

026172-005010PC - Sequence Listing_1.TXT
SEQUENCE LISTING

<110> SOLAZYME, INC.
<120> PRODUCTION OF TAILORED OILS IN HETEROTROPHIC MICROORGANISMS
<130> 026172-005010PC
<140> PCT/US2009/066142
<141> 2009-11-30
<150> 61/219,525
<151> 2009-06-23
<150> 61/174,357
<151> 2009-04-30
<150> 61/118,994
<151> 2008-12-01
<150> 61/118,590
<151> 2008-11-28
<160> 143
<170> PatentIn version 3.5
<210> 1
<211> 1187
<212> DNA
<213> Chlorella sp.

<400> 1
gatcagacgg gcctgacctg cgagataatc aagtgctcgt aggcaaccaa ctcagcagct 60
gcttggtggtt ggggtctgcag gatagtgttg cagggcccca aggacagcag ggggaacttac 120
accttggtccc cgacccagtt ttatggagtg cattgcctca agagcctagc cggagcgcta 180
ggctacatac ttgccgcacc ggtatgaggg gatatagtagc tcgcactgctg ctgtctagtg 240
agatgggcag tgctgcccac aaacaactgg ctgctcagcc atttgttggc ggaccattct 300
ggggggggcca gcaatgcctg actttcgggt aggggtgaaaa ctgaacaaag actacaaaaa 360
cagaatttct tcctccttgg aggtaagcgc aggccggccc gcctgcgccc acatggcgct 420
ccgaacacct ccatagctgt aaggggcgaac acatggccgg actgttgcga gcactctttc 480
atggccatac aagggtcatgt cgagattagt gctgagtagc acactatcac cccatgttgc 540
attgaagccg tgacttcatg ccaacctgcc cctgggcgta gcagacgtat gccatcatga 600
ccactagccg acatgcgctg tcttttgcca ccaaaacaac tggtagaccg ctcgaagtcg 660
tgccgcacac ctccgggagt gaggccggcg actcctcccc ggccggccgc ggccctacct 720
gggtaggggtc gccatacgcc cagacacaaa cgacgcagga ggggattggg gtagggaatc 780
ccaaccagcc taaccaagac ggcacctata ataataggtg gggggactaa cagccctata 840
tcgcaagctt tgggtgccta tcttgagaag cagaggttg agtggctgtg tacggctcagc 900
cctaagggtg gtgtgccgca gcctgaaaca aagcgtctag cagctgcttc tataatgtgt 960
cagccgttgt gtttcagtta tattgtatgc tattgtttgt tcgtgctagg gtggcgagc 1020
cccacctact gtggcgggcc attggttggg gcttgaattg cctcaccatc taaggctctga 1080

026172-005010PC - Sequence Listing_1.TXT

acgctcactc aaacgccttt gtacaactgc agaactttcc ttggcgctgc aactacagtg 1140
tgcaaaccag cacatagcac tcccttacat caccagcag tacaaca 1187

<210> 2
<211> 1414
<212> DNA
<213> *Chlorella ellipsoidea*

<400> 2
cgctgcgcac cagggccgcc agctcgctga tgctcgctcca aatgcggtcc cccgattttt 60
tgttcttcat cttctccacc ttggtggcct tcttggccag ggccttcagc tgcattgcgc 120
cagaccgttg agctcctgat cagcatcctc aggaggccct ttgacaagca agcccctgtg 180
caagcccatt cacggggtac cagtgggtgct gaggtagatg ggtttgaaaa ggattgctcg 240
gtcgattgct gctcatggaa ttggcatgtg catgcatgtt cacaatatgc caccaggctt 300
tggagcaaga gagcatgaat gccttcaggc aggttgaaaag ttcctggggg tgaagaggca 360
gggccgagga ttggaggagg aaagcatcaa gtcgtcgctc atgctcatgt tttcagtcag 420
agtttgccaa gctcacagga gcagagacaa gactggctgc tcagggtgtg catcgtgtgt 480
gtggtggggg gggggggggt aatacggtag gaaatgcact tggaaattccc acctcatgcc 540
agcggaccca catgcttgaa ttcgaggcct gtgggggtgag aaatgctcac tctgccctcg 600
ttgctgaggt acttcaggcc gctgagctca aagtcgatgc cctgctcgtc tatcagggcc 660
tgcacctctg ggctgaccgg ctacgcctcc ttcgcgggca tggagtaggc gccggcagcg 720
ttcatgtccg ggcccagggc agcgggtggtg ccataaatgt cgggtgatgtt ggggaggggg 780
gccgtcgcca caccattgcc gttgctggct gacgcatgca catgtggcct ggctggcacc 840
ggcagcactg gtctccagcc agccagcaag tggctgttca ggaaagcggc catgtttgtt 900
gtccctgcgc atgtaattcc ccagatcaaa ggagggaaca gcttggattt gatgtagtgc 960
ccaaccggac tgaatgtgcg atggcaggtc cctttgagtc tcccgaatta ctagcagggc 1020
actgtgacct aacgcagcat gccaaccgca aaaaaatgat tgacagaaaa tgaagcgggtg 1080
tgtcaatatt tgctgtattt attcgtttta atcagcaacc aagttcgaaa cgcaactatc 1140
gtggtgatca agtgaacctc atcagactta cctcgttcgg caaggaaacg gaggcaccaa 1200
attccaattt gatattatcg cttgccaagc tagagctgat ctttgggaaa ccaactgcca 1260
gacagtggac tgtgatggag tgccccgagt ggtggagcct cttcgattcg gttagtcatt 1320
actaacgtga accctcagtg aagggacat cagaccagaa agaccagatc tcctcctcga 1380
caccgagaga gtgttgccgc agtaggacga caag 1414

<210> 3
<211> 512
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Yeast sequence
Page 2

026172-005010PC - Sequence Listing_1.TXT

<400> 3

Met Thr Asn Glu Thr Ser Asp Arg Pro Leu Val His Phe Thr Pro Asn
1 5 10 15

Lys Gly Trp Met Asn Asp Pro Asn Gly Leu Trp Tyr Asp Glu Lys Asp
20 25 30

Ala Lys Trp His Leu Tyr Phe Gln Tyr Asn Pro Asn Asp Thr Val Trp
35 40 45

Gly Thr Pro Leu Phe Trp Gly His Ala Thr Ser Asp Asp Leu Thr Asn
50 55 60

Trp Glu Asp Gln Pro Ile Ala Ile Ala Pro Lys Arg Asn Asp Ser Gly
65 70 75 80

Ala Phe Ser Gly Ser Met Val Val Asp Tyr Asn Asn Thr Ser Gly Phe
85 90 95

Phe Asn Asp Thr Ile Asp Pro Arg Gln Arg Cys Val Ala Ile Trp Thr
100 105 110

Tyr Asn Thr Pro Glu Ser Glu Glu Gln Tyr Ile Ser Tyr Ser Leu Asp
115 120 125

Gly Gly Tyr Thr Phe Thr Glu Tyr Gln Lys Asn Pro Val Leu Ala Ala
130 135 140

Asn Ser Thr Gln Phe Arg Asp Pro Lys Val Phe Trp Tyr Glu Pro Ser
145 150 155 160

Gln Lys Trp Ile Met Thr Ala Ala Lys Ser Gln Asp Tyr Lys Ile Glu
165 170 175

Ile Tyr Ser Ser Asp Asp Leu Lys Ser Trp Lys Leu Glu Ser Ala Phe
180 185 190

Ala Asn Glu Gly Phe Leu Gly Tyr Gln Tyr Glu Cys Pro Gly Leu Ile
195 200 205

Glu Val Pro Thr Glu Gln Asp Pro Ser Lys Ser Tyr Trp Val Met Phe
210 215 220

Ile Ser Ile Asn Pro Gly Ala Pro Ala Gly Gly Ser Phe Asn Gln Tyr
225 230 235 240

Phe Val Gly Ser Phe Asn Gly Thr His Phe Glu Ala Phe Asp Asn Gln
245 250 255

Ser Arg Val Val Asp Phe Gly Lys Asp Tyr Tyr Ala Leu Gln Thr Phe
260 265 270

026172-005010PC - Sequence Listing_1.TXT

Phe Asn Thr Asp Pro Thr Tyr Gly Ser Ala Leu Gly Ile Ala Trp Ala
275 280 285

Ser Asn Trp Glu Tyr Ser Ala Phe Val Pro Thr Asn Pro Trp Arg Ser
290 295 300

Ser Met Ser Leu Val Arg Lys Phe Ser Leu Asn Thr Glu Tyr Gln Ala
305 310 315 320

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

Ile Ser Asn Ala Gly Pro Trp Ser Arg Phe Ala Thr Asn Thr Thr Leu
340 345 350

Thr Lys Ala Asn Ser Tyr Asn Val Asp Leu Ser Asn Ser Thr Gly Thr
355 360 365

Leu Glu Phe Glu Leu Val Tyr Ala Val Asn Thr Thr Gln Thr Ile Ser
370 375 380

Lys Ser Val Phe Ala Asp Leu Ser Leu Trp Phe Lys Gly Leu Glu Asp
385 390 395 400

Pro Glu Glu Tyr Leu Arg Met Gly Phe Glu Val Ser Ala Ser Ser Phe
405 410 415

Phe Leu Asp Arg Gly Asn Ser Lys Val Lys Phe Val Lys Glu Asn Pro
420 425 430

Tyr Phe Thr Asn Arg Met Ser Val Asn Asn Gln Pro Phe Lys Ser Glu
435 440 445

Asn Asp Leu Ser Tyr Tyr Lys Val Tyr Gly Leu Leu Asp Gln Asn Ile
450 455 460

Leu Glu Leu Tyr Phe Asn Asp Gly Asp Val Val Ser Thr Asn Thr Tyr
465 470 475 480

Phe Met Thr Thr Gly Asn Ala Leu Gly Ser Val Asn Met Thr Thr Gly
485 490 495

Val Asp Asn Leu Phe Tyr Ile Asp Lys Phe Gln Val Arg Glu Val Lys
500 505 510

<210> 4

<211> 20

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown: Yeast sequence

<400> 4

Met Leu Leu Gln Ala Phe Leu Phe Leu Leu Ala Gly Phe Ala Ala Lys
1 5 10 15

Ile Ser Ala Ser
20

<210> 5

<211> 18

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown: Higher plant secretion signal

<400> 5

Met Ala Asn Lys Ser Leu Leu Leu Leu Leu Leu Gly Ser Leu Ala
1 5 10 15

Ser Gly

<210> 6

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 6

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

<210> 7

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 7

Met Ala Asn Lys Leu Leu Leu Leu Leu Leu Leu Leu Leu Pro Leu
1 5 10 15

Ala Ala Ser Gly
20

<210> 8

<211> 2615

<212> DNA

<213> Saccharomyces cerevisiae

<400> 8

gaattcccca acatggtgga gcacgacact ctcgtctact ccaagaatat caaagataca

60

026172-005010PC - Sequence Listing_1.TXT

gtctcagaag accaaagggc tattgagact tttcaacaaa gggtaatatc gggaaacctc	120
ctcggattcc attgccagc tatctgtcac ttcatacaaa ggacagtaga aaaggaaggt	180
ggcacctaca aatgccatca ttgcgataaa ggaaaggcta tcgttcaaga tgcctctgcc	240
gacagtgggtc ccaaagatgg acccccaccc acgaggagca tcgtggaaaa agaagacgtt	300
ccaaccacgt cttcaaagca agtggattga tgtgaacatg gtggagcacg acactctcgt	360
ctactccaag aatatcaaag atacagtctc agaagaccaa agggctattg agacttttca	420
acaaagggta atatcgggaa acctcctcgg attccattgc ccagctatct gtcacttcat	480
caaaaggaca gtagaaaagg aaggtggcac ctacaaatgc catcattgcg ataaaggaaa	540
ggctatcggt caagatgcct ctgccgacag tggccccaaa gatggacccc caccacgag	600
gagcatcggt gaaaaagaag acgttccaac cagctcttca aagcaagtgg attgatgtga	660
tatctccact gacgtaaggg atgacgcaca atcccactat ccttcgcaag acccttctc	720
tatataagga agttcatttc atttgagag gacacgctga aatcaccagt ctctctctac	780
aaatctatct ctggcgcgcc atatcaatgc ttcttcaggc ctttcttttt cttcttgctg	840
gttttgctgc caagatcagc gcctctatga cgaacgaaac ctcggataga ccacttgctg	900
actttacacc aaacaagggc tggatgaatg accccaatgg actgtggtac gacgaaaaag	960
atgccaagtg gcatctgtac tttcaataca acccgaacga tactgtctgg gggacgccat	1020
tgttttgggg ccacgccacg tccgacgacc tgaccaattg ggaggaccaa ccaatagcta	1080
tcgctccgaa gaggaacgac tccggagcat tctcgggttc catggtggtt gactacaaca	1140
atacttccgg ctttttcaac gataccattg acccgagaca acgctgcgtg gccatatgga	1200
cttacaacac accggagtcc gaggagcagt acatctcgta tagcctggac ggtggataca	1260
cttttacaga gtatcagaag aaccctgtgc ttgctgcaaa ttcgactcag ttccgagatc	1320
cgaagggtctt ttggtacgag ccctcgcaga agtggatcat gacagcggca aagtcacagg	1380
actacaagat cgaaatttac tcgtctgacg accttaaadc ctggaagctc gaatccgcgt	1440
tcgcaaacga gggctttctc ggctaccaat acgaatgccc aggcctgata gaggtcccaa	1500
cagagcaaga tcccagcaag tcctactggg tgatgtttat ttccattaat ccaggagcac	1560
cggcaggagg ttcttttaat cagtacttcg tcggaagctt taacggaact ctttcgagg	1620
catttgataa ccaatcaaga gtagttgatt ttggaaagga ctactatgcc ctgcagactt	1680
tcttcaatac tgacccgacc tatgggagcg ctcttggcat tgcgtgggct tctaactggg	1740
agtattccgc attcgttcct acaaaccctt ggaggtcctc catgtcgtc gtgaggaaat	1800
tctctctcaa cactgagtac caggccaacc cggaaccga actcataaac ctgaaagccg	1860
aaccgatcct gaacattagc aacgctggcc cctggagccg gtttgcaacc aacaccacgt	1920
tgacgaaagc caacagctac aacgtcgatc tttcgaatag caccggtaca cttgaatttg	1980
aactggtgta tgccgtcaat accacccaaa cgatctcgaa gtcggtgttc gcggacctct	2040
ccctctgggt taaaggcctg gaagaccccg aggagtacct cagaatgggt ttcgaggttt	2100

026172-005010PC - Sequence Listing_1.TXT

ctgcgtcctc cttcttcctt gatcgcgga acagcaaagt aaaatttggt aaggagaacc	2160
catattttac caacaggatg agcgtaaca accaaccatt caagagcgaa aacgacctgt	2220
cgtactacaa agtgtatggt ttgcttgatc aaaatatcct ggaactctac ttcaacgatg	2280
gtgatgtcgt gtccaccaac acatacttca tgacaaccgg gaacgcactg ggctccgtga	2340
acatgacgac ggggtgtggat aacctgttct acatcgacaa attccagggtg aggggaagtca	2400
agtgagatct gtcgatcgac aagctcgagt ttctccataa taatgtgtga gtagttccca	2460
gataagggaa ttaggggttcc tataagggtt cgctcatgtg ttgagcatat aagaaaccct	2520
tagtatgtat ttgtatttgt aaaatacttc tatcaataaa atttctaatt cctaaaacca	2580
aaatccagta ctaaaatcca gatccccga attaa	2615

<210> 9
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 9	
tgttgaagaa tgagccggcg ac	22

<210> 10
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 10	
cagtgaagctt ttacgcactc	20

<210> 11
 <211> 541
 <212> DNA
 <213> Prototheca kruegani

<400> 11	
tgttgaagaa tgagccggcg agttaaaaag agtggcatgg ttaaagaaaa tactctggag	60
ccatagcgaa agcaagttta gtaagcttag gtcattcttt ttagaccgga aaccgagtga	120
tctacccatg atcaggggtga agtggttagta aaataacatg gaggcccgaa ccgactaatg	180
ttgaaaaatt agcggatgaa ttgtgggttag gggcgaaaaa ccaatcgaac tcggagttag	240
ctggttcttc ccgaaatgag tttaggcgca gcagtagcag tacaaataga ggggttaaagc	300
actgtttctt ttgtgggctt cgaaagttgt acctcaaagt ggcaaactct gaatactcta	360
tttagatatc tactagttag accttggggg ataagctcct tggcctaaaag ggaaacagcc	420
cagatcacca gttaaggccc caaaatgaaa atgatagtga ctaaggatgt gggtagtgca	480
aaacctccag cagggttagct tagaagcagc aatcctttca agagtgcgta atagctcact	540

026172-005010PC - Sequence Listing_1.TXT

g

541

<210> 12
 <211> 573
 <212> DNA
 <213> *Prototheca wickerhamii*

<400> 12
 tgttgaagaa tgagccggcg acttaaaata aatggcaggc taagagattt aataactcga 60
 aacctaagcg aaagcaagtc ttaatagggc gtcaatttaa caaaacttta aataaattat 120
 aaagtcattt attttagacc cgaacctgag tgatctaacc atggtcagga tgaaacttgg 180
 gtgacaccaa gtggaagtcc gaaccgaccg atgttgaaaa atcggcggat gaactgtggt 240
 tagtggtgaa ataccagtcg aactcagagc tagctggttc tccccgaaat gcgttgaggc 300
 gcagcaatat atctcgtcta tctaggggta aagcactggt tcggtgcggg ctatgaaaat 360
 ggtaccaa at cgtggcaaac tctgaatact agaaatgacg atatattagt gagactatgg 420
 gggataagct ccatagtcga gagggaaaca gccagacca ccagttaagg ccccaaatg 480
 ataatgaagt ggtaaaggag gtgaaaatgc aaatacaacc aggaggttgg cttagaagca 540
 gccatccttt aaagagtgcg taatagctca ctg 573

<210> 13
 <211> 541
 <212> DNA
 <213> *Prototheca stagnora*

<400> 13
 tgttgaagaa tgagccggcg agttaaaaaa aatggcatgg ttaaagatat ttctctgaag 60
 ccatagcgaa agcaagtttt acaagctata gtcatttttt ttagaccgga aaccgagtga 120
 tctacccatg atcaggggtga agtggtggtc aaataacatg gagggccgaa ccgactaatg 180
 gtgaaaaatt agcggatgaa ttgtgggtag gggcgaaaaa ccaatcgaac tcggagttag 240
 ctggttctcc ccgaaatgcg tttaggcgca gcagtagcaa cacaaataga ggggtaaagc 300
 actgtttctt ttgtgggctt cgaaagtgtg acctcaaagt ggcaaactct gaatactcta 360
 tttagatatc tactagttag accttggggg ataagctcct tgggtcaaaag ggaaacagcc 420
 cagatcacca gttaaggccc caaaatgaaa atgatagtga ctaaggacgt gagtatgtca 480
 aaacctccag caggtttagt tagaagcagc aatcctttca agagtgcgta atagctcact 540

g

541

<210> 14
 <211> 541
 <212> DNA
 <213> *Prototheca moriformis*

<400> 14
 tgttgaagaa tgagccggcg agttaaaaag agtggcatgg ttaaagataa ttctctggag 60
 ccatagcgaa agcaagttta acaagctaaa gtcacccttt ttagaccgga aaccgagtga 120

026172-005010PC - Sequence Listing_1.TXT

tctacccatg atcaggggtga agtggttgga aaataacatg gagggccgaa ccgactaatg	180
gtgaaaaatt agcggatgaa ttgtgggtag gggcgaaaaa ccaatcgaac tcggaggttag	240
ctggttctcc ccgaaatgcg tttaggcgca gcagtagcaa cacaaataga ggggtaaagc	300
actgtttctt ttgtgggctt cgaaagttgt acctcaaagt ggcaaactct gaatactcta	360
tttagatatc tactagttag accttggggg ataagctcct tgggtcaaaag ggaaacagcc	420
cagatcacca gttaaggccc caaaatgaaa atgatagtga ctaaggatgt gggatatgta	480
aaacctccag caggttagct tagaagcagc aatcctttca agagtgcgta atagctcact	540
g	541

