

SEQUENCE LISTING

<110> AMGEN INC.

<120> CHIMERIC RECEPTORS TO DLL3 AND METHODS OF USE THEREOF

<130> A-2249-WO-PCT

<140>

<141>

<150> 62/655,725

<151> 2018-04-10

<160> 70

<170> PatentIn version 3.5

<210> 1

<211> 294

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 1

cttgataatg aaaagtcaaa cggaacaatc attcacgtga agggcaagca cctctgtccg 60

tcacccttgt tccctgggtcc atccaagcca ttctgggtgt tggtcgtagt ggggtggagtc 120

ctcgcttggt actctctgct cgtcaccgtg gcttttataa tcttctgggt tagatccaaa 180

agaagccgcc tgctccatag cgattacatg aatatgactc cacgccgccc tggccccaca 240

aggaaacact accagcctta cgcaccacct agagatttcg ctgcctatcg gagc 294

<210> 2

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 2

Leu Asp Asn Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys

1

5

10

15

His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp
20 25 30

Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val
35 40 45

Thr Val Ala Phe Ile Ile Phe Trp Val Arg Ser Lys Arg Ser Arg Leu
50 55 60

Leu His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr
65 70 75 80

Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr
85 90 95

Arg Ser

<210> 3
<211> 90
<212> DNA
<213> Artificial Sequence

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

<400> 3
cttgataatg aaaagtcaaa cggaacaatc attcacgtga agggcaagca cctctgtccg 60
tcacccttgt tccctgggtcc atccaagcca 90

<210> 4
<211> 30
<212> PRT
<213> Artificial Sequence

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

<400> 4
Leu Asp Asn Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys
1 5 10 15

His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro
20 25 30

<210> 5
<211> 81
<212> DNA
<213> Artificial Sequence

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

<400> 5
ttctgggtgt tggtcgtagt ggggtggagtc ctcgcttggt actctctgct cgtcaccgtg 60
gcttttataa tcttctgggt t 81

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

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

<400> 6
Phe Trp Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu
1 5 10 15

Leu Val Thr Val Ala Phe Ile Ile Phe Trp Val
20 25

<210> 7
<211> 123
<212> DNA
<213> Artificial Sequence

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

<400> 7
agatccaaaa gaagccgcct gtcctatagc gattacatga atatgactcc acgccgcctt 60

ggccccacaa ggaaacacta ccagccttac gcaccaccta gagatttcgc tgcctatcgg 120
agc 123

<210> 8
<211> 41
<212> PRT
<213> Artificial Sequence

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

<400> 8
Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr
1 5 10 15

Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
20 25 30

Pro Arg Asp Phe Ala Ala Tyr Arg Ser
35 40

<210> 9
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 9
agggtgaagt tttccagatc tgcagatgca ccagcgtatc agcagggcca gaaccaactg 60
tataacgagc tcaacctggg acgcagggaa gagtatgacg ttttggacaa gcgcagagga 120
cgggaccctg agatgggtgg caaaccaaga cgaaaaaacc cccaggaggg tctctataat 180
gagctgcaga aggataagat ggctgaagcc tattctgaaa taggcatgaa aggagagcgg 240
agaaggggaa aagggcacga cggtttgtac cagggactca gcactgctac gaaggatact 300
tatgacgctc tccacatgca agccctgccca cctagg 336

<210> 10
<211> 112

<212> PRT
<213> Artificial Sequence

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

<400> 10
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
1 5 10 15

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
20 25 30

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
35 40 45

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
50 55 60

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
65 70 75 80

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
85 90 95

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
100 105 110

<210> 11
<211> 117
<212> DNA
<213> Artificial Sequence

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

<400> 11
attgaggtga tgtatccacc gccttacctg gataacgaaa agagtaacgg taccatcatt 60
cacgtgaaag gtaaacacct gtgtccttct cccctcttcc ccgggccatc aaagccc 117

<210> 12

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

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

<400> 12
Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn
1 5 10 15

Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu
20 25 30

Phe Pro Gly Pro Ser Lys Pro
35

<210> 13
<211> 288
<212> DNA
<213> Artificial Sequence

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

<400> 13
gctgcagcat tgagcaactc aataatgtat tttagtcact ttgtaccagt gttcttgccg 60
gctaagccta ctaccacacc cgctccacgg ccacctaccc cagctcctac catcgcttca 120
cagcctctgt ccctgcgccc agaggcttgc cgaccggccg cagggggcgc tgttcataacc 180
agaggactgg atttcgcctg cgatatctat atctgggcac ccctggccgg aacctgcggc 240
gtactcctgc tgtccctggt catcacgctc tattgtaatc acaggaac 288

<210> 14
<211> 96
<212> PRT
<213> Artificial Sequence

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

<400> 14
Ala Ala Ala Leu Ser Asn Ser Ile Met Tyr Phe Ser His Phe Val Pro
1 5 10 15

Val Phe Leu Pro Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro
20 25 30

Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu
35 40 45

Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp
50 55 60

Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly
65 70 75 80

Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg Asn
85 90 95

<210> 15
<211> 141
<212> DNA
<213> Artificial Sequence

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

<400> 15
cgcttttccg tcgttaagcg ggggagaaaa aagctgctgt acattttcaa acagccgttt 60
atgaggccgg tccaaacgac tcaggaagag gacggctgct cctgccgctt tcctgaggag 120
gaggagggcg ggtgcgaact g 141

