acccaggcgc cgtgaccgtg gcctggaagg ccgacagcag ccccgtaag	480
gccggcgtgg agaccaccac cccagcaag cagagcaaca acaagtacgc cgccagcagc	540
tacctgagcc tgacccccga gcagtggaag agccacaggt cctacagctg ccaggtgacc	600
cacgagggca gcaccgtgga aaagaccgtg gcccacaaccg agtgcagc	648

<210> 181

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 181

Ser Tyr Asn Met His

1 5

<210> 182

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 182

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

1 5 10 15

Asp

<210> 183
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 183
Asp Asp Tyr Phe Tyr Gly Gly Ser Tyr Ala Met Asp Tyr
1 5 10

<210> 184
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 184
Gly Tyr Thr Phe Pro Ser Tyr
1 5

<210> 185
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 185
Tyr Pro Gly Asn Gly Val
1 5

<210> 186
<211> 13

<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 186
Asp Asp Tyr Phe Tyr Gly Gly Ser Tyr Ala Met Asp Tyr
1 5 10

<210> 187
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 187
Gln Ala Tyr Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
1 5 10 15

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

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

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

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

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

Ala Lys Asp Asp Tyr Phe Tyr Gly Gly Ser Tyr Ala Met Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 188
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 188
caggcttattc tacagcagtc tggggctgag ctggtgaggc ctggggcctc agtgaagatg 60
tcctgcaagg cttctggcta cacatttccc agttacaata tgcactgggt aaagcagaca 120
cctagacagg gcctggaatg gattggagtt atttatccag gaaatggtgt tacttcctac 180
agtcagaagt tcaaggacaa ggccacactg actgtagaca aatcttccag cacagcctac 240
atgcagctca gcagcctgac atctgaggac tctgcggtct atttctgtgc aaaagacgat 300
tatttctacg gtggtagcta tgctatggac tactggggtc aaggaacctc agtcaccgtc 360
tcctca 366

<210> 189
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 189
Arg Ala Ser Gln Ser Ile Ser Asn Asn Leu His
1 5 10

<210> 190
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 190

Tyr Ala Ser Gln Ser Ile Ser

1 5

<210> 191

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 191

Gln Gln Ser His Ser Trp Pro Tyr Thr

1 5

<210> 192

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 192

Ser Gln Ser Ile Ser Asn Asn

1 5

<210> 193

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic

peptide"

<400> 193

Tyr Ala Ser

1

<210> 194

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 194

Ser His Ser Trp Pro Tyr

1

5

<210> 195

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 195

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

1

5

10

15

Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn

20

25

30

Leu His Trp Tyr Gln Gln Ile Ser His Glu Ser Pro Arg Leu Leu Ile

35

40

45

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

50

55

60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Met Glu Thr

65	70	75	80
Glu Asp Phe Gly Met Phe Phe Cys Gln Gln Ser His Ser Trp Pro Tyr			
	85	90	95

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

<210> 196
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 196	
gatattgtgc taactcagtc tccagccacc ctgtctgtga ctccaggaga tagcgtcagt	60
ctttcctgca gggccagcca aagtattagc aacaacctac actggtatca gcaaatatca	120
catgagtctc caaggcttct catcaagtat gcctcccagt ccatctctgg catccccctcc	180
aggttcagtg gcagtggatc agggacagat ttcactctca gtatcaacag tatggagact	240
gaagattttg gaatgttttt ctgtcaacag agtcacagct ggccttacac gttcggaggg	300
gggaccaagc tggaaataaa a	321

<210> 197
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 197
Arg Tyr Trp Met His
1 5

<210> 198
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 198
Glu Ile Asn Pro Ser Asn Gly Gly Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Ser

<210> 199
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 199
Gly Ser Asn Tyr Gly Gly Phe Val Tyr
1 5

<210> 200
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 200
Gly Tyr Thr Phe Thr Arg Tyr
1 5

<210> 201

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 201
Asn Pro Ser Asn Gly Gly
1 5

<210> 202
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 202
Gly Ser Asn Tyr Gly Gly Phe Val Tyr
1 5

<210> 203
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 203
Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Ala Val Lys Pro Gly Ala
1 5 10 15

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

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

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

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

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

Thr Met Gly Ser Asn Tyr Gly Gly Phe Val Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ala
115