<210> 15
 <211> 573
 <212> DNA
 <213> Prototheca moriformis

<400> 15	
tggtgaagaa tgagccggcg acttaaaata aatggcaggc taagagaatt aataactcga	60
aacctaagcg aaagcaagtc ttaatagggc gctaatttaa caaaacatta aataaaatct	120
aaagtcattt attttagacc cgaacctgag tgatctaacc atggtcagga tgaaacttgg	180
gtgacaccaa gtggaagtcc gaaccgaccg atgttgaaaa atcggcggat gaactgtggt	240
tagtggtgaa ataccagtcg aactcagagc tagctggttc tccccgaaat gcgttgaggc	300
gcagcaatat atctcgtcta tctaggggta aagcactggt tcggtgcggg ctatgaaaat	360
ggtaccaa at cgtggcaaac tctgaatact agaaatgacg atatattagt gagactatgg	420
gggataagct ccatagtcga gagggaaaca gcccagacca ccagttaagg ccccaaatg	480
ataatgaagt ggtaaaggag gtgaaaatgc aaatacaacc aggagggttg cttagaagca	540
gccatccttt aaagagtgcg taatagctca ctg	573

<210> 16
 <211> 573
 <212> DNA
 <213> Prototheca wickerhamii

<400> 16	
tggtgaagaa tgagccgtcg acttaaaata aatggcaggc taagagaatt aataactcga	60
aacctaagcg aaagcaagtc ttaatagggc gctaatttaa caaaacatta aataaaatct	120
aaagtcattt attttagacc cgaacctgag tgatctaacc atggtcagga tgaaacttgg	180
gtgacaccaa gtggaagtcc gaaccgaccg atgttgaaaa atcggcggat gaactgtggt	240
tagtggtgaa ataccagtcg aactcagagc tagctggttc tccccgaaat gcgttgaggc	300
gcagcaatat atctcgtcta tctaggggta aagcactggt tcggtgcggg ctatgaaaat	360
ggtaccaa at cgtggcaaac tctgaatact agaaatgacg atatattagt gagactatgg	420
gggataagct ccatagtcga gagggaaaca gcccagacca ccagttaagg ccccaaatg	480
ataatgaagt ggtaaaggag gtgaaaatgc aaatacaacc aggagggttg cttagaagca	540

gccatccttt aaagagtgcg taatagctca ctg

573

<210> 17
 <211> 541
 <212> DNA
 <213> Prototheca moriformis

<400> 17
 tgttgaagaa tgagccggcg agttaaaaag agtggcgtgg ttaaagaaaa ttctctggaa 60
 ccatagcgaa agcaagttta acaagcttaa gtcacttttt ttagacccga aaccgagtga 120
 tctacccatg atcaggggtga agtggttgga aaataacatg gagggccgaa ccgactaatg 180
 gtgaaaaatt agcggatgaa ttgtgggtag gggcgaaaaa ccaatcgaac tcggagttag 240
 ctggttctcc ccgaaatgcg tttaggcgca gcagtagcaa cacaaataga ggggtaaagc 300
 actgtttctt ttgtgggctc cgaaagttgt acctcaaagt ggcaaactct gaatactcta 360
 tttagatata tactagttag accttggggg ataagctcct tggtcgaaag ggaaacagcc 420
 cagatcacca gttaaggccc caaaatgaaa atgatatgta ctaaggatgt gagtatgtca 480
 aaacctccag caggtttagct tagaagcagc aatcctttca agagtgcgta atagctcact 540
 g 541

<210> 18
 <211> 541
 <212> DNA
 <213> Prototheca zopfii

<400> 18
 tgttgaagaa tgagccggcg agttaaaaag agtggcatgg ttaaagaaaa ttctctggag 60
 ccatagcgaa agcaagttta acaagcttaa gtcacttttt ttagacccga aaccgagtga 120
 tctacccatg atcaggggtga agtggttgga aaataacatg gagggccgaa ccgactaatg 180
 gtgaaaaatt agcggatgaa ttgtgggtag gggcgaaaaa ccaatcgaac tcggagttag 240
 ctggttctcc ccgaaatgcg tttaggcgca gcagtagcaa cacaaataga ggggtaaagc 300
 actgtttctt tcgtgggctt cgaaagttgt acctcaaagt ggcaaactct gaatactcta 360
 tttagatata tactagttag accttggggg ataagctcct tggtcgaaag ggaaacagcc 420
 cagatcacca gttaaggccc caaaatgaaa atgatatgta ctaaggatgt gagtatgtca 480
 aaacctccag caggtttagct tagaagcagc aatcctttca agagtgcgta atagctcact 540
 g 541

<210> 19
 <211> 565
 <212> DNA
 <213> Prototheca moriformis

<400> 19
 tgttgaagaa tgagccggcg acttagaaaa ggtggcatgg ttaaggaaat attccgaagc 60
 cgtagcaaaa gcgagtctga atagggcgat aaaatatatt aatattttaga atctagtcac 120
 tttttctaga cccgaacccg ggtgatctaa ccatgaccag gatgaagctt ggggtgatacc 180

026172-005010PC - Sequence Listing_1.TXT

```

aagtgaaggt ccgaaccgac cgatgttgaa aaatcggcgg atgagttgtg gttagcgggtg      240
aaataccagt cgaacccgga gctagctggt tctccccgaa atgcgttgag gcgcagcagt      300
acatctagtc tatctagggg taaagcactg tttcgggtgcg ggctgtgaga acggtaccaa      360
atcgtggcaa actctgaata ctagaaatga cgatgtagta gtgagactgt gggggataag      420
ctccattgtc aagagggaaa cagcccagac caccagctaa ggccccaaaa tggtaatgta      480
gtgacaaagg aggtgaaaat gcaaatacaa ccaggagggtt ggcttagaag cagccatcct      540
ttaaagagtg cgtaatatgt cactg      565

```

<210> 20

<211> 550

<212> PRT

<213> Cichorium intybus

<400> 20

```

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

```

```

Glu Gln Pro Tyr Arg Thr Ala Phe His Phe Gln Pro Pro Gln Asn Trp
20          25          30

```

```

Met Asn Asp Pro Asn Gly Pro Met Cys Tyr Asn Gly Val Tyr His Leu
35          40          45

```

```

Phe Tyr Gln Tyr Asn Pro Phe Gly Pro Leu Trp Asn Leu Arg Met Tyr
50          55          60

```

```

Trp Ala His Ser Val Ser His Asp Leu Ile Asn Trp Ile His Leu Asp
65          70          75          80

```

```

Leu Ala Phe Ala Pro Thr Glu Pro Phe Asp Ile Asn Gly Cys Leu Ser
85          90          95

```

```

Gly Ser Ala Thr Val Leu Pro Gly Asn Lys Pro Ile Met Leu Tyr Thr
100         105         110

```

```

Gly Ile Asp Thr Glu Asn Arg Gln Val Gln Asn Leu Ala Val Pro Lys
115        120        125

```

```

Asp Leu Ser Asp Pro Tyr Leu Arg Glu Trp Val Lys His Thr Gly Asn
130        135        140

```

```

Pro Ile Ile Ser Leu Pro Glu Glu Ile Gln Pro Asp Asp Phe Arg Asp
145        150        155        160

```

```

Pro Thr Thr Thr Trp Leu Glu Glu Asp Gly Thr Trp Arg Leu Leu Val
165        170        175

```

```

Gly Ser Gln Lys Asp Lys Thr Gly Ile Ala Phe Leu Tyr His Ser Gly
180        185        190

```

026172-005010PC - Sequence Listing_1.TXT

Asp Phe Val Asn Trp Thr Lys Ser Asp Ser Pro Leu His Lys Val Ser
195 200 205

Gly Thr Gly Met Trp Glu Cys Val Asp Phe Phe Pro Val Trp Val Asp
210 215 220

Ser Thr Asn Gly Val Asp Thr Ser Ile Ile Asn Pro Ser Asn Arg Val
225 230 235 240

Lys His Val Leu Lys Leu Gly Ile Gln Asp His Gly Lys Asp Cys Tyr
245 250 255

Leu Ile Gly Lys Tyr Ser Ala Asp Lys Glu Asn Tyr Val Pro Glu Asp
260 265 270

Glu Leu Thr Leu Ser Thr Leu Arg Leu Asp Tyr Gly Met Tyr Tyr Ala
275 280 285

Ser Lys Ser Phe Phe Asp Pro Val Lys Asn Arg Arg Ile Met Thr Ala
290 295 300

Trp Val Asn Glu Ser Asp Ser Glu Ala Asp Val Ile Ala Arg Gly Trp
305 310 315 320

Ser Gly Val Gln Ser Phe Pro Arg Ser Leu Trp Leu Asp Lys Asn Gln
325 330 335

Lys Gln Leu Leu Gln Trp Pro Ile Glu Glu Ile Glu Met Leu His Gln
340 345 350

Asn Glu Val Ser Phe His Asn Lys Lys Leu Asp Gly Gly Ser Ser Leu
355 360 365

Glu Val Leu Gly Ile Thr Ala Ser Gln Ala Asp Val Lys Ile Ser Phe
370 375 380

Lys Leu Ala Asn Leu Glu Glu Ala Glu Glu Leu Asp Pro Ser Trp Val
385 390 395 400

Asp Pro Gln Leu Ile Cys Ser Glu Asn Asp Ala Ser Lys Lys Gly Lys
405 410 415

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

Gln Thr Ala Ile Phe Phe Arg Val Phe Arg Lys Asn Gly Arg Tyr Val
435 440 445

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

026172-005010PC - Sequence Listing_1.TXT

Glu Lys Arg Thr Tyr Gly Ala Phe Val Asp Ile Asp Pro Gln Gln Asp
465 470 475 480

Glu Ile Ser Leu Arg Thr Leu Ile Asp His Ser Ile Val Glu Ser Phe
485 490 495

Gly Gly Arg Gly Lys Thr Cys Ile Thr Thr Arg Val Tyr Pro Thr Leu
500 505 510

Ala Ile Gly Glu Gln Ala Arg Leu Phe Ala Phe Asn His Gly Thr Glu
515 520 525

Ser Val Glu Ile Ser Glu Leu Ser Ala Trp Ser Met Lys Lys Ala Gln
530 535 540

Met Lys Val Glu Glu Pro
545 550

<210> 21
<211> 581
<212> PRT
<213> Schizosaccharomyces pombe

<400> 21
Met Phe Leu Lys Tyr Ile Leu Ala Ser Gly Ile Cys Leu Val Ser Leu
1 5 10 15

Leu Ser Ser Thr Asn Ala Ala Pro Arg His Leu Tyr Val Lys Arg Tyr
20 25 30

Pro Val Ile Tyr Asn Ala Ser Asn Ile Thr Glu Val Ser Asn Ser Thr
35 40 45

Thr Val Pro Pro Pro Pro Phe Val Asn Thr Thr Ala Pro Asn Gly Thr
50 55 60

Cys Leu Gly Asn Tyr Asn Glu Tyr Leu Pro Ser Gly Tyr Tyr Asn Ala
65 70 75 80

Thr Asp Arg Pro Lys Ile His Phe Thr Pro Ser Ser Gly Phe Met Asn
85 90 95

Asp Pro Asn Gly Leu Val Tyr Thr Gly Gly Val Tyr His Met Phe Phe
100 105 110

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

Thr Val Ser Lys Asp Leu Ile His Trp Glu Asn Tyr Pro Ile Ala Ile
130 135 140

026172-005010PC - Sequence Listing_1.TXT

Tyr Pro Asp Glu His Glu Asn Gly Val Leu Ser Leu Pro Phe Ser Gly
 145 150 155 160
 Ser Ala Val Val Asp Val His Asn Ser Ser Gly Leu Phe Ser Asn Asp
 165 170 175
 Thr Ile Pro Glu Glu Arg Ile Val Leu Ile Tyr Thr Asp His Trp Thr
 180 185 190
 Gly Val Ala Glu Arg Gln Ala Ile Ala Tyr Thr Thr Asp Gly Gly Tyr
 195 200 205
 Thr Phe Lys Lys Tyr Ser Gly Asn Pro Val Leu Asp Ile Asn Ser Leu
 210 215 220
 Gln Phe Arg Asp Pro Lys Val Ile Trp Asp Phe Asp Ala Asn Arg Trp
 225 230 235 240
 Val Met Ile Val Ala Met Ser Gln Asn Tyr Gly Ile Ala Phe Tyr Ser
 245 250 255
 Ser Tyr Asp Leu Ile His Trp Thr Glu Leu Ser Val Phe Ser Thr Ser
 260 265 270
 Gly Tyr Leu Gly Leu Gln Tyr Glu Cys Pro Gly Met Ala Arg Val Pro
 275 280 285
 Val Glu Gly Thr Asp Glu Tyr Lys Trp Val Leu Phe Ile Ser Ile Asn
 290 295 300
 Pro Gly Ala Pro Leu Gly Gly Ser Val Val Gln Tyr Phe Val Gly Asp
 305 310 315 320
 Trp Asn Gly Thr Asn Phe Val Pro Asp Asp Gly Gln Thr Arg Phe Val
 325 330 335
 Asp Leu Gly Lys Asp Phe Tyr Ala Ser Ala Leu Tyr His Ser Ser Ser
 340 345 350
 Ala Asn Ala Asp Val Ile Gly Val Gly Trp Ala Ser Asn Trp Gln Tyr
 355 360 365
 Thr Asn Gln Ala Pro Thr Gln Val Phe Arg Ser Ala Met Thr Val Ala
 370 375 380
 Arg Lys Phe Thr Leu Arg Asp Val Pro Gln Asn Pro Met Thr Asn Leu
 385 390 395 400
 Thr Ser Leu Ile Gln Thr Pro Leu Asn Val Ser Leu Leu Arg Asp Glu
 405 410 415

026172-005010PC - Sequence Listing_1.TXT

Thr Leu Phe Thr Ala Pro Val Ile Asn Ser Ser Ser Ser Leu Ser Gly
420 425 430

Ser Pro Ile Thr Leu Pro Ser Asn Thr Ala Phe Glu Phe Asn Val Thr
435 440 445

Leu Ser Ile Asn Tyr Thr Glu Gly Cys Thr Thr Gly Tyr Cys Leu Gly
450 455 460

Arg Ile Ile Ile Asp Ser Asp Asp Pro Tyr Arg Leu Gln Ser Ile Ser
465 470 475 480

Val Asp Val Asp Phe Ala Ala Ser Thr Leu Val Ile Asn Arg Ala Lys
485 490 495

Ala Gln Met Gly Trp Phe Asn Ser Leu Phe Thr Pro Ser Phe Ala Asn
500 505 510

Asp Ile Tyr Ile Tyr Gly Asn Val Thr Leu Tyr Gly Ile Val Asp Asn
515 520 525

Gly Leu Leu Glu Leu Tyr Val Asn Asn Gly Glu Lys Thr Tyr Thr Asn
530 535 540

Asp Phe Phe Phe Leu Gln Gly Ala Thr Pro Gly Gln Ile Ser Phe Ala
545 550 555 560

Ala Phe Gln Gly Val Ser Phe Asn Asn Val Thr Val Thr Pro Leu Lys
565 570 575

Thr Ile Trp Asn Cys
580

<210> 22
<211> 550
<212> PRT
<213> Pichia anomala

<400> 22
Met Ile Gln Leu Ser Pro Leu Leu Leu Leu Pro Leu Phe Ser Val Phe
1 5 10 15

Asn Ser Ile Ala Asp Ala Ser Thr Glu Tyr Leu Arg Pro Gln Ile His
20 25 30

Leu Thr Pro Asp Gln Gly Trp Met Asn Asp Pro Asn Gly Met Phe Tyr
35 40 45

Asp Arg Lys Asp Lys Leu Trp His Val Tyr Phe Gln His Asn Pro Asp
50 55 60

Lys Lys Ser Ile Trp Ala Thr Pro Val Thr Trp Gly His Ser Thr Ser
65 70 75 80

026172-005010PC - Sequence Listing_1.TXT

Lys Asp Leu Leu Thr Trp Asp Tyr His Gly Asn Ala Leu Glu Pro Glu
85 90 95

Asn Asp Asp Glu Gly Ile Phe Ser Gly Ser Val Val Val Asp Arg Asn
100 105 110

Asn Thr Ser Gly Phe Phe Asn Asp Ser Thr Asp Pro Glu Gln Arg Ile
115 120 125

Val Ala Ile Tyr Thr Asn Asn Ala Gln Leu Gln Thr Gln Glu Ile Ala
130 135 140

Tyr Ser Leu Asp Lys Gly Tyr Ser Phe Ile Lys Tyr Asp Gln Asn Pro
145 150 155 160

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

His Asp Glu Ser Asn Gln Trp Ile Met Val Val Ala Lys Thr Gln Glu
180 185 190

Phe Lys Val Gln Ile Tyr Gly Ser Pro Asp Leu Lys Lys Trp Asp Leu
195 200 205

Lys Ser Asn Phe Thr Ser Asn Gly Tyr Leu Gly Phe Gln Tyr Glu Cys
210 215 220

Pro Gly Leu Phe Lys Leu Pro Ile Glu Asn Pro Leu Asn Asp Thr Val
225 230 235 240

Thr Ser Lys Trp Val Leu Leu Leu Ala Ile Asn Pro Gly Ser Pro Leu
245 250 255

Gly Gly Ser Ile Asn Glu Tyr Phe Ile Gly Asp Phe Asp Gly Thr Thr
260 265 270

Phe His Pro Asp Asp Gly Ala Thr Arg Phe Met Asp Ile Gly Lys Asp
275 280 285

Phe Tyr Ala Phe Gln Ser Phe Asp Asn Thr Glu Pro Glu Asp Gly Ala
290 295 300

Leu Gly Leu Ala Trp Ala Ser Asn Trp Gln Tyr Ala Asn Thr Val Pro
305 310 315 320

Thr Glu Asn Trp Arg Ser Ser Met Ser Leu Val Arg Asn Tyr Thr Leu
325 330 335

Lys Tyr Val Asp Val Asn Pro Glu Asn Tyr Gly Leu Thr Leu Ile Gln
340 345 350

026172-005010PC - Sequence Listing_1.TXT

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

Thr Leu Glu Thr Ile Asn Glu Tyr Glu Val Asn Asp Leu Lys Leu Asp
370 375 380

Lys Ser Ser Phe Val Ala Thr Asp Phe Asn Thr Glu Arg Asn Ala Thr
385 390 395 400

Gly Val Phe Glu Phe Asp Leu Lys Phe Thr Gln Thr Asp Leu Lys Met
405 410 415

Gly Tyr Ser Asn Met Thr Thr Gln Phe Gly Leu Tyr Ile His Ser Gln
420 425 430

Thr Val Lys Gly Ser Gln Glu Thr Leu Gln Leu Val Phe Asp Thr Leu
435 440 445

Ser Thr Thr Trp Tyr Ile Asp Arg Thr Thr Gln His Ser Phe Gln Arg
450 455 460

Asn Ser Pro Val Phe Thr Glu Arg Ile Ser Thr Tyr Val Glu Lys Ile
465 470 475 480

Asp Thr Thr Asp Gln Gly Asn Val Tyr Thr Leu Tyr Gly Val Val Asp
485 490 495

Arg Asn Ile Leu Glu Leu Tyr Phe Asn Asp Gly Ser Ile Ala Met Thr
500 505 510

Asn Thr Phe Phe Phe Arg Glu Gly Lys Ile Pro Thr Ser Phe Glu Val
515 520 525

Val Cys Asp Ser Glu Lys Ser Phe Ile Thr Ile Asp Glu Leu Ser Val
530 535 540

Arg Glu Leu Ala Arg Lys
545 550

<210> 23

<211> 533

<212> PRT

<213> Debaryomyces occidentalis

<400> 23

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

Phe Gly Tyr Val Ala Ser Ser Ser Ile Asp Leu Ser Val Asp Thr Ser
20 25 30

026172-005010PC - Sequence Listing_1.TXT

Glu Tyr Asn Arg Pro Leu Ile His Phe Thr Pro Glu Lys Gly Trp Met
 35 40 45
 Asn Asp Pro Asn Gly Leu Phe Tyr Asp Lys Thr Ala Lys Leu Trp His
 50 55 60
 Leu Tyr Phe Gln Tyr Asn Pro Asn Ala Thr Ala Trp Gly Gln Pro Leu
 65 70 75 80
 Tyr Trp Gly His Ala Thr Ser Asn Asp Leu Val His Trp Asp Glu His
 85 90 95
 Glu Ile Ala Ile Gly Pro Glu His Asp Asn Glu Gly Ile Phe Ser Gly
 100 105 110
 Ser Ile Val Val Asp His Asn Asn Thr Ser Gly Phe Phe Asn Ser Ser
 115 120 125
 Ile Asp Pro Asn Gln Arg Ile Val Ala Ile Tyr Thr Asn Asn Ile Pro
 130 135 140
 Asp Leu Gln Thr Gln Asp Ile Ala Phe Ser Leu Asp Gly Gly Tyr Thr
 145 150 155 160
 Phe Thr Lys Tyr Glu Asn Asn Pro Val Ile Asp Val Ser Ser Asn Gln
 165 170 175
 Phe Arg Asp Pro Lys Val Phe Trp His Glu Arg Phe Lys Ser Met Asp
 180 185 190
 His Gly Cys Ser Glu Ile Ala Arg Val Lys Ile Gln Ile Phe Gly Ser
 195 200 205
 Ala Asn Leu Lys Asn Trp Val Leu Asn Ser Asn Phe Ser Ser Gly Tyr
 210 215 220
 Tyr Gly Asn Gln Tyr Gly Met Ser Arg Leu Ile Glu Val Pro Ile Glu
 225 230 235 240
 Asn Ser Asp Lys Ser Lys Trp Val Met Phe Leu Ala Ile Asn Pro Gly
 245 250 255
 Ser Pro Leu Gly Gly Ser Ile Asn Gln Tyr Phe Val Gly Asp Phe Asp
 260 265 270
 Gly Phe Gln Phe Val Pro Asp Asp Ser Gln Thr Arg Phe Val Asp Ile
 275 280 285
 Gly Lys Asp Phe Tyr Ala Phe Gln Thr Phe Ser Glu Val Glu His Gly
 290 295 300