<210> 16
<211> 47
<212> PRT
<213> Artificial Sequence

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

<400> 16

Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
 1 5 10 15

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
 20 25 30

Cys Ser Cys Arg Phe Pro Glu Glu Glu Gly Gly Cys Glu Leu
 35 40 45

<210> 17
 <211> 1449
 <212> DNA
 <213> Artificial Sequence

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

<400> 17
 atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60
 ccgcaggtgc aactgcagga aagcgggccc ggtctggtga agccctcaga aacgctctcc 120
 ctcacctgta cagtctctgg cgattcaatc tcttcatatt actggacgtg gatcaggcag 180
 cctcccggca agggactgga gtggatcgga tatacttact atagtggcac cactaactat 240
 aatccttccc tgaaaagccg ggtgacaatc tctgttgaca cctccaagag ccagttcagc 300
 ctgaaactct ccagtgtgac agccgccgat acagccgtgt attactgtgc ctctatcgct 360
 gtgcgcgggt tcttttttga ttattggggc caggggacac tggtgaccgt tagcagcggg 420
 ggaggagggt ccggtggcgg cggcagcggg ggcgggggtt cagaaattgt actgaccag 480
 tccccggca cgctctctct ctcccagg gaaagggcaa cccttagctg ccgggcgagc 540
 cagagcgtga gttcctccta cctcgcgtgg tatcagcaga agcctggaca ggctcccaga 600
 ctgctgattt acggggcttc tacgagagcc accggcatac ctgatagggt ctctggctcc 660
 gggctctggga ccgactttac tcttacaatc agcagacttg agcctgaaga cttcgctgtg 720
 tattattgtc aacaatacgg aacgtcccc cttacctttg gtggcgggac aaaagtggaa 780
 attaagaggg ccgctgccct tgataatgaa aagtcaaacg gaacaatcat tcacgtgaag 840
 ggcaagcacc tctgtccgtc acccttggtc cctggtccat ccaagccatt ctgggtgttg 900
 gtcgtagtgg gtggagtcct cgcttggtac tctctgctcg tcaccgtggc ttttataatc 960

ttctgggttc	gcttttccgt	cgттаagcgg	gggagaaaaa	agctgctgta	cattttcaaa	1020
cagccgttta	tgaggccggt	ccaaacgact	caggaagaag	acggctgctc	ctgccgcttt	1080
cctgaggagg	aggagggcgg	gtgcgaactg	agggtgaagt	tttccagatc	tgcagatgca	1140
ccagcgtatc	agcagggccca	gaaccaactg	tataacgagc	tcaacctggg	acgcaggggaa	1200
gagtatgacg	ttttggacaa	gcgcagagga	cgggaccctg	agatgggttg	caaaccaaga	1260
cgaaaaaacc	cccaggaggg	tctctataat	gagctgcaga	aggataagat	ggctgaagcc	1320
tattctgaaa	taggcatgaa	aggagagcgg	agaaggggaa	aagggcacga	cggtttgtac	1380
cagggactca	gcactgctac	gaaggatact	tatgacgctc	tccacatgca	agccctgcca	1440
cctaggtaa						1449

<210> 18

<211> 482

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<221> source

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

<400> 18

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

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

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

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

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

Ser Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Ser Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr
115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln
145 150 155 160

Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
165 170 175

Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln
180 185 190

Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Thr
195 200 205

Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
210 215 220

Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
225 230 235 240

Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu Thr Phe Gly Gly Gly
245 250 255

Thr Lys Val Glu Ile Lys Arg Ala Ala Ala Leu Asp Asn Glu Lys Ser
260 265 270

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro
275 280 285

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
290 295 300

Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile

305		310		315		320
Phe Trp Val Arg	Phe Ser Val Val	Lys Arg Gly Arg	Lys Lys Leu Leu			
	325	330	335			
Tyr Ile Phe Lys	Gln Pro Phe Met	Arg Pro Val Gln	Thr Thr Gln Glu			
	340	345	350			
Glu Asp Gly Cys	Ser Cys Arg Phe	Pro Glu Glu Glu	Gly Gly Cys			
	355	360	365			
Glu Leu Arg Val	Lys Phe Ser Arg	Ser Ala Asp Ala	Pro Ala Tyr Gln			
	370	375	380			
Gln Gly Gln Asn	Gln Leu Tyr Asn	Glu Leu Asn Leu	Gly Arg Arg Glu			
385	390	395	400			
Glu Tyr Asp Val	Leu Asp Lys Arg	Arg Gly Arg Asp	Pro Glu Met Gly			
	405	410	415			
Gly Lys Pro Arg	Arg Lys Asn Pro	Gln Glu Gly Leu	Tyr Asn Glu Leu			
	420	425	430			
Gln Lys Asp Lys	Met Ala Glu Ala	Tyr Ser Glu Ile	Gly Met Lys Gly			
	435	440	445			
Glu Arg Arg Arg	Gly Lys Gly His	Asp Gly Leu Tyr	Gln Gly Leu Ser			
	450	455	460			
Thr Ala Thr Lys	Asp Thr Tyr Asp	Ala Leu His Met	Gln Ala Leu Pro			
465	470	475	480			

Pro Arg

<210> 19
 <211> 1431
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source

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

<400> 19

atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc	60
ccgcaggtgc aactgcagga aagcgggccc ggtctggtga agccctcaga aacgctctcc	120
ctcacctgta cagtctctgg cgattcaatc tcttcatatt actggacgtg gatcaggcag	180
cctcccggca agggactgga gtggatcgga tatatctact atagtggcac cactaactat	240
aatccttccc tgaaaagccg ggtgacaatc tctgttgaca cctccaagag ccagttcagc	300
ctgaaactct ccagtgtgac agccgccgat acagccgtgt attactgtgc ctctatcgct	360
gtgcgcgggt tcttttttga ttattggggc caggggacac tggtagaccgt tagcagcggg	420
ggaggagggt ccggtggcgg cggcagcggg ggcgggggtt cagaaattgt actgaccag	480
tccccggca cgctctctct ctcccaggg gaaagggcaa cccttagctg ccgggcgagc	540
cagagcgtga gttcctccta cctcgcgtgg tatcagcaga agcctggaca ggctcccaga	600
ctgctgattt acggggcttc tacgagagcc accggcatac ctgatagggt ctctggctcc	660
gggtctggga ccgactttac tcttacaatc agcagacttg agcctgaaga cttcgctgtg	720
tattattgtc aacaatacgg aacgtcccc cttacctttg gtggcgggac aaaagtggaa	780
attaagaggg ccgctgccct tgataatgaa aagtcaaacg gaacaatcat tcacgtgaag	840
ggcaagcacc tctgtccgtc acccttgttc cctgggtccat ccaagccatt ctgggtgttg	900
gtcgtagtgg gtggagtcct cgcttgttac tctctgctcg tcaccgtggc ttttataatc	960
ttctgggtta gatccaaaag aagccgcctg ctccatagcg attacatgaa tatgactcca	1020
cgccgccctg gccccacaag gaaacactac cagccttacg caccacctag agatttcgct	1080
gcctatcgga gccgagtga attttctaga tcagctgatg ctccgccta tcagcaggga	1140
cagaatcaac ttacaatga gctgaacctg ggtcgcagag aagagtacga cgttttggac	1200
aaacgccggg gccgagatcc tgagatgggg gggaagccga gaaggaagaa tcctcaagaa	1260
ggcctgtaca acgagcttca aaaagacaaa atggctgagg cgtactctga gatcggcatg	1320
aagggcgagc ggagacgagg caagggtcac gatggcttgt atcagggcct gagtacagcc	1380
acaaaggaca cctatgacgc cctccacatg caggcactgc cccacgcta g	1431