<210> 204
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 204
cagggtccaac tgcagcagcc tggggctgag gctgtgaagc ctggggcttc agtgaagttg 60
tcctgcaagg cttctggcta caccttcacc aggtattgga tgcactgggt gaagcagagg 120
cctggacaag gccttgagtg gattggagag attaatccta gcaatggtgg tactaactac 180
aatgagaagt tcaagagcaa ggccacactg actgtagaca aatcctccag cacagcctac 240
atgcaactca gcagcctgac atctgaggat tttgcggtct attactgtac aatggggagt 300
aactacgggg gttttgttta ctggggccaa gggactctgg tcactgtctc tgca 354

<210> 205
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 205

Arg Ala Ser Glu Ser Leu Asp Asn Tyr Gly Ile Ser Phe Met Asn
1 5 10 15

<210> 206

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 206

Ala Ala Ser Asn Gln Gly Ser
1 5

<210> 207

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 207

Gln Gln Ser Lys Glu Val Pro Arg Thr
1 5

<210> 208

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 208

Ser Glu Ser Leu Asp Asn Tyr Gly Ile Ser Phe
1 5 10

<210> 209

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 209

Ala Ala Ser
1

<210> 210

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 210

Ser Lys Glu Val Pro Arg
1 5

<210> 211

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 211

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

Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Leu Asp Asn Tyr
20 25 30

Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

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

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

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

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

<210> 212

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 212

gacattgtgc tgaccaatc tccagcttct ttggctgtgt ctctagggca gagggccacc	60
atctcctgca gagccagcga aagtcttgat aattatggca ttagttttat gaattgggtc	120
caacagaaac caggacagcc acccaaattc ctcatctatg ctgcatccaa ccaaggaagc	180
gggggtccctg ccaggtttag tggcagtggg tctgggacag acttcagcct caacatccat	240
cctttggagg aggatgatac tgcaatgtat ttctgtcagc aaagtaagga ggttcctcgg	300
acgttcggtg gaggcaccaa actggaaatc aaa	333