026172-005010PC - Sequence Listing_1.TXT

Val Leu Gly Leu Ala Trp Ala Ser Asn Trp Gln Tyr Ala Asp Gln Val
305 310 315 320

Pro Thr Asn Pro Trp Arg Ser Ser Thr Ser Leu Ala Arg Asn Tyr Thr
325 330 335

Leu Arg Tyr Val Ile Gln Met Leu Lys Leu Thr Ala Asn Ile Asp Lys
340 345 350

Ser Val Leu Pro Asp Ser Ile Asn Val Val Asp Lys Leu Lys Lys Lys
355 360 365

Asn Val Lys Leu Thr Asn Lys Lys Pro Ile Lys Thr Asn Phe Lys Gly
370 375 380

Ser Thr Gly Leu Phe Asp Phe Asn Ile Thr Phe Lys Val Leu Asn Leu
385 390 395 400

Asn Val Ser Pro Gly Lys Thr His Phe Asp Ile Leu Ile Asn Ser Gln
405 410 415

Glu Leu Asn Ser Ser Val Asp Ser Ile Lys Ile Gly Phe Asp Ser Ser
420 425 430

Gln Ser Leu Phe Tyr Ile Asp Arg His Ile Pro Asn Val Glu Phe Pro
435 440 445

Arg Lys Gln Phe Phe Thr Asp Lys Leu Ala Ala Tyr Leu Glu Pro Leu
450 455 460

Asp Tyr Asp Gln Asp Leu Arg Val Phe Ser Leu Tyr Gly Ile Val Asp
465 470 475 480

Lys Asn Ile Ile Glu Leu Tyr Phe Asn Asp Gly Thr Val Ala Met Thr
485 490 495

Asn Thr Phe Phe Met Gly Glu Gly Lys Tyr Pro His Asp Ile Gln Ile
500 505 510

Val Thr Asp Thr Glu Glu Pro Leu Phe Glu Leu Glu Ser Val Ile Ile
515 520 525

Arg Glu Leu Asn Lys
530

<210> 24
<211> 654
<212> PRT
<213> Oryza sativa

<400> 24
Met Ala Thr Ser Arg Leu Thr Pro Ala Tyr Asp Leu Lys Asn Ala Ala
1 5 10 15

026172-005010PC - Sequence Listing_1.TXT

Ala Ala Val Tyr Thr Pro Leu Pro Glu Gln Pro His Ser Ala Glu Val
20 25 30

Glu Ile Arg Asp Arg Lys Pro Phe Lys Ile Ile Ser Ala Ile Ile Leu
35 40 45

Ser Ser Leu Leu Leu Leu Ala Leu Ile Leu Val Ala Val Asn Tyr Gln
50 55 60

Ala Pro Pro Ser His Ser Ser Gly Asp Asn Ser Gln Pro Ala Ala Val
65 70 75 80

Met Pro Pro Ser Arg Gly Val Ser Gln Gly Val Ser Glu Lys Ala Phe
85 90 95

Arg Gly Ala Ser Gly Ala Gly Asn Gly Val Ser Phe Ala Trp Ser Asn
100 105 110

Leu Met Leu Ser Trp Gln Arg Thr Ser Tyr His Phe Gln Pro Val Lys
115 120 125

Asn Trp Met Asn Asp Pro Asn Gly Pro Leu Tyr Tyr Lys Gly Trp Tyr
130 135 140

His Leu Phe Tyr Gln Tyr Asn Pro Asp Ser Ala Val Trp Gly Asn Ile
145 150 155 160

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

Pro Phe Ala Met Val Pro Asp Gln Trp Tyr Asp Val Asn Gly Val Trp
180 185 190

Thr Gly Ser Ala Thr Ile Leu Pro Asp Gly Arg Ile Val Met Leu Tyr
195 200 205

Thr Gly Asp Thr Asp Asp Tyr Val Gln Asp Gln Asn Leu Ala Phe Pro
210 215 220

Ala Asn Leu Ser Asp Pro Leu Leu Val Asp Trp Val Lys Tyr Pro Asn
225 230 235 240

Asn Pro Val Ile Tyr Pro Pro Pro Gly Ile Gly Val Lys Asp Phe Arg
245 250 255

Asp Pro Thr Thr Ala Gly Thr Ala Gly Met Gln Asn Gly Gln Arg Leu
260 265 270

Val Thr Ile Gly Ser Lys Val Gly Lys Thr Gly Ile Ser Leu Val Tyr
275 280 285

026172-005010PC - Sequence Listing_1.TXT

Glu Thr Thr Asn Phe Thr Thr Phe Lys Leu Leu Tyr Gly Val Leu His
290 295 300

Ala Val Pro Gly Thr Gly Met Trp Glu Cys Val Asp Leu Tyr Pro Val
305 310 315 320

Ser Thr Thr Gly Glu Asn Gly Leu Asp Thr Ser Val Asn Gly Leu Gly
325 330 335

Val Lys His Val Leu Lys Thr Ser Leu Asp Asp Asp Lys His Asp Tyr
340 345 350

Tyr Ala Leu Gly Thr Tyr Asp Pro Val Lys Asn Lys Trp Thr Pro Asp
355 360 365

Asn Pro Asp Leu Asp Val Gly Ile Gly Leu Arg Leu Asp Tyr Gly Lys
370 375 380

Tyr Tyr Ala Ala Arg Thr Phe Tyr Asp Gln Asn Lys Gln Arg Arg Ile
385 390 395 400

Leu Trp Gly Trp Ile Gly Glu Thr Asp Leu Glu Ala Val Asp Leu Met
405 410 415

Lys Gly Trp Ala Ser Leu Gln Ala Ile Pro Arg Thr Ile Val Phe Asp
420 425 430

Lys Lys Thr Gly Thr Asn Val Leu Gln Arg Pro Glu Glu Glu Val Glu
435 440 445

Ser Trp Ser Ser Gly Asp Pro Ile Thr Gln Arg Arg Ile Phe Glu Pro
450 455 460

Gly Ser Val Val Pro Ile His Val Ser Gly Ala Thr Gln Leu Asp Ile
465 470 475 480

Thr Ala Ser Phe Glu Val Asp Glu Thr Leu Leu Glu Thr Thr Ser Glu
485 490 495

Ser His Asp Ala Gly Tyr Asp Cys Ser Asn Ser Gly Gly Ala Gly Thr
500 505 510

Arg Gly Ser Leu Gly Pro Phe Gly Leu Leu Val Val Ala Asp Glu Lys
515 520 525

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

Gly Lys Ala Lys Ala His Leu Cys Ala Tyr Gln Thr Arg Ser Ser Met
545 550 555 560

026172-005010PC - Sequence Listing_1.TXT

Ala Ser Gly Val Glu Lys Glu Val Tyr Gly Ser Ala Val Pro Val Leu
565 570 575

Asp Gly Glu Asn Tyr Ser Ala Arg Ile Leu Ile Asp His Ser Ile Val
580 585 590

Glu Ser Phe Ala Gln Ala Gly Arg Thr Cys Val Arg Ser Arg Asp Tyr
595 600 605

Pro Thr Lys Asp Ile Tyr Gly Ala Ala Arg Cys Phe Phe Phe Asn Asn
610 615 620

Ala Thr Glu Ala Ser Val Arg Ala Ser Leu Lys Ala Trp Gln Met Lys
625 630 635 640

Ser Phe Ile Arg Pro Tyr Pro Phe Ile Pro Asp Gln Lys Ser
645 650

<210> 25
<211> 690
<212> PRT
<213> Allium cepa

<400> 25
Met Ser Ser Asp Asp Leu Glu Ser Pro Pro Ser Ser Tyr Leu Pro Ile
1 5 10 15

Pro Pro Ser Asp Glu Phe His Asp Gln Pro Pro Pro Leu Arg Ser Trp
20 25 30

Leu Arg Leu Leu Ser Ile Pro Leu Ala Leu Met Phe Leu Leu Phe Leu
35 40 45

Ala Thr Phe Leu Ser Asn Leu Glu Ser Pro Pro Ser Asp Ser Gly Leu
50 55 60

Val Ser Asp Pro Val Thr Phe Asp Val Asn Pro Ala Val Val Arg Arg
65 70 75 80

Gly Lys Asp Ala Gly Val Ser Asp Lys Thr Ser Gly Val Asp Ser Gly
85 90 95

Phe Val Leu Asp Pro Val Ala Val Asp Ala Asn Ser Val Val Val His
100 105 110

Arg Gly Lys Asp Ala Gly Val Ser Asp Lys Thr Ser Gly Val Asp Ser
115 120 125

Gly Leu Leu Lys Asp Ser Pro Leu Gly Pro Tyr Pro Trp Thr Asn Gln
130 135 140

026172-005010PC - Sequence Listing_1.TXT

Met Leu Ser Trp Gln Arg Thr Gly Phe His Phe Gln Pro Val Lys Asn
 145 150 155 160

Trp Met Asn Asp Pro Asn Gly Pro Leu Tyr Tyr Lys Gly Trp Tyr His
 165 170 175

Phe Phe Tyr Gln Tyr Asn Pro Glu Gly Ala Val Trp Gly Asn Ile Ala
 180 185 190

Trp Gly His Ala Val Ser Arg Asp Leu Val His Trp Thr His Leu Pro
 195 200 205

Leu Ala Met Val Pro Asp Gln Trp Tyr Asp Ile Asn Gly Val Trp Thr
 210 215 220

Gly Ser Ala Thr Ile Leu Pro Asp Gly Gln Ile Val Met Leu Tyr Thr
 225 230 235 240

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

Asp Gln Ser Asp Thr Leu Leu Leu Arg Trp Lys Lys Ser Glu Ala Asn
 260 265 270

Pro Ile Leu Val Pro Pro Pro Gly Ile Gly Asp Lys Asp Phe Arg Asp
 275 280 285

Pro Thr Thr Ala Trp Tyr Glu Pro Ser Asp Asp Thr Trp Arg Ile Val
 290 295 300

Ile Gly Ser Lys Asp Ser Ser His Ser Gly Ile Ala Ile Val Tyr Ser
 305 310 315 320

Thr Lys Asp Phe Ile Asn Tyr Lys Leu Ile Pro Gly Ile Leu His Ala
 325 330 335

Val Glu Arg Val Gly Met Trp Glu Cys Val Asp Phe Tyr Pro Val Ala
 340 345 350

Thr Ala Asp Ser Ser His Ala Asn His Gly Leu Asp Pro Ser Ala Arg
 355 360 365

Pro Ser Pro Ala Val Lys His Val Leu Lys Ala Ser Met Asp Asp Asp
 370 375 380

Arg His Asp Tyr Tyr Ala Ile Gly Thr Tyr Asp Pro Ala Gln Asn Thr
 385 390 395 400

Trp Val Pro Asp Asp Ala Ser Val Asp Val Gly Ile Gly Leu Arg Tyr
 405 410 415

026172-005010PC - Sequence Listing_1.TXT

Asp Trp Gly Lys Phe Tyr Ala Ser Lys Thr Phe Tyr Asp His Ala Lys
 420 425 430

Lys Arg Arg Ile Leu Trp Ser Trp Ile Gly Glu Thr Asp Ser Glu Thr
 435 440 445

Ala Asp Ile Ala Lys Gly Trp Ala Ser Leu Gln Gly Val Pro Arg Thr
 450 455 460

Val Leu Leu Asp Val Lys Thr Gly Ser Asn Leu Ile Thr Trp Pro Val
 465 470 475 480

Val Glu Ile Glu Ser Leu Arg Thr Arg Pro Arg Asp Phe Ser Gly Ile
 485 490 495

Thr Val Asp Ala Gly Ser Thr Phe Lys Leu Asp Val Gly Gly Ala Ala
 500 505 510

Gln Leu Asp Ile Glu Ala Glu Phe Lys Ile Ser Ser Glu Glu Leu Glu
 515 520 525

Ala Val Lys Glu Ala Asp Val Ser Tyr Asn Cys Ser Ser Ser Gly Gly
 530 535 540

Ala Ala Glu Arg Gly Val Leu Gly Pro Phe Gly Leu Leu Val Leu Ala
 545 550 555 560

Asn Gln Asp Leu Thr Glu Gln Thr Ala Thr Tyr Phe Tyr Val Ser Arg
 565 570 575

Gly Met Asp Gly Gly Leu Asn Thr His Phe Cys Gln Asp Glu Lys Arg
 580 585 590

Ser Ser Lys Ala Ser Asp Ile Val Lys Arg Ile Val Gly His Ser Val
 595 600 605

Pro Val Leu Asp Gly Glu Ser Phe Ala Leu Arg Ile Leu Val Asp His
 610 615 620

Ser Ile Val Glu Ser Phe Ala Gln Gly Gly Arg Ala Ser Ala Thr Ser
 625 630 635 640

Arg Val Tyr Pro Thr Glu Ala Ile Tyr Asn Asn Ala Arg Val Phe Val
 645 650 655

Phe Asn Asn Ala Thr Gly Ala Lys Val Thr Ala Gln Ser Leu Lys Val
 660 665 670

Trp His Met Ser Thr Ala Ile Asn Glu Ile Tyr Asp Pro Ala Thr Ser
 675 680 685

Val Met
690

<210> 26
<211> 501
<212> PRT
<213> Beta vulgaris

<220>
<221> MOD_RES
<222> (382)..(382)
<223> Any amino acid

<400> 26
Leu Phe Tyr Gln Tyr Asn Pro Asn Gly Val Ile Trp Gly Pro Pro Val
1 5 10 15

Trp Gly His Ser Thr Ser Lys Asp Leu Val Asn Trp Val Pro Gln Pro
20 25 30

Leu Thr Met Glu Pro Glu Met Ala Ala Asn Ile Asn Gly Ser Trp Ser
35 40 45

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

Gly Leu Asp Pro Lys Tyr Glu Gln Val Gln Val Leu Ala Tyr Pro Lys
65 70 75 80

Asp Thr Ser Asp Pro Asn Leu Lys Glu Trp Phe Leu Ala Pro Gln Asn
85 90 95

Pro Val Met Phe Pro Thr Pro Gln Asn Gln Ile Asn Ala Thr Ser Phe
100 105 110

Arg Asp Pro Thr Thr Ala Trp Arg Leu Pro Asp Gly Val Trp Arg Leu
115 120 125

Leu Ile Gly Ser Lys Arg Gly Gln Arg Gly Leu Ser Leu Leu Phe Arg
130 135 140

Ser Arg Asp Phe Val His Trp Val Gln Ala Lys His Pro Leu Tyr Ser
145 150 155 160

Asp Lys Leu Ser Gly Met Trp Glu Cys Pro Asp Phe Phe Pro Val Tyr
165 170 175

Ala Asn Gly Asp Gln Met Gly Val Asp Thr Ser Ile Ile Gly Ser His
180 185 190

Val Lys His Val Leu Lys Asn Ser Leu Asp Ile Thr Lys His Asp Ile
195 200 205

026172-005010PC - Sequence Listing_1.TXT

Tyr Thr Ile Gly Asp Tyr Asn Ile Lys Lys Asp Ala Tyr Thr Pro Asp
 210 215 220
 Ile Gly Tyr Met Asn Asp Ser Ser Leu Arg Tyr Asp Tyr Gly Lys Tyr
 225 230 235 240
 Tyr Ala Ser Lys Thr Phe Phe Asp Asp Ala Lys Lys Glu Arg Ile Leu
 245 250 255
 Leu Gly Trp Ala Asn Glu Ser Ser Ser Val Glu Asp Asp Ile Lys Lys
 260 265 270
 Gly Trp Ser Gly Ile His Thr Ile Pro Arg Lys Ile Trp Leu Asp Lys
 275 280 285
 Leu Gly Lys Gln Leu Ile Gln Trp Pro Ile Ala Asn Ile Glu Lys Leu
 290 295 300
 Arg Gln Lys Pro Val Asn Ile Tyr Arg Lys Val Leu Lys Gly Gly Ser
 305 310 315 320
 Gln Ile Glu Val Ser Gly Ile Thr Ala Ala Gln Ala Asp Val Glu Ile
 325 330 335
 Ser Phe Lys Ile Lys Asp Leu Lys Asn Val Glu Lys Phe Asp Ala Ser
 340 345 350
 Trp Thr Ser Pro Gln Leu Leu Cys Ser Lys Lys Gly Ala Ser Val Lys
 355 360 365
 Gly Gly Leu Gly Pro Phe Gly Leu Leu Thr Leu Ala Ser Xaa Gly Leu
 370 375 380
 Glu Glu Tyr Thr Ala Val Phe Phe Arg Ile Phe Lys Ala Tyr Asp Asn
 385 390 395 400
 Lys Phe Val Val Leu Met Cys Ser Asp Gln Ser Arg Ser Ser Leu Asn
 405 410 415
 Pro Thr Asn Asp Lys Thr Thr Tyr Gly Thr Phe Val Asp Val Asn Pro
 420 425 430
 Ile Arg Glu Gly Leu Ser Leu Arg Val Leu Ile Asp His Ser Val Val
 435 440 445
 Glu Ser Phe Gly Ala Lys Gly Lys Asn Val Ile Thr Ala Arg Val Tyr
 450 455 460
 Pro Thr Leu Ala Ile Asn Glu Lys Ala His Leu Tyr Val Phe Asn Arg
 465 470 475 480

026172-005010PC - Sequence Listing_1.TXT

Gly Thr Ser Asn Val Glu Ile Thr Gly Leu Thr Ala Trp Ser Met Lys
485 490 495

Lys Ala Asn Ile Ala
500

<210> 27
<211> 518
<212> PRT
<213> Bifidobacterium breve

<400> 27
Met Thr Asp Phe Thr Pro Glu Thr Pro Val Leu Thr Pro Ile Arg Asp
1 5 10 15