<210> 20

<211> 476
<212> PRT
<213> Artificial Sequence

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

<400> 20
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

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

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

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

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

Ser Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Ser Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr
115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln
145 150 155 160

Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
165 170 175

Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln
180 185 190

Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Thr
195 200 205

Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
210 215 220

Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
225 230 235 240

Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu Thr Phe Gly Gly Gly
245 250 255

Thr Lys Val Glu Ile Lys Arg Ala Ala Ala Leu Asp Asn Glu Lys Ser
260 265 270

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro
275 280 285

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
290 295 300

Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile
305 310 315 320

Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met
325 330 335

Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro
340 345 350

Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg Val Lys Phe
355 360 365

Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
370 375 380

Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
385 390 395 400

Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys
405 410 415

Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
420 425 430

Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
435 440 445

Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
450 455 460

Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
465 470 475

<210> 21

<211> 1458

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 21

atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc	60
ccgcaggtcc agctggtgca gtctggggca gaggtgaaac ggccgggtgc aagcgtgaag	120
gtgtcctgca aagcctctgg ctataccttt actgggtact atatgcactg ggttcggcag	180
gcgccaggac agggctcttga gtggatgggt tggattgata caaactctgg cgatacaaat	240
tacgcacaga aattccaggg ccgcgtgacg atgactcgag acacttccat atccaccgcc	300
tatatggaag tgaatagact ccggtctgac gacactgctg tctattactg tgcaagggat	360
cccaaccggc ggagttggta ttacggaatg gatgtctggg ccagggtac taccgtcacg	420
gtgtcttctg gcggcggggg ctcaggagga ggaggcagcg gtggaggagg cagcgatatt	480
cagatgacac aaagcccttc tagtctctcc gcaagcgttg gcgaccgcgt gaccattacg	540
tgtcaggctt cacaagatat tcgaaactac ctgaactggt atcagcagaa gcccgcaaaa	600
gcacctaagc tgctgattta tgacgctagc aaccttgaga ctggcgtccc ctccagattt	660

tccggcagcg gctcaggcac cgactttact tttaccatct ccacactcca gccagaagat	720
attgcaacgt attactgcca acattatgat aacctgcctt tgaccttcgg aggtggcacc	780
aaggtagaga tcagaagagc cgctgccctt gataatgaaa agtcaaacgg aacaatcatt	840
cacgtgaagg gcaagcacct ctgtccgtca cccttgttcc ctggtccatc caagccattc	900
tgggtgttgg tcgtagtggg tggagtcctc gcttgttact ctctgctcgt caccgtggct	960
tttataatct tctgggttcg cttttccgtc gttaagcggg ggagaaaaaa gctgctgtac	1020
atittcaaac agccgtttat gaggccggtc caaacgactc aggaagaaga cggctgctcc	1080
tgccgctttc ctgaggagga ggaggcgagg tgcgaactga gggtgaagtt ttccagatct	1140
gcagatgcac cagcgtatca gcagggccag aaccaactgt ataacgagct caacctggga	1200
cgcagggaag agtatgacgt tttggacaag cgcagaggac gggaccctga gatgggtggc	1260
aaaccaagac gaaaaaaccc ccaggagggt ctctataatg agctgcagaa ggataagatg	1320
gctgaagcct attctgaaat aggcataaaa ggagagcgga gaaggggaaa agggcacgac	1380
ggtttgtacc agggactcag cactgctacg aaggatactt atgacgctct ccacatgcaa	1440
gccctgccac ctaggtaa	1458

<210> 22
 <211> 485
 <212> PRT
 <213> Artificial Sequence

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

<400> 22
 Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
 1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
 20 25 30

Lys Arg Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln

50

55

60

Gly Leu Glu Trp Met Gly Trp Ile Asp Pro Asn Ser Gly Asp Thr Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser
85 90 95

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

Ala Val Tyr Tyr Cys Ala Arg Asp Pro Asn Arg Arg Ser Trp Tyr Tyr
115 120 125

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg
165 170 175

Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn
180 185 190

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp
195 200 205

Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
210 215 220

Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Leu Gln Pro Glu Asp
225 230 235 240

Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Leu Thr Phe
245 250 255

Gly Gly Gly Thr Lys Val Glu Ile Arg Arg Ala Ala Ala Leu Asp Asn
260 265 270

Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys
275 280 285

Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val
290 295 300

Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala
305 310 315 320

Phe Ile Ile Phe Trp Val Arg Phe Ser Val Val Lys Arg Gly Arg Lys
325 330 335

Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr
340 345 350

Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu
355 360 365

Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro
370 375 380

Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly
385 390 395 400

Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro
405 410 415

Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr
420 425 430

Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly
435 440 445

Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln
450 455 460

Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln
465 470 475 480

Ala Leu Pro Pro Arg

<210> 23
 <211> 1440
 <212> DNA
 <213> Artificial Sequence

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

<400> 23
 atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60
 ccgcaggtcc agctggtgca gtctggggca gaggtgaaac ggccgggtgc aagcgtgaag 120
 gtgtcctgca aagcctctgg ctataccttt actgggtact atatgcactg ggttcggcag 180
 gcgccaggac agggctctga gtggatgggt tggattgata caaactctgg cgatacaaat 240
 tacgcacaga aattccaggg ccgcgtgacg atgactcgag acacttccat atccaccgcc 300
 tatatggaag tgaatagact ccggtctgac gacactgctg tctattactg tgcaagggat 360
 cccaaccggc ggagttggta ttacggaatg gatgtctggg ccaggggtac taccgtcacg 420
 gtgtcttctg gcggcggggg ctcaggagga ggaggcagcg gtggaggagg cagcgatatt 480
 cagatgacac aaagcccttc tagtctctcc gcaagcgttg gcgaccgcgt gaccattacg 540
 tgtcaggctt cacaagatat tcgaaactac ctgaactggt atcagcagaa gcccggcaaa 600
 gcacctaagc tgctgattta tgacgctagc aaccttgaga ctggcgtccc ctccagattt 660
 tccggcagcg gctcaggcac cgactttact tttaccatct ccacactcca gccagaagat 720
 attgcaacgt attactgcca acattatgat aacctgcctt tgaccttcgg aggtggcacc 780
 aaggtagaga tcagaagagc cgctgccctt gataatgaaa agtcaaacgg aacaatcatt 840
 cacgtgaagg gcaagcacct ctgtccgtca cccttgttcc ctggtccatc caagccattc 900
 tgggtgttgg tcgtagtggg tggagtcctc gcttggttact ctctgctcgt caccgtggct 960
 ttataaatct tctggggttag atccaaaaga agccgcctgc tccatagcga ttacatgaat 1020
 atgactccac gccgccctgg cccacaagg aaacactacc agccttacgc accacctaga 1080
 gatttcgctg cctatcggag ccgagtgaat ttttctagat cagctgatgc tccgcctat 1140
 cagcagggac agaatcaact ttacaatgag ctgaacctgg gtcgcagaga agagtacgac 1200

gttttggaca aacgccgggg ccgagatcct gagatggggg ggaagccgag aaggaagaat	1260
cctcaagaag gcctgtacaa cgagcttcaa aaagacaaaa tggctgaggc gtactctgag	1320
atcggcatga agggcgagcg gagacgaggc aagggtcacg atggcttgta tcagggcctg	1380
agtacagcca caaaggacac ctatgacgcc ctccacatgc aggcactgcc cccacgctag	1440

<210> 24
 <211> 479
 <212> PRT
 <213> Artificial Sequence

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

<400> 24
 Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
 1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
 20 25 30

Lys Arg Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asp Pro Asn Ser Gly Asp Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser
 85 90 95

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

Ala Val Tyr Tyr Cys Ala Arg Asp Pro Asn Arg Arg Ser Trp Tyr Tyr
 115 120 125

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg
165 170 175

Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn
180 185 190

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp
195 200 205

Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
210 215 220

Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Leu Gln Pro Glu Asp
225 230 235 240

Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Leu Thr Phe
245 250 255

Gly Gly Gly Thr Lys Val Glu Ile Arg Arg Ala Ala Ala Leu Asp Asn
260 265 270

Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys
275 280 285

Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val
290 295 300

Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala
305 310 315 320

Phe Ile Ile Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser
325 330 335

Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His
340 345 350

Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg
355 360 365

Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
370 375 380

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
385 390 395 400

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
405 410 415

Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
420 425 430

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
435 440 445

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
450 455 460

Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
465 470 475

<210> 25

<211> 1437

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 25

atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaagtgc agttggtgca gtctggagct gaagtgaaga aaccaggcgc tagcgtcaaa 120

gtgagctgta aggcctcagg ttacacgttt actgggtact atatgcattg ggtcaggcaa 180

gcccctggcc agggcctcga gtggatgggc tggattaatc ctaacagcgg ggacacaagc 240

tatgccaac gcttcctggg cagagtaaca atgacacggg atacaagtat taacaccgtc 300

catatggaac tctctcggct cggctcagat gataccgcgg tttattactg tgctagggag 360

gacgactcct cttggtatgg cagcttcgat tattgggggc aggggaaccct ggtgacagtc 420
 tcactctggtg gaggggggctc cgggggtggg ggcagcggag ggggagggttc tgatatacag 480
 atgactcaga gtccctcaag cttgagtgcc agtgtaggcg accgggtgac gataacctgt 540
 agggcttcac agggaatcag aaattatctg ggttgggtacc agcagaagcc aggaaaggca 600
 cctaaaagac ttatttacgc cgcctcctcc ttgcagtccg gcgtgccatc aaaattttct 660
 gggagcggct ctggaaccga gttcacctc acgatctcca gcctccagcc cgaggacttt 720
 gccacctact attgcctgca gcacgatagt gatctgcgaa cttttgggca aggcactaaa 780
 gtggaaatta agagagccgc tgcccttgat aatgaaaagt caaacggaac aatcattcac 840
 gtgaagggca agcacctctg tccgtcacc ttgttcctg gtccatcaa gccattctgg 900
 gtgttggtcg tagtggtgg agtcctcgct tgttactctc tgctcgtcac cgtggctttt 960
 ataatcttct gggttagatc caaaagaagc cgcctgctcc atagcgatta catgaatatg 1020
 actccacgcc gccctggccc cacaaggaaa cactaccagc cttacgcacc acctagagat 1080
 ttcgctgcct atcggagccg agtgaaattt tctagatcag ctgatgctcc cgcctatcag 1140
 caggacaga atcaacttta caatgagctg aacctgggtc gcagagaaga gtacgacgtt 1200
 ttggacaaac gccggggccg agatcctgag atggggggga agccgagaag gaagaatcct 1260
 caagaaggcc tgtacaacga gcttcaaaaa gacaaaatgg ctgaggcgta ctctgagatc 1320
 ggcatgaagg gcgagcggag acgaggcaag ggtcacgatg gcttgtatca gggcctgagt 1380
 acagccacaa aggacaccta tgacgccctc cacatgcagg cactgcccc acgctag 1437