<210> 213

<211> 429

<212> PRT

<213> Homo sapiens

<400> 213

Met Cys Pro Gly Ala Leu Trp Val Ala Leu Pro Leu Leu Ser Leu Leu
1 5 10 15

Ala Gly Ser Leu Gln Gly Lys Pro Leu Gln Ser Trp Gly Arg Gly Ser
20 25 30

Ala Gly Gly Asn Ala His Ser Pro Leu Gly Val Pro Gly Gly Gly Leu
35 40 45

Pro Glu His Thr Phe Asn Leu Lys Met Phe Leu Glu Asn Val Lys Val
50 55 60

Asp Phe Leu Arg Ser Leu Asn Leu Ser Gly Val Pro Ser Gln Asp Lys
65 70 75 80

Thr Arg Val Glu Pro Pro Gln Tyr Met Ile Asp Leu Tyr Asn Arg Tyr
85 90 95

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

Ser Met Glu Asp Ala Ile Ser Ile Thr Ala Thr Glu Asp Phe Pro Phe
115 120 125

Gln Lys His Ile Leu Leu Phe Asn Ile Ser Ile Pro Arg His Glu Gln
130 135 140

Ile Thr Arg Ala Glu Leu Arg Leu Tyr Val Ser Cys Gln Asn His Val
145 150 155 160

Asp Pro Ser His Asp Leu Lys Gly Ser Val Val Ile Tyr Asp Val Leu
165 170 175

Asp Gly Thr Asp Ala Trp Asp Ser Ala Thr Glu Thr Lys Thr Phe Leu

180

185

190

Val Ser Gln Asp Ile Gln Asp Glu Gly Trp Glu Thr Leu Glu Val Ser
 195 200 205

Ser Ala Val Lys Arg Trp Val Arg Ser Asp Ser Thr Lys Ser Lys Asn
 210 215 220

Lys Leu Glu Val Thr Val Glu Ser His Arg Lys Gly Cys Asp Thr Leu
 225 230 235 240

Asp Ile Ser Val Pro Pro Gly Ser Arg Asn Leu Pro Phe Phe Val Val
 245 250 255

Phe Ser Asn Asp His Ser Ser Gly Thr Lys Glu Thr Arg Leu Glu Leu
 260 265 270

Arg Glu Met Ile Ser His Glu Gln Glu Ser Val Leu Lys Lys Leu Ser
 275 280 285

Lys Asp Gly Ser Thr Glu Ala Gly Glu Ser Ser His Glu Glu Asp Thr
 290 295 300

Asp Gly His Val Ala Ala Gly Ser Thr Leu Ala Arg Arg Lys Arg Ser
 305 310 315 320

Ala Gly Ala Gly Ser His Cys Gln Lys Thr Ser Leu Arg Val Asn Phe
 325 330 335

Glu Asp Ile Gly Trp Asp Ser Trp Ile Ile Ala Pro Lys Glu Tyr Glu
 340 345 350

Ala Tyr Glu Cys Lys Gly Gly Cys Phe Phe Pro Leu Ala Asp Asp Val
 355 360 365

Thr Pro Thr Lys His Ala Ile Val Gln Thr Leu Val His Leu Lys Phe
 370 375 380

Pro Thr Lys Val Gly Lys Ala Cys Cys Val Pro Thr Lys Leu Ser Pro
 385 390 395 400

Ile Ser Val Leu Tyr Lys Asp Asp Met Gly Val Pro Thr Leu Lys Tyr
 405 410 415

His Tyr Glu Gly Met Ser Val Ala Glu Cys Gly Cys Arg
 420 425

<210> 214
 <211> 1942
 <212> DNA
 <213> Homo sapiens

<400> 214
 cgggtccagcc cggcagcggg tgagagtagg tgctggccaa gacggttcct tcagagcaaa 60
 cagcagggag atgccggccc gtccttccc agctcctccc cgtgcccgt aacacagcac 120
 ggccgcctgc agtctcctct ctgggtgatt gcgcgggcct aagatgtgtc ctggggcact 180
 gtgggtggcc ctgcccctgc tgtccctgct ggctggctcc ctacagggga agccactgca 240
 gagctgggga cgagggtctg ctgggggaaa cgccacagc ccactggggg tgcctggagg 300
 tgggctgcct gagcacacct tcaacctgaa gatgtttctg gagaacgtga aggtggattt 360
 cctgcgcagc cttaacctga gtgggggtccc ttcgcaggac aaaaccaggg tggagccgcc 420
 gcagtacatg attgacctgt acaacaggta cacgtccgat aagtcgacta cgccagcgtc 480
 caacattgtg cggagcttca gcatggaaga tgccatctcc ataactgcca cagaggactt 540
 ccccttccag aagcacatct tgctcttcaa catctccatt cctaggcatg agcagatcac 600
 cagagctgag ctccgactct atgtctcctg tcaaaatcac gtggaccct ctcacgacct 660
 gaaaggaagc gtggtcattt atgatgttct ggatggaaca gatgcctggg atagtgtctac 720
 agagacaaaa accttcctgg tgtcccagga cattcaggat gagggtggg agaccttgga 780
 agtgtccagc gccgtgaagc gctgggtccg gtccgactcc accaagagca aaaataagct 840
 ggaagtgact gtggagagcc acaggaaggg ctgcgacacg ctggacatca gtgtcccccc 900
 aggttccaga aacctgccct tctttgttgt cttctccaat gaccacagca gtggaaccaa 960

ggagaccagg ctggagctga gggagatgat cagccatgaa caagagagcg tgctcaagaa	1020
gctgtccaag gacggctcca cagaggcagg tgagagcagt cacgaggagg acacggatgg	1080
ccacgtggct gcggggtcga ctttagccag gcggaaaagg agcgccgggg ctggcagcca	1140
ctgtcaaaaag acctccctgc gggtaaactt cgaggacatc ggctgggaca gctggatcat	1200
tgcacccaag gagtatgaag cctacgagt taagggcggc tgcttcttcc ccttggctga	1260
cgatgtgacg ccgacgaaac acgctatcgt gcagaccctg gtgcatctca agttccccac	1320
aaaggtgggc aaggcctgct gtgtgcccac caaactgagc cccatctccg tcctctacaa	1380
ggatgacatg gaggtgcccc ccctcaagta ccattacgag ggcatgagcg tggcagagt	1440
tgggtgcagg tagtatctgc ctgcggggct ggggaggcag gccaaagggg ctccacatga	1500
gaggtcctgc atgcccctgg gcacaacaag gactgattca atctgcatgc cagcctggag	1560
gaggaaaggg agcctgctct ccctccccac accccacca aagcatacac cgctgagctc	1620
aactgccagg gaaggctaag gaaatgggga tttgagcaca acaggaaagc ctgggagggt	1680
tggtgggatg caaggagggtg atgaaaagga gacaggggga aaaataatcc atagtcagca	1740
gaaaacaaca gcagtgagcc agaggagcac aggcgggcag gtcactgcag agactgatgg	1800
aagttagaga ggtggaggag gccagctcac tccaaaaccc ttggggagta gagggaagga	1860
gcaggccgcg tgtcacaccc atcattgtat gttatttccc acaaccagcagg tggaggggca	1920
tggcttccaa tttagagacc cg	1942