His Ala Ala Glu Leu Ala Lys Ala Glu Ala Gly Val Ala Glu Met Ala
20 25 30

Ala Lys Arg Asn Asn Arg Trp Tyr Pro Lys Tyr His Ile Ala Ser Asn
35 40 45

Gly Gly Trp Ile Asn Asp Pro Asn Gly Leu Cys Phe Tyr Lys Gly Arg
50 55 60

Trp His Val Phe Tyr Gln Leu His Pro Tyr Gly Thr Gln Trp Gly Pro
65 70 75 80

Met His Trp Gly His Val Ser Ser Thr Asp Met Leu Asn Trp Lys Arg
85 90 95

Glu Pro Ile Met Phe Ala Pro Ser Leu Glu Gln Glu Lys Asp Gly Val
100 105 110

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

Tyr Thr Gly His Arg Trp Ala Asn Gly His Asp Asn Thr Gly Gly Asp
130 135 140

Trp Gln Val Gln Met Thr Ala Leu Pro Asp Asn Asp Glu Leu Thr Ser
145 150 155 160

Ala Thr Lys Gln Gly Met Ile Ile Asp Cys Pro Thr Asp Lys Val Asp
165 170 175

His His Tyr Arg Asp Pro Lys Val Trp Lys Thr Gly Asp Thr Trp Tyr
180 185 190

Met Thr Phe Gly Val Ser Ser Glu Asp Lys Arg Gly Gln Met Trp Leu
195 200 205

Phe Ser Ser Lys Asp Met Val Arg Trp Glu Tyr Glu Arg Val Leu Phe
210 215 220

026172-005010PC - Sequence Listing_1.TXT

Gln His Pro Asp Pro Asp Val Phe Met Leu Glu Cys Pro Asp Phe Phe
 225 230 235 240

Pro Ile Lys Asp Lys Asp Gly Asn Glu Lys Trp Val Ile Gly Phe Ser
 245 250 255

Ala Met Gly Ser Lys Pro Ser Gly Phe Met Asn Arg Asn Val Asn Asn
 260 265 270

Ala Gly Tyr Met Ile Gly Thr Trp Glu Pro Gly Gly Glu Phe Lys Pro
 275 280 285

Glu Thr Glu Phe Arg Leu Trp Asp Cys Gly His Asn Tyr Tyr Ala Pro
 290 295 300

Gln Ser Phe Asn Val Asp Gly Arg Gln Ile Val Tyr Gly Trp Met Ser
 305 310 315 320

Pro Phe Val Gln Pro Ile Pro Met Glu Asp Asp Gly Trp Cys Gly Gln
 325 330 335

Leu Thr Leu Pro Arg Glu Ile Thr Leu Asp Asp Asp Gly Asp Val Val
 340 345 350

Thr Ala Pro Val Ala Glu Met Glu Gly Leu Arg Glu Asp Thr Leu Asp
 355 360 365

His Gly Ser Ile Thr Leu Asp Met Asp Gly Glu Gln Val Ile Ala Asp
 370 375 380

Asp Ala Glu Ala Val Glu Ile Glu Met Thr Ile Asp Leu Ala Ala Ser
 385 390 395 400

Thr Ala Asp Arg Ala Gly Leu Lys Ile His Ala Thr Glu Asp Gly Ala
 405 410 415

Tyr Thr Tyr Val Ala Tyr Asp Asp Gln Ile Gly Arg Val Val Val Asp
 420 425 430

Arg Gln Ala Met Ala Asn Gly Asp His Gly Tyr Arg Ala Ala Pro Leu
 435 440 445

Thr Asp Ala Glu Leu Ala Ser Gly Lys Leu Asp Leu Arg Val Phe Val
 450 455 460

Asp Arg Gly Ser Val Glu Val Tyr Val Asn Gly Gly His Gln Val Leu
 465 470 475 480

Ser Ser Tyr Ser Tyr Ala Ser Glu Gly Pro Arg Ala Ile Lys Leu Val
 485 490 495

026172-005010PC - Sequence Listing_1.TXT

Ala Glu Phe Gly Asn Leu Lys Val Glu Ser Leu Lys Leu His His Met
500 505 510

Lys Ser Ile Gly Leu Glu
515

<210> 28

<211> 532

<212> PRT

<213> Saccharomyces cerevisiae

<400> 28

Met Leu Leu Gln Ala Phe Leu Phe Leu Leu Ala Gly Phe Ala Ala Lys
1 5 10 15

Ile Ser Ala Ser Met Thr Asn Glu Thr Ser Asp Arg Pro Leu Val His
20 25 30

Phe Thr Pro Asn Lys Gly Trp Met Asn Asp Pro Asn Gly Leu Trp Tyr
35 40 45

Asp Glu Lys Asp Ala Lys Trp His Leu Tyr Phe Gln Tyr Asn Pro Asn
50 55 60

Asp Thr Val Trp Gly Thr Pro Leu Phe Trp Gly His Ala Thr Ser Asp
65 70 75 80

Asp Leu Thr Asn Trp Glu Asp Gln Pro Ile Ala Ile Ala Pro Lys Arg
85 90 95

Asn Asp Ser Gly Ala Phe Ser Gly Ser Met Val Val Asp Tyr Asn Asn
100 105 110

Thr Ser Gly Phe Phe Asn Asp Thr Ile Asp Pro Arg Gln Arg Cys Val
115 120 125

Ala Ile Trp Thr Tyr Asn Thr Pro Glu Ser Glu Glu Gln Tyr Ile Ser
130 135 140

Tyr Ser Leu Asp Gly Gly Tyr Thr Phe Thr Glu Tyr Gln Lys Asn Pro
145 150 155 160

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

Tyr Glu Pro Ser Gln Lys Trp Ile Met Thr Ala Ala Lys Ser Gln Asp
180 185 190

Tyr Lys Ile Glu Ile Tyr Ser Ser Asp Asp Leu Lys Ser Trp Lys Leu
195 200 205

026172-005010PC - Sequence Listing_1.TXT

Glu Ser Ala Phe Ala Asn Glu Gly Phe Leu Gly Tyr Gln Tyr Glu Cys
 210 215 220

Pro Gly Leu Ile Glu Val Pro Thr Glu Gln Asp Pro Ser Lys Ser Tyr
 225 230 235 240

Trp Val Met Phe Ile Ser Ile Asn Pro Gly Ala Pro Ala Gly Gly Ser
 245 250 255

Phe Asn Gln Tyr Phe Val Gly Ser Phe Asn Gly Thr His Phe Glu Ala
 260 265 270

Phe Asp Asn Gln Ser Arg Val Val Asp Phe Gly Lys Asp Tyr Tyr Ala
 275 280 285

Leu Gln Thr Phe Phe Asn Thr Asp Pro Thr Tyr Gly Ser Ala Leu Gly
 290 295 300

Ile Ala Trp Ala Ser Asn Trp Glu Tyr Ser Ala Phe Val Pro Thr Asn
 305 310 315 320

Pro Trp Arg Ser Ser Met Ser Leu Val Arg Lys Phe Ser Leu Asn Thr
 325 330 335

Glu Tyr Gln Ala Asn Pro Glu Thr Glu Leu Ile Asn Leu Lys Ala Glu
 340 345 350

Pro Ile Leu Asn Ile Ser Asn Ala Gly Pro Trp Ser Arg Phe Ala Thr
 355 360 365

Asn Thr Thr Leu Thr Lys Ala Asn Ser Tyr Asn Val Asp Leu Ser Asn
 370 375 380

Ser Thr Gly Thr Leu Glu Phe Glu Leu Val Tyr Ala Val Asn Thr Thr
 385 390 395 400

Gln Thr Ile Ser Lys Ser Val Phe Ala Asp Leu Ser Leu Trp Phe Lys
 405 410 415

Gly Leu Glu Asp Pro Glu Glu Tyr Leu Arg Met Gly Phe Glu Val Ser
 420 425 430

Ala Ser Ser Phe Phe Leu Asp Arg Gly Asn Ser Lys Val Lys Phe Val
 435 440 445

Lys Glu Asn Pro Tyr Phe Thr Asn Arg Met Ser Val Asn Asn Gln Pro
 450 455 460

Phe Lys Ser Glu Asn Asp Leu Ser Tyr Tyr Lys Val Tyr Gly Leu Leu
 465 470 475 480

026172-005010PC - Sequence Listing_1.TXT

Asp Gln Asn Ile Leu Glu Leu Tyr Phe Asn Asp Gly Asp Val Val Ser
485 490 495

Thr Asn Thr Tyr Phe Met Thr Thr Gly Asn Ala Leu Gly Ser Val Asn
500 505 510

Met Thr Thr Gly Val Asp Asn Leu Phe Tyr Ile Asp Lys Phe Gln Val
515 520 525

Arg Glu Val Lys
530

<210> 29

<211> 512

<212> PRT

<213> *Zymomonas mobilis*

<400> 29

Met Glu Ser Pro Ser Tyr Lys Asn Leu Ile Lys Ala Glu Asp Ala Gln
1 5 10 15

Lys Lys Ala Gly Lys Arg Leu Leu Ser Ser Glu Trp Tyr Pro Gly Phe
20 25 30

His Val Thr Pro Leu Thr Gly Trp Met Asn Asp Pro Asn Gly Leu Ile
35 40 45

Phe Phe Lys Gly Glu Tyr His Leu Phe Tyr Gln Tyr Tyr Pro Phe Ala
50 55 60

Pro Val Trp Gly Pro Met His Trp Gly His Ala Lys Ser Arg Asp Leu
65 70 75 80

Val His Trp Glu Thr Leu Pro Val Ala Leu Ala Pro Gly Asp Leu Phe
85 90 95

Asp Arg Asp Gly Cys Phe Ser Gly Cys Ala Val Asp Asn Asn Gly Val
100 105 110

Leu Thr Leu Ile Tyr Thr Gly His Ile Val Leu Ser Asn Asp Ser Pro
115 120 125

Asp Ala Ile Arg Glu Val Gln Cys Met Ala Thr Ser Ile Asp Gly Ile
130 135 140

His Phe Gln Lys Glu Gly Ile Val Leu Glu Lys Ala Pro Met Pro Gln
145 150 155 160

Val Ala His Phe Arg Asp Pro Arg Val Trp Lys Glu Asn Asp His Trp
165 170 175

Phe Met Val Val Gly Tyr Arg Thr Asp Asp Glu Lys His Gln Gly Ile
180 185 190

026172-005010PC - Sequence Listing_1.TXT

Gly His Val Ala Leu Tyr Arg Ser Glu Asn Leu Lys Asp Trp Ile Phe
195 200 205

Val Lys Thr Leu Leu Gly Asp Asn Ser Gln Leu Pro Leu Gly Lys Arg
210 215 220

Ala Phe Met Trp Glu Cys Pro Asp Phe Phe Ser Leu Gly Asn Arg Ser
225 230 235 240

Val Leu Met Phe Ser Pro Gln Gly Leu Lys Ala Ser Gly Tyr Lys Asn
245 250 255

Arg Asn Leu Phe Gln Asn Gly Tyr Ile Leu Gly Lys Trp Gln Ala Pro
260 265 270

Gln Phe Thr Pro Glu Thr Ser Phe Gln Glu Leu Asp Tyr Gly His Asp
275 280 285

Phe Tyr Ala Ala Gln Arg Phe Glu Ala Lys Asp Gly Arg Gln Ile Leu
290 295 300

Ile Ala Trp Phe Asp Met Trp Glu Asn Gln Lys Pro Ser Gln Arg Asp
305 310 315 320

Gly Trp Ala Gly Cys Met Thr Leu Pro Arg Lys Leu Asp Leu Ile Asp
325 330 335

Asn Lys Ile Val Met Thr Pro Val Arg Glu Met Glu Ile Leu Arg Gln
340 345 350

Ser Glu Lys Ile Glu Ser Val Val Thr Leu Ser Asp Ala Glu His Pro
355 360 365

Phe Thr Met Asp Ser Pro Leu Gln Glu Ile Glu Leu Ile Phe Asp Leu
370 375 380

Glu Lys Ser Ser Ala Tyr Gln Ala Gly Leu Ala Leu Arg Cys Asn Gly
385 390 395 400

Lys Gly Gln Glu Thr Leu Leu Tyr Ile Asp Arg Ser Gln Asn Arg Ile
405 410 415

Ile Leu Asp Arg Asn Arg Ser Gly Gln Asn Val Lys Gly Ile Arg Ser
420 425 430

Cys Pro Leu Pro Asn Thr Ser Lys Val Arg Leu His Ile Phe Leu Asp
435 440 445

Arg Ser Ser Ile Glu Ile Phe Val Gly Asp Asp Gln Thr Gln Gly Leu
450 455 460

026172-005010PC - Sequence Listing_1.TXT

Tyr Ser Ile Ser Ser Arg Ile Phe Pro Asp Lys Asp Ser Leu Lys Gly
465 470 475 480

Arg Leu Phe Ala Ile Glu Gly Tyr Ala Val Phe Asp Ser Phe Lys Arg
485 490 495

Trp Thr Leu Gln Asp Ala Asn Leu Ala Ala Phe Ser Ser Asp Ala Cys
500 505 510

<210> 30
<211> 987
<212> DNA
<213> Chlorella luteoviridis

```
<400> 30
tggtgaagaa tgagccggcg acttatagga agtggcttgg ttaaggatac tttccgaagc      60
ctaagcgaaa gcaagttgta acaatagcga tatacctctt tgtaggtcag tcacttctta      120
tggacccgaa cccgggtgat ctaaccatga ccaggatgaa gcttgggtaa caccaagtga      180
aggtccgaac tcttcgatct ttaaaaatcg tgagatgagt tatggttagg ggtaaactctg      240
gcagttttgc cccgcaaaag ggtaaccttt tgtaattact gactcataac ggtgaagcct      300
aaggcgttag ctatggtaat accgtgggaa gtttcaatac cttcttgcac attttttatt      360
tgcaccttta gtgcaaacag tgtaaagaaa gcgttttgaa accccttaac gactaatttt      420
ttgcttttgc aagaacgtca gcactcacca atacactttc cgtttttttc ttttattaat      480
taaagcaaca taaaaatata ttttatagct ttaatcataa aactatgtta gcacttcgtg      540
ctaattgtgct aatgtgctaa tcaaatgaaa agtgttctta aaagtgagtt gaaggtagag      600
tctaattcttg cctgaaaggg caagctgcac attttttttt gaatgtgcaa caatggaaat      660
gccaatcgaa ctcgagagcta gctggttctc cccgaaatgt gttgaggcgc agcgattcat      720
gattagtacg gtgtaggggt aaagcactgt ttcggtgcgg gctgtgaaaa cggtagcaaa      780
tcgtggcaaa ctaagaatac tacgcttgta taccatggat cagtgaact atgggggata      840
agctccatag tcaagagggg aacagcccag atcaccagtt aaggcccaa aatgacagct      900
aagtggcaaa ggaggtgaaa gtgcagaaac aaccaggagg ttgcccaga agcagccatc      960
ctttaagag tgcgtaatag ctactg      987
```

<210> 31
<211> 1412
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

```
<400> 31
gaattcgagt ttaggtccag cgtccgtggg gggggacggg ctgggagctt gggccgggaa      60
gggcaagacg atgcagtccc tctggggagt cacagccgac tgtgtgtgtt gcactgtgcg      120
```

026172-005010PC - Sequence Listing_1.TXT

gccccgagca ctcacacgca aaatgcctgg ccgacaggca ggccctgtcc agtgcaacat	180
ccacgggtccc tctcatcagg ctcaccttgc tcattgacat aacggaatgc gtaccgctct	240
ttcagatctg tccatccaga gaggggagca ggctccccac cgacgctgtc aaacttgctt	300
cctgcccac cgaaaacatt attgtttgag gggggggggg gggggggcaga ttgcatggcg	360
ggatatctcg tgaggaacat cactgggaca ctgtggaaca cagtgagtgc agtatgcaga	420
gcatgtatgc taggggtcag cgcaggaagg gggcctttcc cagtctccca tgccactgca	480
ccgtatccac gactcaccag gaccagcttc ttgatcggct tccgctcccg tggacaccag	540
tgtgtagcct ctggactcca ggtatgcgtg caccgcaaag gccagccgat cgtgccgatt	600
cctgggggtgg aggatatgag tcagccaact tggggctcag agtgcacact ggggcacgat	660
acgaaacaac atctacaccg tgtcctccat gctgacacac cacagcttcg ctccacctga	720
atgtggggcg atggggccga atcacagcca atgtcgtgc tgccataatg tgatccagac	780
cctctccgcc cagatgccga gcggtcgtg ggcgtgaat agattcctgt ttcgatcact	840
gtttgggtcc tttccttttc gtctcggatg cgcgtctcga aacaggctgc gtcgggcttt	900
cggatccctt ttgctccctc cgtcaccatc ctgcgcgcgg gcaagttgct tgaccctggg	960
ctggtaccag ggttgagggg tattaccgcg tcaggccatt ccagcccgg attcaattca	1020
aagtctgggc caccaccctc cgccgctctg tctgatcact ccacattcgt gcatacacta	1080
cgttcaagtc ctgatccagg cgtgtctcgg gacaagggtg gcttgagttt gaatctcaag	1140
gaccactcc agcacagctg ctggttgacc ccgccctgc aactccctac catgtctgct	1200
ggtaggtcca gggatctttg ccatgcacac aggaccccg ttgtgggggt ccccggtgca	1260
tgctgtcgt gtgcaggcgc cgggtgtggg cctgggcccc gcgggagctc aactcctccc	1320
catatgcctg ccgtccctcc caccaccgc gacctggccc cttttgcaga ggaaggcgaa	1380
gtcagcgcca tcgtgtgcga taatggatcc gg	1412

<210> 32

<211> 1627

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 32

gaattcggcc ttgagtttag gtccagcgtc cgtggggggg gcgtgagact cccccctgac	60
cttcgtatgg cagggactcc tacttgccaa gtaatcagtt gacaatgcca cttcaatgct	120
cgttggtgta cactgacgcg ggtctaacat actgggaagc atgaattgcc gacatggact	180
cagttggaga cagtaacagc tctttgtgtt ctatcttcag gaacacattt ggcagcgcac	240
ccatacagtg gcgcacacgc agctgtacct gatgtggctc tattcccaca tgtttcaact	300
tgatccaaaa gtcactcaga ctctcagcag ctagacttga tcgcatcttt ggccatgaag	360

026172-005010PC - Sequence Listing_1.TXT

atgcttgatgcg aactctagga atgggacgag aaaagagcct gctctgatcg gatatttcca	420
ttctctggat gggactgaga tgattctgaa gaaatgctgc tcgacttatt tggaagaaca	480
gcacctgacg catgctttga ggctgctgtg gctgggatgt gctgtatttg tcagcattga	540
gcatctacgg gtagatggcc ataaccacgc gctgcctatc atgcggtggg ttgtgtggaa	600
aacgtacaat ggacagaaat caatcccatt gcgagcctag cgtgcagcca tgcgctccct	660
ctgtagcccc gctccaagac aaagccagcc aatgccagaa cccacataga gagggatatct	720
tcctaataacg ctcgcccacg atttctctca aattaactat aatgccttga ttgtggagtt	780
ggctttggct tgcagctgct cgcgctggca cttttgtagg cagcacaggg tatgccagcg	840
ccgaactttg tgcccttgag caggccacaa gggcacaaga ctacaccatg cagctgggat	900
acttggaaat gataccattc ttaccaagca aggacagca cagcctgcac cgactcactt	960
tgcttgagcg gggcacagcg ccgcgactga tcctgcgagc tgtggggagt tccgactgtt	1020
ctggacctcg gtctctgaaa gatgtgtacg atgggatcaa gtcattcaag tatgctcttc	1080
acatgagcaa tcgggggaga cacgggtggc ctaaagggtg tcatctgatt caagtgtagt	1140
ggggggggtg tgttttgtccc ggggcgcccc ccgctccccg accccggaga agggccccag	1200
aggactcggc cgccacagaa ggaataaccg ggcgtggctc ggccctgcgc ctccctcttt	1260
caatatttca cctggtgttc agtgcacgga cacgtaaaga actagataca atggccgagg	1320
gaaagacggt gagagcttgg cgttggtgga ccgggcagca tcagaaactc ctcttccccg	1380
cccgccttga aactcactgt aactccctcc tcttccccct cgcagcatct gtctatcgtt	1440
atcgtgagtg aaagggactg ccatgtgtcg ggctggtgac cacggctcggc tcgggcgctg	1500
ctgcccgcgt cgccaacgtt ccctgcaaac gccgcgcagc cgtccctttt tctgccgccg	1560
ccccaccccc tcgctcccc cttcaatcac accgcagtgc ggacatgtcg attccggcaa	1620
gtccacc	1627