<210> 26

<211> 478

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 26

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
 1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

20

25

30

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

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Asn Ser Gly Asp Thr Ser
 65 70 75 80

Tyr Ala Gln Arg Phe Leu Gly Arg Val Thr Met Thr Arg Asp Thr Ser
 85 90 95

Ile Asn Thr Val His Met Glu Leu Ser Arg Leu Gly Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Asp Asp Ser Ser Trp Tyr Gly Ser
 115 120 125

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

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
 145 150 155 160

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
 165 170 175

Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Gly Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile Tyr Ala Ala
 195 200 205

Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
 225 230 235 240

Ala Thr Tyr Tyr Cys Leu Gln His Asp Ser Asp Leu Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Val Glu Ile Lys Arg Ala Ala Ala Leu Asp Asn Glu
260 265 270

Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro
275 280 285

Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val
290 295 300

Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe
305 310 315 320

Ile Ile Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp
325 330 335

Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr
340 345 350

Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg Val
355 360 365

Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn
370 375 380

Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val
385 390 395 400

Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg
405 410 415

Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys
420 425 430

Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg
435 440 445

Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys

450

455

460

Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
 465 470 475

<210> 27

<211> 1455

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 27

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atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc      60
ccgcaagtgc agttggtgca gtctggagct gaagtgaaga aaccaggcgc tagcgtcaaa      120
gtgagctgta aggcctcagg ttacacgttt actgggtact atatgcattg ggtcaggcaa      180
gcccctggcc agggcctcga gtggatgggc tggattaatc ctaacagcgg ggacacaagc      240
tatgccaac gcttcctggg cagagtaaca atgacacggg atacaagtat taacaccgtc      300
catatggaac tctctcggct cggctcagat gataccgcgg tttattactg tgctagggag      360
gacgactcct cttggtatgg cagcttcgat tattgggggc agggaaccct ggtgacagtc      420
tcatctggtg gagggggctc cgggggtggg ggcagcggag ggggagggtt tgatatacag      480
atgactcaga gtccctcaag cttgagtgcc agtgtaggcg accgggtgac gataacctgt      540
agggcttcac agggaatcag aaattatctg ggttggtacc agcagaagcc aggaaaggca      600
cctaaaagac ttatttacgc cgcctcctcc ttgcagtccg gcgtgccatc aaaattttct      660
gggagcggct ctggaaccga gttcacctc acgatctcca gcctccagcc cgaggacttt      720
gccacctact attgcctgca gcacgatagt gatctgcgaa cttttgggca aggcactaaa      780
gtggaaatta agagagccgc tgcccttgat aatgaaaagt caaacggaac aatcattcac      840
gtgaagggca agcacctctg tccgtcacc ttgttccttg gtccatcaa gccattctgg      900
gtgttggtcg tagtgggtgg agtcctcgct tgttactctc tgctcgtcac cgtggctttt      960
ataatcttct gggttcgctt ttccgtcggt aagcggggga gaaaaaagct gctgtacatt     1020
ttcaaacagc cgtttatgag gccggtccaa acgactcagg aagaagacgg ctgctcctgc     1080

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cgctttcctg aggaggagga gggcgggtgc gaactgaggg tgaagttttc cagatctgca 1140
 gatgcaccag cgtatcagca gggccagaac caactgtata acgagctcaa cctgggacgc 1200
 agggaagagt atgacgtttt ggacaagcgc agaggacggg accctgagat ggggtggcaaa 1260
 ccaagacgaa aaaaccccca ggagggtctc tataatgagc tgcagaagga taagatggct 1320
 gaagcctatt ctgaaatagg catgaaagga gacgagagaa ggggaaaagg gcacgacggt 1380
 ttgtaccagg gactcagcac tgctacgaag gatacttatg acgctctcca catgcaagcc 1440
 ctgccaccta ggtaa 1455

<210> 28

<211> 484

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 28

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
 1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
 20 25 30

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

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Asn Ser Gly Asp Thr Ser
 65 70 75 80

Tyr Ala Gln Arg Phe Leu Gly Arg Val Thr Met Thr Arg Asp Thr Ser
 85 90 95

Ile Asn Thr Val His Met Glu Leu Ser Arg Leu Gly Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Asp Asp Ser Ser Trp Tyr Gly Ser
115 120 125

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

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
145 150 155 160

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
165 170 175

Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Gly Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile Tyr Ala Ala
195 200 205

Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
225 230 235 240

Ala Thr Tyr Tyr Cys Leu Gln His Asp Ser Asp Leu Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Val Glu Ile Lys Arg Ala Ala Ala Leu Asp Asn Glu
260 265 270

Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro
275 280 285

Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val
290 295 300

Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe
305 310 315 320

Ile Ile Phe Trp Val Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys
325 330 335

Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr
340 345 350

Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Gly
355 360 365

Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala
370 375 380

Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg
385 390 395 400

Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu
405 410 415

Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
420 425 430

Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met
435 440 445

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
450 455 460

Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala
465 470 475 480

Leu Pro Pro Arg

<210> 29
<211> 618
<212> PRT
<213> Homo sapiens

<400> 29
Met Val Ser Pro Arg Met Ser Gly Leu Leu Ser Gln Thr Val Ile Leu
1 5 10 15

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser
35 40 45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu
50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly
65 70 75 80

Ala Ala Leu Ser Ala Arg Gly Pro Val Tyr Thr Glu Gln Pro Gly Ala
85 90 95

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe
100 105 110

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

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala
130 135 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala
165 170 175

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

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala
195 200 205

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

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu
225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser
245 250 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val
260 265 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser
275 280 285

Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe
290 295 300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro
305 310 315 320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala
325 330 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys
340 345 350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys
355 360 365

Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala
370 375 380

Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys
385 390 395 400

Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser
405 410 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro
420 425 430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe
435 440 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys
450 455 460

Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro
465 470 475 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala
485 490 495

Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu
500 505 510

Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu
515 520 525

Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu
530 535 540

Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser
545 550 555 560

Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val
565 570 575

Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Val Ala Thr Pro Leu Phe
580 585 590

Pro Pro Leu His Thr Gly Arg Ala Gly Gln Arg Gln His Leu Leu Phe
595 600 605

Pro Tyr Pro Ser Ser Ile Leu Ser Val Lys
610 615

<210> 30
<211> 587
<212> PRT
<213> Homo sapiens

<400> 30
Met Val Ser Pro Arg Met Ser Gly Leu Leu Ser Gln Thr Val Ile Leu
1 5 10 15

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser
35 40 45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu
50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly
65 70 75 80

Ala Ala Leu Ser Ala Arg Gly Pro Val Tyr Thr Glu Gln Pro Gly Ala
85 90 95

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe
100 105 110

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

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala
130 135 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala
165 170 175

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

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala
195 200 205

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

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu
225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser
245 250 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val
260 265 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser
275 280 285

Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe
290 295 300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro
305 310 315 320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala
325 330 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys
340 345 350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys
355 360 365

Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala
370 375 380

Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys
385 390 395 400

Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser
405 410 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro
420 425 430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe
435 440 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys
450 455 460

Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro
465 470 475 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala
485 490 495

Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu
500 505 510

Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu
515 520 525

Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu
530 535 540

Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser
545 550 555 560

Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val
565 570 575

Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Ala
580 585

<210> 31
<211> 63
<212> DNA
<213> Artificial Sequence

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

<400> 31
atggcactcc ccgtaactgc tctgctgctg ccgttgcat tgctcctgca cgccgcacgc 60
ccg 63

<210> 32
<211> 21
<212> PRT
<213> Artificial Sequence

<220>

<221> source

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

<400> 32

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro
20

<210> 33

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 33

ggcgggtggag gctccggagg ggggggctct ggcggagggg gctcc

45

<210> 34

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 34

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 35

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 35
gggtctacat ccggctccgg gaagcccgga agtggcgaag gtagtacaaa gggg 54

<210> 36
<211> 18
<212> PRT
<213> Artificial Sequence

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

<400> 36
Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Thr
1 5 10 15

Lys Gly

<210> 37
<211> 126
<212> DNA
<213> Artificial Sequence

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

<400> 37
aagcggggga gaaaaaagct gctgtacatt ttcaaacagc cgtttatgag gccggtccaa 60
acgactcagg aagaagacgg ctgctcctgc cgctttcctg aggaggagga gggcgggtgc 120
gaactg 126

<210> 38
<211> 42
<212> PRT
<213> Artificial Sequence

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

<400> 38
Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
1 5 10 15

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

Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
35 40

<210> 39
<211> 37
<212> PRT
<213> Artificial Sequence

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

<400> 39
Arg Arg Asp Gln Arg Leu Pro Pro Asp Ala His Lys Pro Pro Gly Gly
1 5 10 15

Gly Ser Phe Arg Thr Pro Ile Gln Glu Glu Gln Ala Asp Ala His Ser
20 25 30

Thr Leu Ala Lys Ile
35

<210> 40
<211> 354
<212> DNA
<213> Artificial Sequence

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

<400> 40
caggtgcaac tgcaggaaag cgggcccggg ctggtgaagc cctcagaaac gctctccctc 60
acctgtacag tctctggcga ttcaatctct tcatattact ggacgtggat caggcagcct 120
cccggcaagg gactggagtg gatcggatat atctactata gtggcaccac taactataat 180
ccttccctga aaagccgggt gacaatctct gttgacacct ccaagagcca gttcagcctg 240
aaactctcca gtgtgacagc cgccgataca gccgtgtatt actgtgcctc tatcgctgtg 300

cgcggttct ttttgatta ttggggccag gggacactgg tgaccgttag cagc

354

<210> 41

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 41

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp Ser Ile Ser Ser Tyr
20 25 30

Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

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

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

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

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

Leu Val Thr Val Ser Ser
115

<210> 42

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

peptide"

<400> 42

Ser Tyr Tyr Trp Thr
1 5

<210> 43

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 43

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

<210> 44

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 44

Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr
1 5 10

<210> 45

<211> 327

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 45

gaaattgtac tgaccagtc ccccggcacg ctctctctct cccagggga aagggaacc 60

cttagctgcc gggcgagcca gagcgtgagt tcctcctacc tcgctggta tcagcagaag 120

cctggacagg ctcccagact gctgatttac ggggcttcta cgagagccac cggcatacct 180

gataggttct ctggctccgg gtctgggacc gactttactc ttacaatcag cagacttgag	240
cctgaagact tcgctgtgta ttattgtcaa caatacggaa cgtccccct tacctttggt	300
ggcgggacaa aagtggaaat taagagg	327

<210> 46
 <211> 109
 <212> PRT
 <213> Artificial Sequence

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

<400> 46
 Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

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

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

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

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

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

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

<210> 47
 <211> 12
 <212> PRT
 <213> Artificial Sequence

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

peptide"

<400> 47

Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala
1 5 10

<210> 48

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 48

Gly Ala Ser Thr Arg Ala Thr
1 5

<210> 49

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 49

Gln Gln Tyr Gly Thr Ser Pro Leu Thr
1 5

<210> 50

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 50

cagggtccagc	tggtgcagtc	tggggcagag	gtgaaacggc	cgggtgcaag	cgtgaagggtg	60
tcctgcaaag	cctctggcta	tacctttact	gggtactata	tgactgggt	tcggcaggcg	120
ccaggacagg	gtcttgagt	gatgggttg	attgatccaa	actctggcga	tacaaattac	180

gcacagaaat tccagggccg cgtgacgatg actcgagaca cttccatata caccgcctat	240
atggaagtga atagactccg gtctgacgac actgctgtct attactgtgc aagggatccc	300
aaccggcgga gttggtatta cggaatggat gtctgggccc aggttactac cgtcacggtg	360
tcttct	366