<210> 215
 <211> 110
 <212> PRT
 <213> Homo sapiens

<400> 215															
Ser	Ala	Gly	Ala	Gly	Ser	His	Cys	Gln	Lys	Thr	Ser	Leu	Arg	Val	Asn
1				5					10					15	

Phe	Glu	Asp	Ile	Gly	Trp	Asp	Ser	Trp	Ile	Ile	Ala	Pro	Lys	Glu	Tyr
			20					25					30		

Glu Ala Tyr Glu Cys Lys Gly Gly Cys Phe Phe Pro Leu Ala Asp Asp
35 40 45

Val Thr Pro Thr Lys His Ala Ile Val Gln Thr Leu Val His Leu Lys
50 55 60

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

Pro Ile Ser Val Leu Tyr Lys Asp Asp Met Gly Val Pro Thr Leu Lys
85 90 95

Tyr His Tyr Glu Gly Met Ser Val Ala Glu Cys Gly Cys Arg
100 105 110

<210> 216
<211> 414
<212> PRT
<213> Homo sapiens

<400> 216
Met Gly Ser Leu Val Leu Thr Leu Cys Ala Leu Phe Cys Leu Ala Ala
1 5 10 15

Tyr Leu Val Ser Gly Ser Pro Ile Met Asn Leu Glu Gln Ser Pro Leu
20 25 30

Glu Glu Asp Met Ser Leu Phe Gly Asp Val Phe Ser Glu Gln Asp Gly
35 40 45

Val Asp Phe Asn Thr Leu Leu Gln Ser Met Lys Asp Glu Phe Leu Lys
50 55 60

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

Pro Pro Glu Tyr Met Leu Glu Leu Tyr Asn Lys Phe Ala Thr Asp Arg
85 90 95

Thr Ser Met Pro Ser Ala Asn Ile Ile Arg Ser Phe Lys Asn Glu Asp
100 105 110

Leu Phe Ser Gln Pro Val Ser Phe Asn Val Ser Ile Pro His His Glu
115 120 125

Glu Val Ile Met Ala Glu Leu Arg Leu Tyr Thr Leu Val Gln Arg Asp
130 135 140

Arg Met Ile Tyr Asp Gly Val Asp Arg Lys Ile Thr Thr Phe Glu Val
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Leu Glu Ser Lys Gly Asp Asn Glu Gly Glu Arg Asn Met Leu Val Leu
165 170 175

Val Ser Gly Glu Ile Tyr Gly Thr Asn Ser Glu Trp Glu Thr Phe Asp
180 185 190

Val Thr Asp Ala Ile Arg Arg Trp Gln Lys Ser Gly Ser Ser Thr His
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Gln Leu Glu Val His Ile Glu Ser Lys His Asp Glu Ala Glu Asp Ala
210 215 220

Ser Ser Gly Arg Leu Glu Ile Asp Thr Ser Ala Gln Asn Lys His Asn
225 230 235 240

Pro Leu Leu Ile Val Phe Ser Asp Asp Gln Ser Ser Asp Lys Glu Arg
245 250 255

Lys Glu Glu Leu Asn Glu Met Ile Ser His Glu Gln Leu Pro Glu Leu
260 265 270

Asp Asn Leu Gly Leu Asp Ser Phe Ser Ser Gly Pro Gly Glu Glu Ala
275 280 285

Leu Leu Gln Met Arg Ser Asn Ile Ile Tyr Asp Ser Thr Ala Arg Ile
290 295 300

Arg Arg Asn Ala Lys Gly Asn Tyr Cys Lys Arg Thr Pro Leu Tyr Ile
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Asp Phe Lys Glu Ile Gly Trp Asp Ser Trp Ile Ile Ala Pro Pro Gly
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Tyr Glu Ala Tyr Glu Cys Arg Gly Val Cys Asn Tyr Pro Leu Ala Glu
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His Leu Thr Pro Thr Lys His Ala Ile Ile Gln Ala Leu Val His Leu
 355 360 365

Lys Asn Ser Gln Lys Ala Ser Lys Ala Cys Cys Val Pro Thr Lys Leu
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