<210> 33

<211> 570

<212> DNA

<213> Chlorella protothecoides

<400> 33

gaattccctg caggaagaag gccggcagca gctggtactt gtccttcacc tccttgatcg	60
gctgggtgag cttggccggg tcgcagtcgt cgatgccggc atcgcccagc acgctgtgcg	120
gggagccggc atcgacaacc ttggcactgc tcaccttggg caccggcatg gggcatggc	180
gctgcagacc agcggcctgt cagcatgctg caggcatctg tgttttgtag tagatacttt	240
ctgatgcac accacacgtt tggaagggtc ccaagcccct tcaacagtct cgacatatga	300
cactcgcgcc ctcttccctg tcccgtggcc tgatgagggt acgcaggtac cgcagctgcg	360
ccccgtcccg ccagttgccc tggccccgcc gggccaatc tgttcattgc cgctccctgg	420
cagccgtgaa cttcacacta ccgctctctg tgaccttcag cacagcagga atcgccattt	480
caccggcggt cgttgctgcg gagcctcagc tgatctcgcc tgcgagacct cacagtttga	540

atttgcggtc cccacacaac ctctgacgcc 570

<210> 34
 <211> 568
 <212> DNA
 <213> Chlorella protothecoides

<220>
 <221> modified_base
 <222> (133)..(133)
 <223> a, c, t, g, unknown or other

<400> 34
 gaattccctc aggaagaagg ccggcagcag ctggtacttg tccttcacct ccttgatcgg 60
 ctgggtgagc ttcgaggat cgcagtcgtc gatgccggca tcgcccagca cgctgtgcgg 120
 ggagccggca tcnacaacct tggcactgct ccccttgggtc accggcatgg ggtcatggcg 180
 ctgcagccca gcggcctgtc agcatgctgc aggcattctgt gtattgtagt aggtacttcc 240
 tgatgcatca acacacgttt ggaagctccc caagcccctt caacagtctc gacgtatgac 300
 actcgcgccc tcttcctcgc cccgtggcct gatgagggta cgcaggtacc acagctgcgc 360
 cccgtcccgc cagttgccct ggcccggccg ggcccaatct gttcattgcc gctccctggc 420
 agccgtgaac tcacattacc gctctctgtg accttcagca cagcaggaat cgccatttca 480
 ccggcggtcg ttgctgcgga gcctcagctg atctcgccctg cgagacccca cagtttgaat 540
 ttgcggtccc cacacaacct ctgacgcc 568

<210> 35
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 35
 tgacctaggt gattaattaa ctcgaggcag cagcagctcg gatagtatcg 50

<210> 36
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 36
 ctacgagctc aagctttcca tttgtgttcc catcccacta ctcc 45

<210> 37
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 37

gatcagaatt ccgcctgcaa cgcaagggca gc

32

<210> 38

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 38

gcatactagt ggcgggacgg agagagggcg

30

<210> 39

<211> 1568

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 39

gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	60
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	120
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	240
cacaggccac tcgagcttgt gatcgactc cgctaagggg ggcctcttc ctcttcgttt	300
cagtcacaac ccgcaaacgg cgcgccatat caatgattga acaagatgga ttgcacgcag	360
gttctccggc cgcttgggtg gagaggctat tcggctatga ctgggcacaa cagacaatcg	420
gctgctctga tgccgccgtg ttccggctgt cagcgcaggg gcgcccgggt ctttttgtca	480
agaccgacct gtccgggtgcc ctgaatgaac tgcaggacga ggcagcgcg ctatcgtggc	540
tggccacgac gggcgttcct tgcgcagctg tgctcgacgt tgtcactgaa gcgggaaggg	600
actggctgct attgggcgaa gtgccggggc aggatctcct gtcactcac cttgctcctg	660
ccgagaaagt atccatcatg gctgatgcaa tgcggcggct gcatacgctt gatccggcta	720
cctgcccatt cgaccaccaa gcgaaacatc gcatcgagcg agcacgtact cggatggaag	780
ccggtcttgt cgatcaggat gatctggacg aagagcatca ggggctcgcg ccagccgaac	840
tgttcgccag gctcaaggcg cgcattgccg acggcgagga tctcgtcgtg acccatggcg	900
atgcctgctt gccgaatatc atggtggaaa atggccgctt ttctggattc atcgactgtg	960
gccggctggg tgtggcggac cgctatcagg acatagcggt ggctaccggt gatattgctg	1020
aagagcttgg cggcgaatgg gctgaccgct tcctcgtgct ttacgggtatc gccgctcccg	1080
attcgcagcg catcgcttc tatcgcttc ttgacgagtt cttctaagat ctgtcgatcg	1140

026172-005010PC - Sequence Listing_1.TXT

acaagtgact cgaggcagca gcagctcgga tagtatcgac acactctgga cgctgggtcgt	1200
gtgatggact gttgccgcca cacttgctgc cttgacctgt gaatatccct gccgctttta	1260
tcaaacagcc tcagtgtgtt tgatcttggt tgtacgcgct tttgcgagtt gctagctgct	1320
tgtgctatatt gcgaataacca ccccagcat ccccttcctt cgtttcatat cgcttgcatc	1380
ccaaccgcaa cttatctacg ctgtcctgct atccctcagc gctgctcctg ctcctgctca	1440
ctgcccctcg cacagccttg gtttgggctc cgctgtatt ctcctggtag tgcaacctgt	1500
aaaccagcac tgcaatgctg atgcacggga agtagtggga tgggaacaca aatggaaagc	1560
ttgagctc	1568

<210> 40

<211> 2571

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> modified_base

<222> (997)..(999)

<223> a, c, t, g, unknown or other

<400> 40

gaattccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgccgc atgcttgctg tggtagggct gggcagtgct	120
gccatgctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgcat	180
gccgggcaat gcgcatgggt gcaagagggc ggagcactt gctggacgtg ccgcggtgcc	240
tccagggtgg tcaatcgcgg cagccagagg gatttcagat gatcgcgct acaggttgag	300
cagcagtgct agcaaaggta gcagtttgcc agaatgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcatgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaactaac catagctgat caacactgca atcatcggcg gctgatgcaa	540
gcatcctgca agacacatgc tgtgcgatgc tgcgctgctg cctgctgcgc acgccgttga	600
gttggcagca gctcagccat gcactggatc aggctgggct gccactgcaa tgtgggtggat	660
aggatgcaag tggagcgaat accaaaccct ctggctgctt gctgggttgc atggcatcgc	720
accatcagca ggagcgcgtg cgaagggact ggcccatgac acgccatgcc aaaccggagc	780
gcaccgagtg tccacactgt caccaggccc gcaagctttg cagaaccatg ctcattggacg	840
catgtagcgc tgacgtccct tgacggcgct cctctcgggt gtgggaaacg caatgcagca	900
caggcagcag aggcggcggc agcagagcgg cggcagcagc ggccggggcc acccttcttg	960
cggggctcgc cccagccag cggtagtgcg ctgatcnnc caaacgagtt cacattcatt	1020

026172-005010PC - Sequence Listing_1.TXT

tcgagcctgg agaagcgagg ctggggcctt tgggctggtg cagcccgcaa tggaatgcgg	1080
gaccgccagg ctagcagcaa aggcgcctcc cctactccgc atcgatgttc catagtgcac	1140
tggactgcat ttgggtgggg cgcccggtg tttctttcgt gttgcaaaac gcgccacgtc	1200
agcaacctgt cccgtgggtc ccccgtgccg atgaaatcgt gtgcacgccg atcagctgat	1260
tgcccggctc gcgaagtagg cgccctcttt ctgctcgccc tctctccgtc ccgccactag	1320
tggcgcgcca tatcaatgat tgaacaagat ggattgcacg caggttctcc ggccgcttgg	1380
gtggagagggc tattcggcta tgactgggca caacagacaa tcggctgctc tgatgccgcc	1440
gtgttcgggc tgtcagcgca gggcgccccg gttctttttg tcaagaccga cctgtccggt	1500
gccctgaatg aactgcagga cgaggcagcg cggctatcgt ggctggccac gacgggcgtt	1560
ccttgcgag ctgtgctcga cgttgtcact gaagcgggaa gggactggct gctattgggc	1620
gaagtgccgg ggcaggatct cctgtcatct caccttgctc ctgccgagaa agtatccatc	1680
atggctgatg caatgcggcg gctgcatacg cttgatccgg ctacctgcc attcgaccac	1740
caagcgaaac atcgcatcga gcgagcacgt actcggatgg aagccggtct tgtcgatcag	1800
gatgatctgg acgaagagca tcaggggctc gcgccagccg aactgttcgc caggctcaag	1860
gcgcgcatgc ccgacggcga ggatctcgtc gtgacccatg gcgatgcctg cttgccgaat	1920
atcatggtgg aaaatggccg cttttctgga ttcacgact gtggccggct ggggtgtggcg	1980
gaccgctatc aggacatagc gttggctacc cgtgatattg ctgaagagct tggcggcgaa	2040
tgggctgacc gcttcctcgt gctttacggt atcgccgctc ccgattcgca gcgcatcgcc	2100
ttctatcgcc ttcttgacga gttctttctaa gatctgtcga tcgacaagt actcgaggca	2160
gcagcagctc ggatagtatc gacacactct ggacgctggt cgtgtgatgg actgttgccg	2220
ccacacttgc tgccttgacc tgtgaatatc cctgccgctt ttatcaaaca gcctcagtgt	2280
gtttgatctt gtgtgtacgc gcttttgca gttgctagct gcttgtgcta tttgcgaata	2340
ccacccccag catccccctt cctcgtttca tatcgcttgc atcccaaccg caacttatct	2400
acgctgtcct gctatccctc agcgtgctc ctgctcctgc tctactgccc tcgcacagcc	2460
ttggtttggg ctccgcctgt attctcctgg tactgcaacc tgtaaaccag cactgcaatg	2520
ctgatgcacg ggaagtagtg ggatgggaac acaaatggaa agcttgagct c	2571

<210> 41

<211> 2550

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> modified_base

<222> (997)..(999)

<223> a, c, t, g, unknown or other

026172-005010PC - Sequence Listing_1.TXT

<400> 41

gaattccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgcctgccgc atgcttgtgc tggtagaggct gggcagtgt	120
gccatgctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgc	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggacgtg ccgcggtgcc	240
tccagggtgg tcaatcgcg gaggcagagg gatttcagat gatcgcgct acagggtgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaattgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaactaac catagctgat caacactgca atcatcggcg gctgatgcaa	540
gcatcctgca agacacatgc tgtgcgatgc tgcgctgctg cctgctgcgc acgccgttga	600
gttggcagca gctcagccat gcaactggatc aggcctgggct gccactgcaa tgtggtggat	660
aggatgcaag tggagcgaat accaaaccct ctggctgctt gctgggttgc atggcatcgc	720
accatcagca ggagcgcatg cgaagggact ggccccatgc acgccatgcc aaaccggagc	780
gcaccgagtg tccacactgt caccaggccc gcaagctttg cagaaccatg ctcatggacg	840
catgtagcgc tgacgtccct tgacggcgct cctctcgggt gtgggaaacg caatgcagca	900
caggcagcag aggcggcggc agcagagcgg cggcagcagc ggcggggggc acccttcttg	960
cggggtcgcg cccagccag cggatgatgc ctgacnnnc caaacgagtt cacattcatt	1020
tgcagcctgg agaagcgagg ctggggcctt tgggctggtg cagcccgcaa tggaatgcgg	1080
gaccgccagg ctagcagcaa aggcgcctcc cctactccgc atcgatgttc catagtgc	1140
tggactgcat ttgggtgggg cggccggctg tttctttcgt gttgcaaac gcgccacgtc	1200
agcaacctgt cccgtgggtc ccccgctgcc atgaaatcgt gtgcacgccg atcagctgat	1260
tgcccggtc gcgaagtagg cgccctctt ctgctcgc tctctccgtc ccgccactag	1320
tggcgcgcca tatcaatgat cgagcaggac ggcctccacg ccggtcccc cgccgcctgg	1380
gtggagcgcc tgttcggcta cgactgggccc cagcagacca tcggctgctc cgacgccgcc	1440
gtgttccgcc tgtccgcccc gggccgcccc gtgctgttcg tgaagaccga cctgtccggc	1500
gccctgaacg agctgcagga cgaggccgc cgctgtcct ggctggccac caccggcgtg	1560
ccctgcgcg ccgtgctgga cgtggtgacc gaggccggcc gcgactggct gctgctgggc	1620
gagggtgccc gccaggacct gctgtcctcc cacctggccc ccgccagaa ggtgtccatc	1680
atggccgacg ccatgcgccg cctgcacacc ctggacccc ccacctgccc cttcgaccac	1740
caggccaagc accgcatcga gcgcgccccg acccgcatgg aggcggcct ggtggaccag	1800
gacgacctgg acgaggagca ccagggcctg gccccgccc agctgttcgc ccgcctgaag	1860
gccccgatgc ccgacggcga ggacctggtg gtgaccacg gcgacgcctg cctgcccac	1920
atcatggtgg agaagggccg cttctccggc ttcacgact gcggccgcct gggcgtggcc	1980
gaccgctacc aggacatcgc cctggccacc cgcgacatcg ccgaggagct gggcggcgag	2040

026172-005010PC - Sequence Listing_1.TXT

tgggccgacc gcttcctggt gctgtacggc atcgccgccc cgcactccca gcgcatcgcc	2100
ttctaccgcc tgctggacga gttcttctga ctcgaggcag cagcagctcg gatagtatcg	2160
acacactctg gacgctggtc gtgtgatgga ctgttgccgc cacacttgct gccttgacct	2220
gtgaatatcc ctgccgcttt tatcaaacag cctcagtgtg tttgatcttg tgtgtacgcg	2280
cttttgcgag ttgctagctg cttgtgctat ttgcgaatac cccccccagc atcccccttc	2340
ctcgtttcat atcgcttgca tcccaaccgc aacttatcta cgctgtcctg ctatccctca	2400
gcgctgctcc tgctcctgct cactgcccct cgcacagcct tggtttgggc tccgcctgta	2460
ttctcctggt actgcaacct gtaaaccagc actgcaatgc tgatgcacgg gaagtagtgg	2520
gatgggaaca caaatggaaa gcttgagctc	2550

<210> 42

<211> 1547

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 42

gaatttccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	60
tcccggcgct gcatgcaaca cccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	120
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	240
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	300
cagtcacaac ccgcaaacgg cgcgccatat caatgatcga gcaggacggc ctccacgccg	360
gctccccgcg cgcttggtg gagcgctgt tcggctacga ctgggcccag cagaccatcg	420
gctgctccga cgccgccgtg ttccgcctgt ccgcccaggg ccgccccgtg ctgttcgtga	480
agaccgacct gtccggcgcc ctgaacgagc tgcaggacga ggccgcccgc ctgtcctggc	540
tggccaccac cggcgtgccc tgcgcccgcc tgctggacgt ggtgaccgag gccggccgcg	600
actggctgct gctgggcgag gtgcccggcc aggacctgct gtcctccac ctggcccccg	660
ccgagaaggt gtccatcatg gccgacgcca tgcgccgcct gcacaccctg gaccccgcca	720
cctgccccct cgaccaccag gccaagcacc gcatcgagcg cgcccgcacc cgcattggagg	780
ccggcctggt ggaccaggac gacctggacg aggagcacca gggcctggcc cccgccgagc	840
tgttcgcccc cctgaaggcc cgcattgccc acggcgagga cctggtggtg acccacggcg	900
acgcctgcct gcccaacatc atggtggaga acggccgctt ctccggcttc atcgactgcg	960
gccgcctggg cgtggccgac cgctaccagg acatcgccct ggccaccgcg gacatcgccg	1020
aggagctggg cggcgagtgg gccgaccgct tcctggtgct gtacggcatc gccgcccccg	1080
actcccagcg catcgcttc taccgcctgc tggacgagtt cttctgactc gaggcagcag	1140

026172-005010PC - Sequence Listing_1.TXT

cagctcggat agtatcgaca cactctggac gctggtcgtg tgatggactg ttgccgccac	1200
acttgctgcc ttgacctgtg aatatccctg ccgcttttat caaacagcct cagtgtgttt	1260
gatcttgtgt gtacgcgctt ttgcgagttg ctagctgctt gtgctatttg cgaataccac	1320
ccccagcatc cccttccttc gtttcatatc gcttgcatcc caaccgcaac ttatctacgc	1380
tgtcctgcta tccctcagcg ctgctcctgc tcctgctcac tgcccctcgc acagccttgg	1440
tttgggctcc gcctgtattc tcctgggtact gcaacctgta aaccagcact gcaatgctga	1500
tgcacgggaa gtagtgggat gggaacacaa atggaaagct tgagctc	1547

<210> 43
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 43	
gccgcgactg gctgctgctg g	21

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

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 44	
aggtcctcgc cgtcgggcat g	21

<210> 45
 <211> 1292
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 45	
atcaaaggca tagattcaca tttgttggca ttgcagagca atcatcgcg aggacgaaca	60
tcgctcacca agcacgtact gggcatccgg aggcctccgc aaattcctgc aacaggactc	120
gctgatcagt tcgccaagg tctacgacgc tccctatcgg cgctagactt caacacatat	180
ttcactgtca cagcctcggc atgcatcagg cctcagtctc caccatgaag accatccagt	240
ctcggcacgc cggtcctcgc ggacatgtgc agtcgggtcg ccgatcggcg gggcgcgcg	300
gatcccgcat ggcgaccccc gtggccgcag ctaccgtcgc agcccctcgc tcggccctca	360
acctctcccc caccatcatt cgacaggagg tgctccactc cgccagcgcc cagcaactag	420
actgcgtggc ctccctggcg cccgtcttcg agtcccagat cctccccctc ctgacgccc	480
tggacgagat gtggcagccc accgacttcc tccccgctc gaactcggag gcattcttcg	540

026172-005010PC - Sequence Listing_1.TXT

```

accagatcgg cgacctgagg ggcgcatcgg cggccatccc cgacgacctg ctgggtctgcc      600
tggtggggga catgatcacg gaggaggccc tgcccaccta catggccatg ctgaacacccc      660
tggacgtcgt ggcgcatgag acagggcaca gccagcaccc ctacgccaag tggaccaggg      720
cttggtatcg ggaggagaac cgccatggcg acctgctgaa caagtacatg tggctgacgg      780
ggcgggtggg acatgctggc ggtggagcgc accatccagc catgctggcg gtggagcgca      840
ccatccagcg cctcatctca tcgggcatgg acccgggcac ggagaaccac ccctaccacg      900
cctttgtgtt caccagcttc caggagcgcg ccaccaagct gagccacggc tccaccgccc      960
gcctggcggg cgccgcccgg gacgaggccc tggccaagat ctgcgggacc attgcgcggg     1020
acgagtcgcg ccacgaggcg gcgtacacgc ggaccatgga tgccatcttc cagcgcgacc     1080
ccagcggggc catggtggcg tttgcgcaca tgatgatgcy caagatcacc atgcccgcgc     1140
acctcatgga cgacggccag cacggcgcgc gcaacggggg ggcgcaactt gttcgacgac     1200
tttgcggcag tggcggagcg ggcaggggtg tacaccgccc gcgactacat cggcatcctg     1260
cgccacctca tccggcgctg ggacgtggag gg                                     1292