<210> 51
 <211> 122
 <212> PRT
 <213> Artificial Sequence

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

<400> 51
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Arg Pro Gly Ala
 1 5 10 15

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

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

Gly Trp Ile Asp Pro Asn Ser Gly Asp 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 Val Asn Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Asp Pro Asn Arg Arg Ser Trp Tyr Tyr Gly Met Asp Val Trp
 100 105 110

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

<210> 52
 <211> 5

<212> PRT
<213> Artificial Sequence

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

<400> 52
Gly Tyr Tyr Met His
1 5

<210> 53
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 53
Trp Ile Asp Pro Asn Ser Gly Asp Thr Asn Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 54
<211> 13
<212> PRT
<213> Artificial Sequence

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

<400> 54
Asp Pro Asn Arg Arg Ser Trp Tyr Tyr Gly Met Asp Val
1 5 10

<210> 55
<211> 735
<212> DNA
<213> Artificial Sequence

<220>
<221> source

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

<400> 55

caggtccagc tgggtgcagtc tggggcagag gtgaaacggc cgggtgcaag cgtgaagggtg	60
tcctgcaaag cctctggcta tacctttact gggtactata tgcactgggt tcggcaggcg	120
ccaggacagg gtcttgagtg gatgggttgg attgatccaa actctggcga taaaaattac	180
gcacagaaat tccagggccg cgtgacgatg actcgagaca cttccatata caccgcctat	240
atggaagtga atagactccg gtctgacgac actgctgtct attactgtgc aagggatccc	300
aaccggcgga gttggtatta cggaatgatg gtctgggccc aggggtactac cgtcacggtg	360
tcttctggcg gcgggggctc aggaggagga ggcagcgggtg gaggaggcag cgatattcag	420
atgacacaaa gcccttctag tctctccgca agcggtggcg accgcgtgac cattacgtgt	480
caggcttcac aagatattcg aaactacctg aactgggtatc agcagaagcc cggcaaagca	540
cctaagctgc tgatttatga cgctagcaac cttgagactg gcgtcccctc cagattttcc	600
ggcagcggct caggcaccga ctttactttt accatctcca cactccagcc agaagatatt	660
gcaacgtatt actgccaaca ttatgataac ctgcctttga ccttcggagg tggcaccaag	720
gtagagatca gaaga	735

<210> 56

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 56

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

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

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

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

<210> 57
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 57
Gln Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn
1 5 10

<210> 58
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 58
Asp Ala Ser Asn Leu Glu Thr
1 5

<210> 59
<211> 10
<212> PRT
<213> Artificial Sequence

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

peptide"

<400> 59

Gln His Tyr Asp Asn Leu Pro Leu Thr Phe
1 5 10

<210> 60

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 60

caagtgcagt tggatgcagtc tggagctgaa gtgaagaaac caggcgctag cgtcaaagtg 60
agctgtaagg cctcagggtta cacgtttact gggtactata tgcattgggt caggcaagcc 120
cctggccagg gcctcgagtg gatgggctgg attaatccta acagcgggga cacaagctat 180
gccaacgct tcctgggcag agtaacaatg acacgggata caagtattaa caccgtccat 240
atggaactct ctcggctcgg ctcatgatgat accgcggttt attactgtgc tagggaggac 300
gactcctctt ggtatggcag cttcgattat tgggggcagg gaaccctggt gacagtctca 360
tct 363

<210> 61

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 61

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 Gly Tyr
20 25 30

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

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

Leu Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asn Thr Val His
65 70 75 80

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

Ala Arg Glu Asp Asp Ser Ser Trp Tyr Gly Ser Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 62
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 62
Gly Tyr Tyr Met His
1 5

<210> 63
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 63
Trp Ile Asn Pro Asn Ser Gly Asp Thr Ser Tyr Ala Gln Arg Phe Leu
1 5 10 15

Gly

<210> 64
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 64
Glu Asp Asp Ser Ser Trp Tyr Gly Ser Phe Asp Tyr
1 5 10

<210> 65
<211> 324
<212> DNA
<213> Artificial Sequence

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

<400> 65
gatatacaga tgactcagag tccctcaagc ttgagtgccg gtgtaggcga ccgggtgacg 60
ataacctgta gggcttcaca gggaatcaga aattatctgg gttggtacca gcagaagcca 120
ggaaaggcac ctaaaagact tatttacgcc gcacacctct tgcagtccgg cgtgccatca 180
aaattttctg ggagcggctc tggaaccgag ttcaccctca cgatctccag cctccagccc 240
gaggactttg ccacctacta ttgcctgcag cacgatagtg atctgcgaac ttttgggcaa 300
ggcactaaag tggaattaa gaga 324

<210> 66
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 66
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 Gly Ile Arg Asn Tyr
20 25 30

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

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

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

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

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

<210> 67

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 67

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

<210> 68

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 68

Ala Ala Ser Ser Leu Gln Ser
1 5

<210> 69
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 69
Leu Gln His Asp Ser Asp Leu Arg Thr Phe
1 5 10

<210> 70
<211> 6762
<212> DNA
<213> Artificial Sequence

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

<400> 70
ctgacgcgcc ctgtagcggc gcattaagcg cggcgggtgt ggtggttacg cgcagcgtga 60
ccgctacact tgccagcgcc ctagcgcccg ctcctttcgc tttcttcctt tcctttctcg 120
ccacgttcgc cggctttccc cgtcaagctc taaatcgggg gctcccttta gggttccgat 180
ttagtgcttt acggcacctc gaccccaaaa aacttgatta gggatgatggg tcacgtagtg 240
ggccatcgcc ctgatagacg gtttttcgcc ctttgacgtt ggagtccacg ttctttaata 300
gtggactctt gttccaaact ggaacaacac tcaaccctat ctcggtctat tcttttgatt 360
tataagggat tttgccgatt tcggcctatt ggttaaaaaa tgagctgatt taacaaaaat 420
ttaacgcgaa ttttaacaaa atattaacgc ttacaatttg ccattcgcca ttcaggctgc 480
gcaactgttg ggaagggcga tcggtgcggg cctcttcgct attacgccag ctggcgaaag 540
ggggatgtgc tgcaaggcga ttaagttggg taacgccagg gttttcccag tcacgacgtt 600
gtaaaacgac ggccagtga a ttgtaatacg actcactata gggcgacccg gggatggcgc 660
gccagtaatc aattacgggg tcattagttc atagcccata tatggagttc cgcgttacat 720
aacttacggg aaatggcccg cctggctgac cgcccaacga ccccgccca ttgacgtcaa 780