```

<210> 46

<211> 364

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 46

Met His Gln Ala Ser Val Ser Thr Met Lys Thr Ile Gln Ser Arg His
1 5 10 15

Ala Gly Pro Ile Gly His Val Gln Ser Gly Arg Arg Ser Ala Gly Arg
20 25 30

Ala Gly Ser Arg Met Ala Thr Pro Val Ala Ala Ala Thr Val Ala Ala
35 40 45

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

Leu His Ser Ala Ser Ala Gln Gln Leu Asp Cys Val Ala Ser Leu Ala
65 70 75 80

Pro Val Phe Glu Ser Gln Ile Leu Pro Leu Leu Thr Pro Val Asp Glu
85 90 95

Met Trp Gln Pro Thr Asp Phe Leu Pro Ala Ser Asn Ser Glu Ala Phe
100 105 110

Phe Asp Gln Ile Gly Asp Leu Arg Ala Arg Ser Ala Ala Ile Pro Asp
115 120 125

026172-005010PC - Sequence Listing_1.TXT

Asp Leu Leu Val Cys Leu Val Gly Asp Met Ile Thr Glu Glu Ala Leu
130 135 140

Pro Thr Tyr Met Ala Met Leu Asn Thr Leu Asp Val Val Arg Asp Glu
145 150 155 160

Thr Gly His Ser Gln His Pro Tyr Ala Lys Trp Thr Arg Ala Trp Ile
165 170 175

Ala Glu Glu Asn Arg His Gly Asp Leu Leu Asn Lys Tyr Met Trp Leu
180 185 190

Thr Gly Arg Val Gly His Ala Gly Gly Gly Ala His His Pro Ala Met
195 200 205

Leu Ala Val Glu Arg Thr Ile Gln Arg Leu Ile Ser Ser Gly Met Asp
210 215 220

Pro Gly Thr Glu Asn His Pro Tyr His Ala Phe Val Phe Thr Ser Phe
225 230 235 240

Gln Glu Arg Ala Thr Lys Leu Ser His Gly Ser Thr Ala Arg Leu Ala
245 250 255

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

Arg Asp Glu Ser Arg His Glu Ala Ala Tyr Thr Arg Thr Met Asp Ala
275 280 285

Ile Phe Gln Arg Asp Pro Ser Gly Ala Met Val Ala Phe Ala His Met
290 295 300

Met Met Arg Lys Ile Thr Met Pro Ala His Leu Met Asp Asp Gly Gln
305 310 315 320

His Gly Ala Arg Asn Gly Gly Ala Gln Leu Val Arg Arg Leu Cys Gly
325 330 335

Ser Gly Gly Ala Gly Arg Gly Val His Arg Arg Arg Leu His Arg His
340 345 350

Pro Ala Pro Pro His Pro Ala Leu Gly Arg Gly Gly
355 360

<210> 47

<211> 1395

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

```

<400> 47
attatacatc ggcatcgtct caggtttcac gatctgcatg ctatctatgg gactgtgact      60
ccgccggcca ggttgtggtg cgcgagaatc ctccccgctc ctgccttctc atttccctga    120
cgggagtcgc cgctgagcac cgggcgatc atgggcgctc gcacactcca aaccccatat     180
acatgtggtc gtgcattcac gcatagcgca cggtatgtcc cgcgacgcgc ggctcgaagc     240
cgtggccatc cgacgcgctg cacggccgag gtgagggcac gcccctccgc caatggcgcg     300
cagcccatga ccgccttcga cttccggcag tacatgcagc agcgcgccgc gctggtggac     360
gcagcgctgg acctggcagt gccgctgcag taccgccaga agatcaacga ggccatgcgg     420
tacagcctgc tggccggggg caagcgctg cgcgccgcgc tctgcctcgc tgctgcgag      480
ctcgtgggcg gccccctgga ggcgcccatg cccgcccgtt gcgccatgga gatgatccac     540
accatgagcc tcatccacga cgacctcccc gccatggaca acgacgactt ccggcgcggc     600
cagcccgcga accacaaggc ctatggcgag gagattgcga tcctggcggg cgacgcgctg     660
ctgtcgctga gctttgagca catcgcgcgc gagacgcgag gcgtggaccc ggtgcgcgtc     720
ctggccgcca tctcggagtg gcgcgcggtg ggcagccgcg ggctggtggc ggggcaggtg     780
gtggacctgg gtttcgaggg cggcggcgtg gggctggccc cgctgcgcta catccacgag     840
cacaaaaccg cggcgctgct ggaggcggcg gtggtgtccg gcgcgctgct gggcggcgcg     900
gaggaggcgg acctggagcg cctgcgcacc tacaaccgcg ccatcggcct cgctttccag     960
gtggtggggg acatcctgga catcccgggg accagcgagg agctgggcaa gaccgcgggc    1020
aaggacctga gtccccccaa aacccccctac ccgtccctgg tggggctggc caggtccaaa    1080
aaaattgcgg acgaactgat tgaggacgcg aaaacccaac tcaccagta cgagccggcc     1140
cgagcggcgc ccctcgtaac cctggccgaa aacatttgaa accggaagaa ctgactgggg     1200
gccccccctg cccccagata cggcggggct cctccatcca gttttgggat gggaggagcg     1260
acaaccgacc ccgtaaccct gtgacgcgtt tgccttgcac acgtacgcat gccttgaaac     1320
ccatccatga ccctcaacaa tacctggttg tgtgtagctt ggtcctgaaa aaaaaaaaaa    1380
aaaaaaaaaa aaaaaa                                     1395

```

<210> 48

<211> 342

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 48

```

Met Gly Val Gly Thr Leu Gln Thr Pro Tyr Thr Cys Gly Arg Ala Phe
1           5           10          15

```

```

Thr His Ser Ala Arg Tyr Val Pro Arg Arg Ala Ala Arg Ser Arg Gly

```

20

25

30

His Pro Thr Arg Cys Thr Ala Glu Val Arg Ala Arg Pro Ser Ala Asn
 35 40 45

Gly Ala Gln Pro Met Thr Ala Phe Asp Phe Arg Gln Tyr Met Gln Gln
 50 55 60

Arg Ala Ala Leu Val Asp Ala Ala Leu Asp Leu Ala Val Pro Leu Gln
 65 70 75 80

Tyr Pro Glu Lys Ile Asn Glu Ala Met Arg Tyr Ser Leu Leu Ala Gly
 85 90 95

Gly Lys Arg Val Arg Pro Ala Leu Cys Leu Ala Ala Cys Glu Leu Val
 100 105 110

Gly Gly Pro Leu Glu Ala Ala Met Pro Ala Ala Cys Ala Met Glu Met
 115 120 125

Ile His Thr Met Ser Leu Ile His Asp Asp Leu Pro Ala Met Asp Asn
 130 135 140

Asp Asp Phe Arg Arg Gly Gln Pro Ala Asn His Lys Ala Tyr Gly Glu
 145 150 155 160

Glu Ile Ala Ile Leu Ala Gly Asp Ala Leu Leu Ser Leu Ser Phe Glu
 165 170 175

His Ile Ala Arg Glu Thr Arg Gly Val Asp Pro Val Arg Val Leu Ala
 180 185 190

Ala Ile Ser Glu Trp Arg Ala Val Gly Ser Arg Gly Leu Val Ala Gly
 195 200 205

Gln Val Val Asp Leu Gly Phe Glu Gly Gly Gly Val Gly Leu Ala Pro
 210 215 220

Leu Arg Tyr Ile His Glu His Lys Thr Ala Ala Leu Leu Glu Ala Ala
 225 230 235 240

Val Val Ser Gly Ala Leu Leu Gly Gly Ala Glu Glu Ala Asp Leu Glu
 245 250 255

Arg Leu Arg Thr Tyr Asn Arg Ala Ile Gly Leu Ala Phe Gln Val Val
 260 265 270

Gly Asp Ile Leu Asp Ile Pro Gly Thr Ser Glu Glu Leu Gly Lys Thr
 275 280 285

Ala Gly Lys Asp Leu Ser Ser Pro Lys Thr Pro Tyr Pro Ser Leu Val
 Page 46

290

295

300

Gly Leu Ala Arg Ser Lys Lys Ile Ala Asp Glu Leu Ile Glu Asp Ala
 305 310 315 320

Lys Thr Gln Leu Thr Gln Tyr Glu Pro Ala Arg Ala Ala Pro Leu Val
 325 330 335

Thr Leu Ala Glu Asn Ile
 340

<210> 49

<211> 833

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 49

cagatgccat gcgccctcgg gccgcgggcc tgaggggtcca cgcagcgtcc tcggtggccc	60
agacgcacca ggccgcccc cggcgggaca ggagggttcga cgactaccag ccccgaccg	120
ccatcctctt ccccgccag ggcgcgcaga gcgtgggcat ggcgggagag ctggcgaagg	180
ccgtccccgc cgccgcggcg ctgttcgacg ccgcctccga ccagctcggc tatgacctgc	240
tccgcgtgtg cgttgagggc cccaaggcgc gcctggacag caccgccgtc agccagcccg	300
ccatctacgt ggccagcctg gcggcggttg agaagctgcg cgcggagggc ggggaggagg	360
cactggccgc catcgacgtc gctgccggtc tgccttgagg cgagtacacc gcgctggcct	420
ttgccggcgc cttctccttc gccgacgggc tgcgcctggt ggccctgcgc ggcgccagca	480
tgcaggccgc cgccgacgcc gcacctcgg gcattggtctc cgtcatcggc ctgccctccg	540
acgcggtggc cgcgctgtgc gagggccgcca acgcgcaggc ggcccccgac caggccgtgc	600
gcatcgccaa ctacctctgc gacggcaact acgccgtcag cgggtgggctg gagggctgcg	660
cggcggtgga gggcctggcc aaggcccaca aggcgcgcac gacggtgcgc ctggcggtgg	720
cgggcgcctt ccacaccccc ttcattgcagc cggcggtgga ggcgctgagc gcgggcgctg	780
gcggacacgc cgctggctgc gccgcgcac cccgtggtca gcaacgggac gcc	833

<210> 50

<211> 275

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 50

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

026172-005010PC - Sequence Listing_1.TXT

Ala Gln Thr His Gln Ala Ala Pro Pro Ala Asp Arg Arg Phe Asp Asp
20 25 30

Tyr Gln Pro Arg Thr Ala Ile Leu Phe Pro Gly Gln Gly Ala Gln Ser
35 40 45

Val Gly Met Ala Gly Glu Leu Ala Lys Ala Val Pro Ala Ala Ala Ala
50 55 60

Leu Phe Asp Ala Ala Ser Asp Gln Leu Gly Tyr Asp Leu Leu Arg Val
65 70 75 80

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

Pro Ala Ile Tyr Val Ala Ser Leu Ala Ala Val Glu Lys Leu Arg Ala
100 105 110

Glu Gly Gly Glu Glu Ala Leu Ala Ala Ile Asp Val Ala Ala Gly Leu
115 120 125

Ser Leu Gly Glu Tyr Thr Ala Leu Ala Phe Ala Gly Ala Phe Ser Phe
130 135 140

Ala Asp Gly Leu Arg Leu Val Ala Leu Arg Gly Ala Ser Met Gln Ala
145 150 155 160

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

Ser Asp Ala Val Ala Ala Leu Cys Glu Ala Ala Asn Ala Gln Val Ala
180 185 190

Pro Asp Gln Ala Val Arg Ile Ala Asn Tyr Leu Cys Asp Gly Asn Tyr
195 200 205

Ala Val Ser Gly Gly Leu Glu Gly Cys Ala Ala Val Glu Gly Leu Ala
210 215 220

Lys Ala His Lys Ala Arg Met Thr Val Arg Leu Ala Val Ala Gly Ala
225 230 235 240

Phe His Thr Pro Phe Met Gln Pro Ala Val Glu Ala Leu Ser Ala Gly
245 250 255

Ala Gly Gly His Ala Ala Gly Arg Ala Ala His Pro Arg Gly Gln Gln
260 265 270

Arg Asp Ala
275

026172-005010PC - Sequence Listing_1.TXT

<210> 51
 <211> 787
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 51
 tgtccatctc cccccaccct ccaccaacc atcgctgacg gcatgcaggc gctgtgttct 60
 cccccgcgt ccctcacggc gcgtgcggtta ccccatgggc gggccagccc agcacagcgg 120
 gtgtccagcg ccggcccggc ctacaccggc ctgtcccggc acaccctggg ctgccccagc 180
 acccccaccc tccagtcccg cgccgcggtc cagaccgcg gctcctcctc cggctccacc 240
 acgcgcataa ccaccaccgc ccagcgcaag atcaaggtag ccaccaacgg gtccggccgc 300
 atcggccgccc agttcctgcg ctgcgtggag gggcgcgagg actcgctgct ggagatcgtg 360
 gccgtgaacg actccggcgg cgtgaagcag gccagccacc tgctcaagta cgactccacc 420
 atgggcacct tcaacgccga catcaagatc tcgggcgagg gcaccttctc cgtcaacggc 480
 cgcgacatcc gcgtcgtctc ctcccgcgac cccctggccc tgccctgggg cgagctgggc 540
 gtggacctgg tgatcgaggg gacgggagtg tttgtggacc gcaagggtgc cagcaagcac 600
 ctgcaggcgg gggccaagaa ggtcatcatc accgcgccgg ccaagggctc cgacgtgccc 660
 acctacgtca tgggcgtgaa cgcggaccag tactccaact ccgacgacat catctccaac 720
 gcctcctgca ccaccaactg cctggcgccc tttgtcaagg tgctcaacga ccgcttcggc 780
 atcgtga 787

<210> 52
 <211> 248
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 52
 Met Gln Ala Leu Cys Ser His Pro Ala Ser Leu Thr Ala Arg Ala Val
 1 5 10 15
 Pro His Gly Arg Ala Ser Pro Ala Gln Arg Val Ser Ser Ala Gly Pro
 20 25 30
 Ala Tyr Thr Gly Leu Ser Arg His Thr Leu Gly Cys Pro Ser Thr Pro
 35 40 45
 Thr Leu Gln Ser Arg Ala Ala Val Gln Thr Arg Gly Ser Ser Ser Gly
 50 55 60
 Ser Thr Thr Arg Met Thr Thr Thr Ala Gln Arg Lys Ile Lys Val Ala
 65 70 75 80

026172-005010PC - Sequence Listing_1.TXT

Ile Asn Gly Phe Gly Arg Ile Gly Arg Gln Phe Leu Arg Cys Val Glu
85 90 95

Gly Arg Glu Asp Ser Leu Leu Glu Ile Val Ala Val Asn Asp Ser Gly
100 105 110

Gly Val Lys Gln Ala Ser His Leu Leu Lys Tyr Asp Ser Thr Met Gly
115 120 125

Thr Phe Asn Ala Asp Ile Lys Ile Ser Gly Glu Gly Thr Phe Ser Val
130 135 140

Asn Gly Arg Asp Ile Arg Val Val Ser Ser Arg Asp Pro Leu Ala Leu
145 150 155 160

Pro Trp Gly Glu Leu Gly Val Asp Leu Val Ile Glu Gly Thr Gly Val
165 170 175

Phe Val Asp Arg Lys Gly Ala Ser Lys His Leu Gln Ala Gly Ala Lys
180 185 190

Lys Val Ile Ile Thr Ala Pro Ala Lys Gly Ser Asp Val Pro Thr Tyr
195 200 205

Val Met Gly Val Asn Ala Asp Gln Tyr Ser Asn Ser Asp Asp Ile Ile
210 215 220

Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Phe Val Lys Val
225 230 235 240

Leu Asn Asp Arg Phe Gly Ile Val
245

<210> 53

<211> 860

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 53

gatgttgaga atagtagctt gctgccttgt cgccatgcag agcgtgtgcg cgcagtcggt 60

ttcatgcaag ggggccttca cccagtcctt gcggaccccc cgatgcagca ggagccagct 120

cgtctgccgg gctgatggca aggccggagc cttcatcaag accgtaaaga gcggtgctgc 180

cgctctggct gcctccctcc tcctgtctgg ggggtgcgggc gcaactgacct ttgatgagct 240

gcagggcctg acctacctgc aggtgaaggg ctctggcatc gccaacacct gccccaccct 300

gtctggcggc tcctccaaca tcaaggacct gaagagcggg acctactccg tcaacaagat 360

gtgcctggag cccacgtcct tcaagggtcaa ggaggaggca cagttcaaga acggcgaggg 420

026172-005010PC - Sequence Listing_1.TXT

```

cgactttgtg cccaccaagc tcgtcacgcg tctgacctac accctggacg agatctctgg      480
ccagatgaag atcgacggca gcggcggcgt ggagttcaag gaggaggatg gcatcgacta      540
tgctgcagtc accgtgcagc ttccgggcgg ggagcgcgtg cccttcctct tcaccatcaa      600
ggagcttgac gccaaagggga ctgccgacgg cttcaagggc gagttcaccg tgccctccta      660
ccgtgggtcc tccttcctgg accccaaggg ccgcggcgcc tccaccggct acgacaacgc      720
cgtggccctg cccgccgccc gcgattccga ggagttggag aaggagaaca acaagtccac      780
caaggctctg aagggggagg ccattctctc catcgccaag gtggacgccg ggacagggga      840
ggtaggcggc atctttgagt                                         860

```

<210> 54

<211> 275

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 54

Met Gln Ser Val Cys Ala Gln Ser Val Ser Cys Lys Gly Ala Phe Thr
1 5 10 15

Gln Ser Leu Arg Thr Pro Arg Cys Ser Arg Ser Gln Leu Val Cys Arg
20 25 30

Ala Asp Gly Lys Ala Gly Ala Phe Ile Lys Thr Val Lys Ser Gly Ala
35 40 45

Ala Ala Leu Ala Ala Ser Leu Leu Leu Ser Gly Gly Ala Gly Ala Leu
50 55 60

Thr Phe Asp Glu Leu Gln Gly Leu Thr Tyr Leu Gln Val Lys Gly Ser
65 70 75 80

Gly Ile Ala Asn Thr Cys Pro Thr Leu Ser Gly Gly Ser Ser Asn Ile
85 90 95

Lys Asp Leu Lys Ser Gly Thr Tyr Ser Val Asn Lys Met Cys Leu Glu
100 105 110

Pro Thr Ser Phe Lys Val Lys Glu Glu Ala Gln Phe Lys Asn Gly Glu
115 120 125

Ala Asp Phe Val Pro Thr Lys Leu Val Thr Arg Leu Thr Tyr Thr Leu
130 135 140

Asp Glu Ile Ser Gly Gln Met Lys Ile Asp Gly Ser Gly Gly Val Glu
145 150 155 160

026172-005010PC - Sequence Listing_1.TXT

Phe Lys Glu Glu Asp Gly Ile Asp Tyr Ala Ala Val Thr Val Gln Leu
165 170 175

Pro Gly Gly Glu Arg Val Pro Phe Leu Phe Thr Ile Lys Glu Leu Asp
180 185 190

Ala Lys Gly Thr Ala Asp Gly Phe Lys Gly Glu Phe Thr Val Pro Ser
195 200 205

Tyr Arg Gly Ser Ser Phe Leu Asp Pro Lys Gly Arg Gly Ala Ser Thr
210 215 220

Gly Tyr Asp Asn Ala Val Ala Leu Pro Ala Ala Gly Asp Ser Glu Glu
225 230 235 240

Leu Glu Lys Glu Asn Asn Lys Ser Thr Lys Ala Leu Lys Gly Glu Ala
245 250 255

Ile Phe Ser Ile Ala Lys Val Asp Ala Gly Thr Gly Glu Val Ala Gly
260 265 270

Ile Phe Glu
275

<210> 55
<211> 818
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 55
ataatcggaa cccagctgca cgcaccatca gtgcggcagc atgcagaccg tcgcagccag 60
ctatggcgta ttggcgccct ccggctccag cgtgacccgg ggctcgacca gcagcaagca 120
gcacttcacc accctcactc ccttttccgg cttcaggcgc ctgaatcatg tggatcgggc 180
ggggcaggcg ggggtctggga gccccagac cctgcagcag gccgtgggca aggccgtgcg 240
ccggtcgcgg ggccgcacca ccagcgccgt gcgcgtgacc cgcattgatgt ttgagcgggt 300
caccgagaag gccatcaagg tggatcatgct cgcgcaggag gaggctcgcc gtctgggcca 360
caacttcgtg gggacggagc aaatcctgct ggggttgatt ggggagtcca caggcatcgc 420
cgccaaggtc ctcaagtcga tgggcgtcac gctgaaagat gcgcgtgtgg aggtcgagaa 480
gatcatcggc cgggggagcg gctttgtggc cgtggagatc cccttcaccc cccgcgccaa 540
gcgtgtgctg gagctgtccc tggaggaggc tcgccagctc ggccacaact acattggcac 600
ggagcacatc ctgctggggc tgctgcgcga gggtgagggc gtggcctccc gcgtgctgga 660
gaccctgggc gccgaccccc agaagatccg cactcagggtg gtacgcatgg tgggtgagtc 720
gcaggagccc gtgggcacca cgggtgggcgg aggggtccacc ggctccaaca agatgcccac 780

cctggaggag tacggcacca acctgaccgc ccaggccg

<210> 56

<211> 259

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 56

Met Gln Thr Val Ala Ala Ser Tyr Gly Val Leu Ala Pro Ser Gly Ser
1 5 10 15Ser Val Thr Arg Gly Ser Thr Ser Ser Lys Gln His Phe Thr Thr Leu
20 25 30Thr Pro Phe Ser Gly Phe Arg Arg Leu Asn His Val Asp Arg Ala Gly
35 40 45Gln Ala Gly Ser Gly Ser Pro Gln Thr Leu Gln Gln Ala Val Gly Lys
50 55 60Ala Val Arg Arg Ser Arg Gly Arg Thr Thr Ser Ala Val Arg Val Thr
65 70 75 80Arg Met Met Phe Glu Arg Phe Thr Glu Lys Ala Ile Lys Val Val Met
85 90 95Leu Ala Gln Glu Glu Ala Arg Arg Leu Gly His Asn Phe Val Gly Thr
100 105 110Glu Gln Ile Leu Leu Gly Leu Ile Gly Glu Ser Thr Gly Ile Ala Ala
115 120 125Lys Val Leu Lys Ser Met Gly Val Thr Leu Lys Asp Ala Arg Val Glu
130 135 140Val Glu Lys Ile Ile Gly Arg Gly Ser Gly Phe Val Ala Val Glu Ile
145 150 155 160Pro Phe Thr Pro Arg Ala Lys Arg Val Leu Glu Leu Ser Leu Glu Glu
165 170 175Ala Arg Gln Leu Gly His Asn Tyr Ile Gly Thr Glu His Ile Leu Leu
180 185 190Gly Leu Leu Arg Glu Gly Glu Gly Val Ala Ser Arg Val Leu Glu Thr
195 200 205Leu Gly Ala Asp Pro Gln Lys Ile Arg Thr Gln Val Val Arg Met Val
210 215 220