taatgacgta	tgttcccata	gtaacgccaa	tagggacttt	ccattgacgt	caatgggtgg	840
agtattttacg	gtaaactgcc	cacttggcag	tacatcaagt	gtatcatatg	ccaagtacgc	900
cccctattga	cgtcaatgac	ggtaaattggc	ccgcctggca	ttatgcccag	tacatgacct	960
tatgggactt	tcctacttgg	cagtacatct	acgtattagt	catcgctatt	accatgctga	1020
tgcggttttg	gcagtacatc	aatgggcgtg	gatagcggtt	tgactcacgg	ggattttcaa	1080
gtctccaccc	cattgacgtc	aatgggagtt	tgttttggca	ccaaaatcaa	cgggactttc	1140
caaaatgtcg	taacaactcc	gccccattga	cgcaaattggg	cggtaggcgt	gtacgggtggg	1200
aggctctatat	aagcagagct	ggtttagtga	accgggggtct	ctctggtttag	accagatctg	1260
agcctggggag	ctctctggct	aactagggaa	cccactgctt	aagcctcaat	aaagcttgcc	1320
ttgagtgcct	caagtagtgt	gtgcccgtct	gttgtgtgac	tctggtaact	agagatccct	1380
cagacccttt	tagtcagtgt	ggaaaatctc	tagcagtggc	gcccgaacag	ggacttgaaa	1440
gcgaaaggga	aaccagagga	gctctctcga	cgcaggactc	ggcttgctga	agcgcgcacg	1500
gcaagaggcg	aggggcgggc	actggtgagt	acgccaaaaa	ttttgactag	cggaggctag	1560
aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	ggagaattag	atcgcgatgg	1620
gaaaaaattc	ggttaaggcc	agggggaaaag	aaaaaatata	aattaaaaca	tatagtatgg	1680
gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	tgttagaaac	atcagaaggc	1740
tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	caggatcaga	agaacttaga	1800
tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	aaaggataga	gataaaagac	1860
accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaca	aaagtaagac	caccgcacag	1920
caagccgccg	ctgatcttca	gacctggagg	aggagatatg	agggacaatt	ggagaagtga	1980
attatataaa	tataaagtag	taaaaattga	accattagga	gtagcaccca	ccaaggcaaa	2040
gagaagagtg	gtgcagagag	aaaaaagagc	agtgggaata	ggagctttgt	tccttggggtt	2100
cttgggagca	gcaggaagca	ctatgggcgc	agcgtcaatg	acgctgacgg	tacaggccag	2160
acaattattg	tctggtatag	tgcagcagca	gaacaatttg	ctgagggcta	ttgaggcgca	2220
acagcatctg	ttgcaactca	cagtctgggg	catcaagcag	ctccaggcaa	gaatcctggc	2280
tgtggaaaga	tacctaaagg	atcaacagct	cctggggatt	tggggttgct	ctggaaaact	2340
catttgcacc	actgctgtgc	cttggaatgc	tagttggagt	aataaatctc	tggaacagat	2400

ttggaatcac acgacctgga tggagtggga cagagaaatt aacaattaca caagcttaat	2460
acactcctta attgaagaat cgcaaaacca gcaagaaaag aatgaacaag aattattgga	2520
attagataaa tgggcaagtt tgtggaattg gtttaacata acaaattggc tgtggtatat	2580
aaaattattc ataatgatag taggaggctt ggtaggttta agaatagttt ttgctgtact	2640
ttctatagtg aatagagtta ggcagggata ttcaccatta tcgtttcaga cccacctccc	2700
aaccccgagg ggacccgaca ggcccgaagg aatagaagaa gaaggtggag agagagacag	2760
agacagatcc attcgattag tgaacggatc tcgacggtat cggttaactt ttaaaagaaa	2820
aggggggatt ggggggtaca gtgcagggga aagaatagta gacataatag caacagacat	2880
acaaactaaa gaattacaaa aacaaattac aaaattcaaa attttatcgc gatcgcggaa	2940
tgaaagaccc cacctgtagg tttggcaagc tagcttaagt aacgccattt tgcaaggcat	3000
ggaaaataca taactgagaa tagagaagtt cagatcaagg ttaggaacag agagacagca	3060
gaatatgggc caaacaggat atctgtggta agcagttcct gccccggctc agggccaaga	3120
acagatggtc cccagatgcg gtcccgccct cagcagtttc tagagaacca tcagatgttt	3180
ccagggtgcc ccaaggacct gaaaatgacc ctgtgcctta tttgaactaa ccaatcagtt	3240
cgcttctcgc ttctgttcgc gcgcttctgc tccccgagct caataaaaga gccacaacc	3300
cctcactcgg cgcgccagtc cttcgaagta gatctttgtc gatcctacca tccactcgac	3360
acacccgcca gcggccgctg ccaagcttcc gagctctcga attaattcac ggtacccacc	3420
atggcctagg gagactagtc gaatcgatat caacctctgg attacaaaat ttgtgaaaga	3480
ttgactggta ttcttaacta tgttgctcct ttacgctat gtggatacgc tgctttaatg	3540
cctttgtatc atgctattgc ttcccgtatg gctttcattt tctcctcctt gtataaatcc	3600
tggttgctgt ctctttatga ggagttgtgg cccgttgta ggcaacgtgg cgtggtgtgc	3660
actgtgtttg ctgacgaac cccactgggt tggggcattg ccaccacctg tcagctcctt	3720
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