026172-005010PC - Sequence Listing_1.TXT

Gly Glu Ser Gln Glu Pro Val Gly Thr Thr Val Gly Gly Gly Ser Thr
225 230 235 240

Gly Ser Asn Lys Met Pro Thr Leu Glu Glu Tyr Gly Thr Asn Leu Thr
245 250 255

Ala Gln Ala

<210> 57
<211> 2357
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 57
ctttcttgcg ctatgacact tccagcaaaa ggtagggcgg gctgcgagac ggcttcccgg 60
cgctgcatgc aacaccgatg atgcttcgac cccccgaagc tccttcgggg ctgcatgggc 120
gctccgatgc cgctccaggg cgagcgctgt ttaaatagcc agggccccga ttgcaaagac 180
attatagcga gctaccaaag ccatattcaa acacctagat cactaccact tctacacagg 240
ccactcgagc ttgtgatcgc actccgctaa gggggcgcct cttcctcttc gtttcagtca 300
caaccgcga acggcgcgcc atatcaatgc ttcttcaggc ctttcttttt cttcttgctg 360
gttttgctgc caagatcagc gcctctatga cgaacgaaac ctcggataga ccacttgctg 420
actttacacc aaacaagggc tggatgaatg accccaatgg actgtggtac gacgaaaaag 480
atgccaagtg gcatctgtac tttcaataca acccgaaacga tactgtctgg gggacgccat 540
tgttttgggg ccacgccacg tccgacgacc tgaccaattg ggaggaccaa ccaatagcta 600
tcgctccgaa gaggaacgac tccggagcat tctcgggttc catggtggtt gactacaaca 660
atacttccgg ctttttcaac gataccattg acccgagaca acgctgcgtg gccatatgga 720
cttacaacac accggagtcc gaggagcagt acatctcgta tagcctggac ggtggataca 780
cttttacaga gtatcagaag aaccctgtgc ttgctgcaaa ttcgactcag ttccgagatc 840
cgaaggtcct ttggtacgag ccctcgcaga agtggatcat gacagcggca aagtcacagg 900
actacaagat cgaaatttac tcgtctgacg accttaaadc ctggaagctc gaatccgcgt 960
tcgcaaacga gggctttctc ggctaccaat acgaatgcc aggctgata gaggtcccaa 1020
cagagcaaga tcccagcaag tcctactggg tgatgtttat ttccattaat ccaggagcac 1080
cggcaggagg ttcttttaac cagtacttcg tcggaagctt taacggaact catttcgagg 1140
catttgataa ccaatcaaga gtagttgatt ttggaaagga ctactatgcc ctgcagactt 1200
tcttcaatac tgaccgcacc tatgggagcg ctcttgcat tgcgtgggct tctaactggg 1260
agtattccgc attcgttcct acaaaccctt ggaggtcctc catgtcgtc gtgaggaaat 1320
tctctctcaa cactgagtac caggccaacc cggaaccga actcataaac ctgaaagccg 1380

026172-005010PC - Sequence Listing_1.TXT

aaccgatcct gaacattagc aacgctggcc cctggagccg gtttgcaacc aacaccacgt	1440
tgacgaaagc caacagctac aacgtcgatc tttcgaatag caccgggtaca cttgaatttg	1500
aactggtgta tgccgtcaat accacccaaa cgatctcgaa gtcggtgttc gcggacctct	1560
ccctctggtt taaaggcctg gaagaccccg aggagtacct cagaatgggt ttcgaggttt	1620
ctgcgctctc cttcttcctt gatcgcgggg acagcaaagt aaaatttggt aaggagaacc	1680
catattttac caacaggatg agcgtaaca accaaccatt caagagcgaa aacgacctgt	1740
cgtactacaa agtgtatggt ttgcttgatc aaaatatcct ggaactctac ttcaacgatg	1800
gtgatgtcgt gtccaccaac acatacttca tgacaaccgg gaacgcactg ggctccgtga	1860
acatgacgac ggggtgtggat aacctgttct acatcgacaa attccagggtg agggaaagtca	1920
agtgagatct gtcgatcgac aagctcgagg cagcagcagc tcggatagta tcgacacact	1980
ctggacgctg gtcgtgtgat ggactgttgc cgccacactt gctgccttga cctgtgaata	2040
tccctgccgc ttttatcaaa cagcctcagt gtgtttgatc ttgtgtgtac gcgcttttgc	2100
gagttgctag ctgcttgtgc tatttgcgaa taccacccc agcatcccct tccctcgttt	2160
catatcgctt gcaccccaac cgcaacttat ctacgctgtc ctgctatccc tcagcgctgc	2220
tcctgctcct gctcactgcc cctcgcacag ccttggtttg ggctccgcct gtattctcct	2280
ggtactgcaa cctgtaaacc agcactgcaa tgctgatgca cgggaagtag tgggatggga	2340
acacaaatgg aaagctt	2357

<210> 58

<211> 2335

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 58

ctttcttgcg ctatgacact tccagcaaaa ggtagggcgg gctgcgagac ggcttcccgg	60
cgctgcatgc aacaccgatg atgcttcgac ccccggaagc tccttcgggg ctgcatgggc	120
gctccgatgc cgctccaggg cgagcgctgt ttaaatagcc agggccccga ttgcaaagac	180
attatagcga gctaccaaag ccatattcaa acacctagat cactaccact tctacacagg	240
ccactcgagc ttgtgatcgc actccgctaa gggggcgcct cttcctcttc gtttcagtca	300
caaccgcgaa acggcgcgcc atgctgctgc aggccttcct gttcctgctg gccggcttcg	360
ccgccaagat cagcgctcc atgacgaacg agacgtccga ccgccccctg gtgcacttca	420
cccccaacaa gggctggatg aacgacccca acggcctgtg gtacgacgag aaggacgcca	480
agtggcacct gtacttccag tacaacccga acgacaccgt ctgggggacg cccttgttct	540
ggggccacgc cacgtccgac gacctgacca actgggagga ccagcccatc gccatcgccc	600
cgaagcgcaa cgactccggc gccttctccg gctccatggt ggtggactac aacaacacct	660

026172-005010PC - Sequence Listing_1.TXT

ccggcttctt caacgacacc atcgacccgc gccagcgctg cgtggccatc tggacctaca	720
acaccccgga gtccgaggag cagtacatct cctacagcct ggacggcggc tacaccttca	780
ccgagtacca gaagaacccc gtgctggccg ccaactccac ccagttccgc gacccgaagg	840
tcttctggta cgagccctcc cagaagtgga tcatgaccgc ggccaagtcc caggactaca	900
agatcgagat ctactcctcc gacgacctga agtcctggaa gctggagtcc gcgttcgcca	960
acgagggctt cctcggctac cagtacgagt gccccggcct gatcgaggtc cccaccgagc	1020
aggaccccag caagtcctac tgggtgatgt tcatctccat caaccccggc gccccggccg	1080
gcggctcctt caaccagtac ttcgtcggca gcttcaacgg caccacttc gaggccttcg	1140
acaaccagtc ccgcgtggtg gacttcggca aggactacta cgccctgcag accttcttca	1200
acaccgaccc gacctacggg agcgccctgg gcatcgctg ggccccaac tgggagtact	1260
ccgccttcgt gcccaccaac ccctggcgct cctccatgtc cctcgtgcgc aagttctccc	1320
tcaacaccga gtaccaggcc aacccggaga cggagctgat caacctgaag gccgagccga	1380
tcctgaacat cagcaacgcc ggccccctgga gccggttcgc caccaacacc acgttgacga	1440
aggccaacag ctacaacgtc gacctgtcca acagcaccgg caccctggag ttcgagctgg	1500
tgtacgccgt caacaccacc cagacgatct ccaagtccgt gttcgcgac ctctccctct	1560
ggttcaaggg cctggaggac cccgaggagt acctccgcat gggcttcgag gtgtccgcgt	1620
cctccttctt cctggaccgc gggaacagca aggtgaagtt cgtgaaggag aacccctact	1680
tcaccaaccg catgagcgtg aacaaccagc cttcaagag cgagaacgac ctgtcctact	1740
acaagggtgta cggcttgctg gaccagaaca tcctggagct gtacttcaac gacggcgacg	1800
tcgtgtccac caacacctac ttcattgacca ccgggaacgc cctgggctcc gtgaacatga	1860
cgacgggggt ggacaacctg ttctacatcg acaagttcca ggtgcgcgag gtcaagtgat	1920
taattaactc gaggcagcag cagctcggat agtatcgaca cactctggac gctggctgtg	1980
tgatggactg ttgccgccac acttgctgcc ttgacctgtg aatatccctg ccgcttttat	2040
caaacagcct cagtgtgttt gatcttgtgt gtacgcgctt ttgcgagttg ctagctgctt	2100
gtgctatttg cgaataccac ccccagcatc cccttcctc gtttcatatc gcttgcaccc	2160
caaccgcaac ttatctacgc tgcctgcta tccctcagcg ctgctcctgc tcctgctcac	2220
tgccccctgc acagccttgg tttgggctcc gcctgtattc tcctgggtact gcaacctgta	2280
aaccagcact gcaatgctga tgcacgggaa gtagtgggat gggaacacaa atgga	2335

<210> 59

<211> 382

<212> PRT

<213> Cinnamomum camphorum

<400> 59

Met	Ala	Thr	Thr	Ser	Leu	Ala	Ser	Ala	Phe	Cys	Ser	Met	Lys	Ala	Val
1				5				10						15	

Met Leu Ala Arg Asp Gly Arg Gly Met Lys Pro Arg Ser Ser Asp Leu

20

25

30

Gln Leu Arg Ala Gly Asn Ala Gln Thr Ser Leu Lys Met Ile Asn Gly
 35 40 45

Thr Lys Phe Ser Tyr Thr Glu Ser Leu Lys Lys Leu Pro Asp Trp Ser
 50 55 60

Met Leu Phe Ala Val Ile Thr Thr Ile Phe Ser Ala Ala Glu Lys Gln
 65 70 75 80

Trp Thr Asn Leu Glu Trp Lys Pro Lys Pro Asn Pro Pro Gln Leu Leu
 85 90 95

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

Ile Arg Ser Tyr Glu Val Gly Pro Asp Arg Ser Thr Ser Ile Val Ala
 115 120 125

Val Met Asn His Leu Gln Glu Ala Ala Leu Asn His Ala Lys Ser Val
 130 135 140

Gly Ile Leu Gly Asp Gly Phe Gly Thr Thr Leu Glu Met Ser Lys Arg
 145 150 155 160

Asp Leu Ile Trp Val Val Lys Arg Thr His Val Ala Val Glu Arg Tyr
 165 170 175

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

Gly Asn Asn Gly Arg Arg His Asp Phe Leu Val Arg Asp Cys Lys Thr
 195 200 205

Gly Glu Ile Leu Thr Arg Cys Thr Ser Leu Ser Val Met Met Asn Thr
 210 215 220

Arg Thr Arg Arg Leu Ser Lys Ile Pro Glu Glu Val Arg Gly Glu Ile
 225 230 235 240

Gly Pro Ala Phe Ile Asp Asn Val Ala Val Lys Asp Glu Glu Ile Lys
 245 250 255

Lys Pro Gln Lys Leu Asn Asp Ser Thr Ala Asp Tyr Ile Gln Gly Gly
 260 265 270

Leu Thr Pro Arg Trp Asn Asp Leu Asp Ile Asn Gln His Val Asn Asn
 275 280 285

Ile Lys Tyr Val Asp Trp Ile Leu Glu Thr Val Pro Asp Ser Ile Phe
 Page 57

290

295

300

Glu Ser His His Ile Ser Ser Phe Thr Ile Glu Tyr Arg Arg Glu Cys
305 310 315 320

Thr Met Asp Ser Val Leu Gln Ser Leu Thr Thr Val Ser Gly Gly Ser
325 330 335

Ser Glu Ala Gly Leu Val Cys Glu His Leu Leu Gln Leu Glu Gly Gly
340 345 350

Ser Glu Val Leu Arg Ala Lys Thr Glu Trp Arg Pro Lys Leu Thr Asp
355 360 365

Ser Phe Arg Gly Ile Ser Val Ile Pro Ala Glu Ser Ser Val
370 375 380

<210> 60

<211> 1240

<212> DNA

<213> Cinnamomum camphorum

<400> 60

```

ggcgcgccat ggccaccacc tccctggcct ccgccttctg cagcatgaag gccgtgatgc      60
tggccccgca cggccgcggc atgaagcccc gctccagcga cctgcagctg cgcgccggca      120
acgcccagac ctccctgaag atgatcaacg gcaccaagtt ctctacacc gagagcctga      180
agaagctgcc cgactggtcc atgctgttcg ccgtgatcac caccatcttc tccgccgccg      240
agaagcagtg gaccaacctg gagtggagc ccaagcccaa cccccccag ctgctggacg      300
accacttcgg cccccacggc ctggtgttcc gccgcacctt cgccatccgc agctacgagg      360
tgggccccga ccgctccacc agcatcgtgg ccgtgatgaa ccacctgcag gaggccgccc      420
tgaaccacgc caagtccgtg ggcacctctg gcgacggctt cggcaccacc ctggagatgt      480
ccaagcgcca cctgatctgg gtggtgaagc gcacccacgt ggccgtggag cgctaccccg      540
cctggggcga caccgtggag gtggagtgtt ggggtggcgc ctccggcaac aacggccgcc      600
gccacgactt cctggtgcgc gactgcaaga ccggcgagat cctgaccgcg tgcacctccc      660
tgagcgtgat gatgaacacc cgcacccgcc gcctgagcaa gatccccgag gaggtgcgcg      720
gcgagatcgg ccccgccctt atcgacaacg tggccgtgaa ggacgaggag atcaagaagc      780
cccagaagct gaacgactcc accgccgact acatccaggg cggcctgacc ccccgctgga      840
acgacctgga catcaaccag cacgtgaaca acatcaagta cgtggactgg atcctggaga      900
ccgtgcccga cagcatcttc gagagccacc acatctcttc cttcaccatc gagtaccgcc      960
gcgagtgcac catggacagc gtgctgcagt ccctgaccac cgtgagcggc ggctcctccg     1020
aggccggcct ggtgtgcgag cacctgctgc agctggaggg cggcagcgag gtgctgcgcg     1080
ccaagaccga gtggcgcccc aagctgaccg actccttcgg cggcatcagc gtgatccccg     1140
ccgagtccag cgtgatggac tacaaggacc acgacggcga ctacaaggac cacgacatcg     1200

```

actacaagga cgacgacgac aagtgactcg agttaattaa

1240

<210> 61

<211> 415

<212> PRT

<213> Cuphea hookeriana

<400> 61

Met Val Ala Ala Ala Ser Ser Ala Phe Phe Pro Val Pro Ala Pro
1 5 10 15Gly Ala Ser Pro Lys Pro Gly Lys Phe Gly Asn Trp Pro Ser Ser Leu
20 25 30Ser Pro Ser Phe Lys Pro Lys Ser Ile Pro Asn Gly Gly Phe Gln Val
35 40 45Lys Ala Asn Asp Ser Ala His Pro Lys Ala Asn Gly Ser Ala Val Ser
50 55 60Leu Lys Ser Gly Ser Leu Asn Thr Gln Glu Asp Thr Ser Ser Ser Pro
65 70 75 80Pro Pro Arg Thr Phe Leu His Gln Leu Pro Asp Trp Ser Arg Leu Leu
85 90 95Thr Ala Ile Thr Thr Val Phe Val Lys Ser Lys Arg Pro Asp Met His
100 105 110Asp Arg Lys Ser Lys Arg Pro Asp Met Leu Val Asp Ser Phe Gly Leu
115 120 125Glu Ser Thr Val Gln Asp Gly Leu Val Phe Arg Gln Ser Phe Ser Ile
130 135 140Arg Ser Tyr Glu Ile Gly Thr Asp Arg Thr Ala Ser Ile Glu Thr Leu
145 150 155 160Met Asn His Leu Gln Glu Thr Ser Leu Asn His Cys Lys Ser Thr Gly
165 170 175Ile Leu Leu Asp Gly Phe Gly Arg Thr Leu Glu Met Cys Lys Arg Asp
180 185 190Leu Ile Trp Val Val Ile Lys Met Gln Ile Lys Val Asn Arg Tyr Pro
195 200 205Ala Trp Gly Asp Thr Val Glu Ile Asn Thr Arg Phe Ser Arg Leu Gly
210 215 220Lys Ile Gly Met Gly Arg Asp Trp Leu Ile Ser Asp Cys Asn Thr Gly
225 230 235 240

026172-005010PC - Sequence Listing_1.TXT

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

Thr Arg Arg Leu Ser Lys Leu Pro Tyr Glu Val His Gln Glu Ile Val
260 265 270

Pro Leu Phe Val Asp Ser Pro Val Ile Glu Asp Ser Asp Leu Lys Val
275 280 285

His Lys Phe Lys Val Lys Thr Gly Asp Ser Ile Gln Lys Gly Leu Thr
290 295 300

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

Tyr Ile Gly Trp Ile Leu Glu Ser Met Pro Thr Glu Val Leu Glu Thr
325 330 335

Gln Glu Leu Cys Ser Leu Ala Leu Glu Tyr Arg Arg Glu Cys Gly Arg
340 345 350

Asp Ser Val Leu Glu Ser Val Thr Ala Met Asp Pro Ser Lys Val Gly
355 360 365

Val Arg Ser Gln Tyr Gln His Leu Leu Arg Leu Glu Asp Gly Thr Ala
370 375 380

Ile Val Asn Gly Ala Thr Glu Trp Arg Pro Lys Asn Ala Gly Ala Asn
385 390 395 400

Gly Ala Ile Ser Thr Gly Lys Thr Ser Asn Gly Asn Ser Val Ser
405 410 415

<210> 62

<211> 1339

<212> DNA

<213> Cuphea hookeriana

<400> 62

ggcgcgccat ggtggccgcc gccgcctcca gcgccttctt ccccgtagcc gccccggcg 60

cctcccccaa gcccggcaag ttcggcaact ggccctccag cctgagcccc tccttcaagc 120

ccaagtccat cccaacggc ggcttccagg tgaaggccaa cgacagcgcc caccccaagg 180

ccaacggctc cgccgtgagc ctgaagagcg gcagcctgaa caccaggag gacacctcct 240

ccagcccccc ccccgccacc ttctgcacc agctgcccga ctggagccgc ctgctgaccg 300

ccatcaccac cgtgttcgtg aagtccaagc gccccgacat gcacgaccgc aagtccaagc 360

gccccgacat gctggtggac agcttcggcc tggagtccac cgtgcaggac ggcctggtgt 420

tccgccagtc cttctccatc cgctcctacg agatcggcac cgaccgcacc gccagcatcg 480

026172-005010PC - Sequence Listing_1.TXT

```

agaccctgat gaaccacctg caggagacct ccctgaacca ctgcaagagc accggcatcc      540
tgctggacgg cttcgccgc accctggaga tgtgcaagcg cgacctgac tgggtggtga      600
tcaagatgca gatcaaggtg aaccgctacc ccgcctgggg cgacaccgtg gagatcaaca      660
cccgcttcag ccgcctgggc aagatcgga tgggccgcga ctggctgac tccgactgca      720
acaccggcga gatcctggtg cgcgccacca gcgcctacgc catgatgaac cagaagaccc      780
gccgcctgtc caagctgccc tacgaggtgc accaggagat cgtgcccctg ttcgtggaca      840
gccccgtgat cgaggactcc gacctgaagg tgcacaagtt caaggtgaag accggcgaca      900
gcatccagaa gggcctgacc cccggctgga acgacctgga cgtgaaccag cacgtgtcca      960
acgtgaagta catcggtg atcctggaga gcatgccac cgaggtgctg gagaccagg     1020
agctgtgctc cctggccctg gactaccgcc gcgagtgcgg ccgcgactcc gtgctggaga     1080
gcgtgaccgc catggacccc agcaaggtgg gcgtgcgctc ccagtaccag cacctgtctc     1140
gcctggagga cggcaccgcc atcgtgaacg gcgccaccga gtggcgcccc aagaacgccg     1200
gcgccaacgg cgccatctcc accggcaaga ccagcaacgg caactccgtg tccatggact     1260
acaaggacca cgacggcgac tacaaggacc acgacatcga ctacaaggac gacgacgaca     1320
agtgactcga gttaattaa                                         1339

```

<210> 63

<211> 382

<212> PRT

<213> Umbellularia sp.

<400> 63

```

Met Ala Thr Thr Ser Leu Ala Ser Ala Phe Cys Ser Met Lys Ala Val
1           5           10           15

```

```

Met Leu Ala Arg Asp Gly Arg Gly Met Lys Pro Arg Ser Ser Asp Leu
          20           25           30

```

```

Gln Leu Arg Ala Gly Asn Ala Pro Thr Ser Leu Lys Met Ile Asn Gly
          35           40           45

```

```

Thr Lys Phe Ser Tyr Thr Glu Ser Leu Lys Arg Leu Pro Asp Trp Ser
50           55           60

```

```

Met Leu Phe Ala Val Ile Thr Thr Ile Phe Ser Ala Ala Glu Lys Gln
65           70           75           80

```

```

Trp Thr Asn Leu Glu Trp Lys Pro Lys Pro Lys Leu Pro Gln Leu Leu
          85           90           95

```

```

Asp Asp His Phe Gly Leu His Gly Leu Val Phe Arg Arg Thr Phe Ala
100           105           110

```

```

Ile Arg Ser Tyr Glu Val Gly Pro Asp Arg Ser Thr Ser Ile Leu Ala
115           120           125

```

026172-005010PC - Sequence Listing_1.TXT

Val Met Asn His Met Gln Glu Ala Thr Leu Asn His Ala Lys Ser Val
130 135 140

Gly Ile Leu Gly Asp Gly Phe Gly Thr Thr Leu Glu Met Ser Lys Arg
145 150 155 160

Asp Leu Met Trp Val Val Arg Arg Thr His Val Ala Val Glu Arg Tyr
165 170 175

Pro Thr Trp Gly Asp Thr Val Glu Val Glu Cys Trp Ile Gly Ala Ser
180 185 190

Gly Asn Asn Gly Met Arg Arg Asp Phe Leu Val Arg Asp Cys Lys Thr
195 200 205

Gly Glu Ile Leu Thr Arg Cys Thr Ser Leu Ser Val Leu Met Asn Thr
210 215 220

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

Gly Pro Ala Phe Ile Asp Asn Val Ala Val Lys Asp Asp Glu Ile Lys
245 250 255

Lys Leu Gln Lys Leu Asn Asp Ser Thr Ala Asp Tyr Ile Gln Gly Gly
260 265 270

Leu Thr Pro Arg Trp Asn Asp Leu Asp Val Asn Gln His Val Asn Asn
275 280 285

Leu Lys Tyr Val Ala Trp Val Phe Glu Thr Val Pro Asp Ser Ile Phe
290 295 300

Glu Ser His His Ile Ser Ser Phe Thr Leu Glu Tyr Arg Arg Glu Cys
305 310 315 320

Thr Arg Asp Ser Val Leu Arg Ser Leu Thr Thr Val Ser Gly Gly Ser
325 330 335

Ser Glu Ala Gly Leu Val Cys Asp His Leu Leu Gln Leu Glu Gly Gly
340 345 350

Ser Glu Val Leu Arg Ala Arg Thr Glu Trp Arg Pro Lys Leu Thr Asp
355 360 365

Ser Phe Arg Gly Ile Ser Val Ile Pro Ala Glu Pro Arg Val
370 375 380

<210> 64
<211> 1240
<212> DNA

<213> Umbellularia sp.

<400> 64

```

ggcgcgccat ggccaccacc agcctggcct ccgccttctg ctccatgaag gccgtgatgc      60
tggcccgcgga cggccgcggc atgaagcccc gcagctccga cctgcagctg cgcgccggca    120
acgccccccac ctccctgaag atgatcaacg gcaccaagtt cagctacacc gagagcctga    180
agcgcctgcc cgactggtcc atgctgttcg ccgtgatcac caccatcttc agcgccgccg    240
agaagcagtg gaccaacctg gagtggaagc ccaagcccaa gctgccccag ctgctggacg    300
accacttcgg cctgcacggc ctggtgttcc gccgcacctt cgccatccgc tcctacgagg    360
tgggccccga ccgcagcacc tccatcctgg ccgtgatgaa ccacatgcag gaggccaccc    420
tgaaccacgc caagagcgtg ggcatcctgg gcgacggctt cggcaccacc ctggagatgt    480
ccaagcgcga cctgatgtgg gtggtgcgcc gacccacgt ggccgtggag cgctacccca    540
cctggggcgga caccgtggag gtggagtgtt ggatcggcgc cagcggcaac aacggcatgc    600
gccgcgactt cctggtgcgc gactgcaaga ccggcgagat cctgaccgcg tgcacctccc    660
tgagcgtgct gatgaacacc cgcacccgcc gcctgagcac catccccgac gaggtgcgcg    720
gcgagatcgg ccccgcttc atcgacaacg tggccgtgaa ggacgacgag atcaagaagc    780
tgcagaagct gaacgactcc accgccgact acatccaggg cggcctgacc ccccgctgga    840
acgacctgga cgtgaaccag cacgtgaaca acctgaagta cgtggcctgg gtgttcgaga    900
ccgtgcccga cagcatcttc gagtcccacc acatcagctc cttaccctg gagtaccgcc    960
gcgagtgcac ccgcgactcc gtgctgcgca gcctgaccac cgtgagcggc ggcagctccg   1020
aggccggcct ggtgtgcgac cacctgctgc agctggaggg cggcagcgag gtgctgcgcg   1080
cccgaccga gtggcgcccc aagctgaccg actccttccg cggcatcagc gtgatccccg   1140
ccgagccccg cgtgatggac tacaaggacc acgacggcga ctacaaggac cacgacatcg   1200
actacaagga cgacgacgac aagtgactcg agttaattaa                          1240

```

<210> 65

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 65

ccgccgtgct ggacgtggtg 20

<210> 66

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

026172-005010PC - Sequence Listing_1.TXT

<400> 66
 ggtggcgggg tccaggggtgt 20

<210> 67
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 67
 cggccggcgg ctccttcaac 20

<210> 68
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 68
 ggcgctcccg taggtcgggt 20

<210> 69
 <211> 1335
 <212> DNA
 <213> *Chlorella sorokiniana*

<400> 69
 cgcctgcaac gcaagggcag ccacagccgc tcccacccgc cgctgaaccg acacgtgctt 60
 gggcgccctgc cgcctgcctg ccgcatgctt gtgctgggtga ggctgggcag tgctgccatg 120
 ctgattgagg cttggttcat cgggtggaag cttatgtgtg tgctgggctt gcatgccggg 180
 caatgcgcat ggtggcaaga gggcggcagc acttgctgga gctgccgcgg tgcctccagg 240
 tggttcaatc gcggcagcca gagggatttc agatgatcgc gcgtacaggt tgagcagcag 300
 tgtcagcaaa ggtagcagtt tgccagaatg atcggttcag ctgttaatca atgccagcaa 360
 gagaaggggt caagtgcaaa cacgggcatg ccacagcacg ggcaccgggg agtggaatgg 420
 caccaccaag tgtgtgagcag ccagcatcgc cgcctggctg tttcagctac aacggcagga 480
 gtcaccaaac gtaaccatga gctgatcaac actgcaatca tcgggcgggc gtgatgcaag 540
 catgcctggc gaagacacat ggtgtgcgga tgctgccggc tgctgcctgc tgcgcacgcc 600
 gttgagttgg cagcaggctc agccatgcac tggatggcag ctgggctgcc actgcaatgt 660
 ggtggatagg atgcaagtgg agcgaatacc aaaccctctg gctgcttgct gggttgcatg 720
 gcatcgacc atcagcagga gcgcatgcga agggactggc cccatgcacg ccatgccaaa 780
 ccggagcgca ccgagtgtcc aactgtcac caggcccgca agctttgcag aaccatgctc 840
 atggacgcat gtagcgctga cgtcccttga cggcgctcct ctcggtgtg ggaaacgcaa 900
 tgcagcacag gcagcagagg cggcggcagc agagcggcgg cagcagcggc gggggccacc 960

026172-005010PC - Sequence Listing_1.TXT

cttcttgccg ggtcgcgccc cagccagcgg tgatgcgctg atcccaaacg agttcacatt	1020
catttgcatg cctggagaag cgaggctggg gcctttgggc tgggtgcagcc cgcaatggaa	1080
tgccgggaccg ccaggctagc agcaaaggcg cctcccctac tccgcatcga tgttccatag	1140
tgcattggac tgcatttggg tggggcgggc ggctgtttct ttcgtgttgc aaaacgcgcc	1200
agctcagcaa cctgtcccgt ggggtccccc tgccgatgaa atcgtgtgca cgccgatcag	1260
ctgattgccc ggctcgcgaa gtaggcgccc tcctttctgc tcgccctctc tccgtcccg	1320
cactagtggc gcgcc	1335

<210> 70

<211> 1146

<212> DNA

<213> *Umbellularia californica*

<400> 70

atggccacca ccagcctggc ctccgccttc tgctccatga aggccgtgat gctggccccg	60
gacggccgcg gcatgaagcc ccgcagctcc gacctgcagc tgcgcgccgg caacgcccc	120
acctccctga agatgatcaa cggcaccaag ttcagctaca ccgagagcct gaagcgccgtg	180
cccgactggt ccatgctgtt cgccgtgatc accaccatct tcagcgccgc cgagaagcag	240
tggaccaacc tggagtggaa gcccagccc aagctgcccc agctgctgga cgaccacttc	300
ggcctgcacg gcctgggtgtt ccgccgcacc ttcgccatcc gctcctacga ggtgggcccc	360
gaccgcagca cctccatcct ggccgtgatg aaccacatgc aggaggccac cctgaaccac	420
gccaagagcg tgggcacccg gggcgacggc ttcggcacca ccctggagat gtccaagcgc	480
gacctgatgt ggggtggcg ccgcacccac gtggccgtgg agcgctaccc cacctggggc	540
gacaccgtgg aggtggagtg ctggatcggc gccagcggca acaacggcat gcgccgcgac	600
ttcctgggtg gcgactgcaa gaccggcgag atcctgaccc gctgcacctc cctgagcgtg	660
ctgatgaaca ccgcacccg ccgcctgagc accatccccg acgaggtgcg cggcgagatc	720
ggccccgcct tcatcgacaa cgtggccgtg aaggacgacg agatcaagaa gctgcagaag	780
ctgaacgact ccaccgccga ctacatccag ggcggcctga ccccccgtg gaacgacctg	840
gacgtgaacc agcacgtgaa caacctgaag tacgtggcct ggggtgttcga gaccgtgccc	900
gacagcatct tcgagtccca ccacatcagc tccttcaccc tggagtaccg ccgcgagtgc	960
acccgcgact ccgtgctgcg cagcctgacc accgtgagcg gcggcagctc cgaggccggc	1020
ctggtgtgcg accacctgct gcagctggag ggcggcagcg aggtgctgcg cgcgccacc	1080
gagtggcgcc ccaagctgac cgactccttc cgcggcatca gcgtgatccc cgccgagccc	1140
cgcggtg	1146

<210> 71

<211> 1146

<212> DNA

<213> *Cinnamomum camphora*

<400> 71

026172-005010PC - Sequence Listing_1.TXT

atggccacca cctccctggc ctccgccttc tgcagcatga aggccgtgat gctggcccgc	60
gacggccgcg gcatgaagcc ccgctccagc gacctgcagc tgcgcgccgg caacgcccag	120
acctccctga agatgatcaa cggcaccaag ttctcctaca ccgagagcct gaagaagctg	180
cccgactggg ccatgctggt cgccgtgatc accaccatct tctccgccgc cgagaagcag	240
tggaccaacc tggagtggaa gcccagccc aaaaaaaaa agctgctgga cgaccacttc	300
ggcccccacg gcctgggtgtt ccgccgcacc ttcccatcc gcagctacga ggtgggcccc	360
gaccgctcca ccagcatcgt ggccgtgatg aaccacctgc aggaggccgc cctgaaccac	420
gccaagtccg tgggcatcct gggcgacggc ttccggacca ccctggagat gtccaagcgc	480
gacctgatct ggggtggtgaa gcgcacccac gtggccgtgg agcgtaccc cgcctggggc	540
gacaccgtgg aggtggagtg ctgggtgggc gcctccggca acaacggccg ccgccacgac	600
ttcctgggtgc gcgactgcaa gaccggcgag atcctgaccc gctgcacctc cctgagcgtg	660
atgatgaaca ccgcacccg ccgcctgagc aagatccccg aggaggtgcg cggcgagatc	720
ggccccgcct tcatcgacaa cgtggccgtg aaggacgagg agatcaagaa gccccagaag	780
ctgaacgact ccaccgccga ctacatccag ggcggcctga cccccgctg gaacgacctg	840
gacatcaacc agcacgtgaa caacatcaag tacgtggact ggatcctgga gaccgtgccc	900
gacagcatct tcgagagcca ccacatctcc tccttcacca tcgagtaccg ccgcgagtg	960
accatggaca gcgtgctgca gtccctgacc accgtgagcg gcggctcctc cgaggccggc	1020
ctggtgtgcg agcacctgct gcagctggag ggcggcagcg aggtgctgcg cgccaagacc	1080
gagtggcgcc ccaagctgac cgactccttc cgcgcatca gcgtgatccc cgccgagtcc	1140
agcgtg	1146

<210> 72

<211> 72

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 72

atggactaca aggaccacga cggcgactac aaggaccacg acatcgacta caaggacgac	60
gacgacaagt ga	72

<210> 73

<211> 408

<212> DNA

<213> Chlorella vulgaris

<400> 73

ctcgaggcag cagcagctcg gatagtatcg acacactctg gacgctggtc gtgtgatgga	60
ctgttgccgc cacacttgct gccttgacct gtgaatatcc ctgccgcttt tatcaaacag	120
cctcagtgtg tttgatcttg tgtgtacgcg cttttgcgag ttgctagctg cttgtgctat	180

026172-005010PC - Sequence Listing_1.TXT

ttgcgaatac cacccccagc atcccccttc ctcgtttcat atcgcttgca tcccaaccgc	240
aacttatcta cgctgtcctg ctatccctca gcgctgctcc tgctcctgct cactgcccct	300
cgcacagcct tggtttgggc tccgcctgta ttctcctggt actgcaacct gtaaaccagc	360
actgcaatgc tgatgcacgg gaagtagtgg gatgggaaca caaatgga	408

<210> 74
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 74	
ctgggcgacg gcttcggcac	20

<210> 75
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 75	
aagtcgcggc gcatgccgtt	20

<210> 76
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 76	
tacccgcct ggggcgacac	20

<210> 77
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 77	
cttgctcagg cggcgggtgc	20

<210> 78
 <211> 1317
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Page 67

026172-005010PC - Sequence Listing_1.TXT

polynucleotide

<400> 78

```

atggtggccg ccgcccctc cagcgccttc ttccccgtgc ccgcccccg cgctcccc 60
aagcccggca agttcggcaa ctggccctcc agcctgagcc cctccttcaa gcccagtc 120
atccccaacg gcggcttcca ggtgaaggcc aacgacagcg ccaccccaa ggccaacggc 180
tccgccgtga gcctgaagag cggcagcctg aacacccagg aggacacctc ctccagcccc 240
cccccccgca ccttcctgca ccagctgccc gactggagcc gcctgctgac cgccatcacc 300
accgtgttcg tgaagtccaa gcgccccgac atgcacgacc gcaagtccaa gcgccccgac 360
atgctggtgg acagcttcgg cctggagtcc accgtgcagg acggcctggt gttccgccag 420
tcctttctca tccgtccta cgagatcggc accgaccgca ccgccagcat cgagaccctg 480
atgaaccacc tgcaggagac ctccctgaac cactgcaaga gcaccggcat cctgctggac 540
ggcttcggcc gcaccctgga gatgtgcaag cgcgacctga tctgggtggt gatcaagatg 600
cagatcaagg tgaaccgcta cccgccttg ggcgacaccg tggagatcaa caccgcctc 660
agccgcctgg gcaagatcgg catgggccgc gactggctga tctccgactg caacaccggc 720
gagatcctgg tgcgcgccac cagcgcctac gccatgatga accagaagac ccgccgcctg 780
tccaagctgc cctacgaggt gcaccaggag atcgtgcccc tgttcgtgga cagccccgtg 840
atcgaggact ccgacctgaa ggtgcacaag ttcaaggatga agaccggcga cagcatccag 900
aagggcctga cccccggctg gaacgacctg gacgtgaacc agcacgtgtc caacgtgaag 960
tacatcggct ggatcctgga gagcatgccc accgaggtgc tggagacca ggagctgtgc 1020
tccttgcccc tggagtaccg ccgcgagtgc ggccgcgact ccgtgctgga gagcgtgacc 1080
gccatggacc ccagcaagggt gggcgtgctc tcccagtacc agcacctgct gcgcctggag 1140
gacggcaccg ccatcgtgaa cggcgccacc gactggcgcc ccaagaacgc cggcgccaac 1200
ggcgccatct ccaccggcaa gaccagcaac ggcaactccg tgtccatgga ctacaaggac 1260
cacgacggcg actacaagga ccacgacatc gactacaagg acgacgacga caagtga 1317

```

<210> 79

<211> 1170

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 79

```

atggccaccg catccacttt ctggcggttc aatgcccgtc gcggcgacct gcgtcgctcg 60
gcgggctccg ggccccggcg ccagcgagg cccctccccg tgcgcgggcg cgccagctg 120
cccgactgga gccgcctgct gaccgccatc accaccgtgt tcgtgaagtc caagcgcccc 180
gacatgcacg accgcaagtc caagcgcccc gacatgctgg tggacagctt cggcctggag 240
tccaccgtgc aggacggcct ggtgttccgc cagtccttct ccatccgctc ctacgagatc 300

```

026172-005010PC - Sequence Listing_1.TXT

ggcaccgacc gcaccgccag catcgagacc ctgatgaacc acctgcagga gacctccctg	360
aaccactgca agagcaccgg catcctgctg gacggcttcg gccgcaccct ggagatgtgc	420
aagcgcgacc tgatctgggt ggtgatcaag atgcagatca aggtgaaccg ctaccccgcc	480
tggggcgaca ccgtggagat caacacccgc ttcagccgcc tgggcaagat cggcatgggc	540
cgcgactggc tgatctccga ctgcaacacc ggcgagatcc tgggtgcgcgc caccagcgcc	600
tacgccatga tgaaccagaa gacccgccgc ctgtccaagc tgccctacga ggtgcaccag	660
gagatcgtgc ccctgttcgt ggacagcccc gtgatcgagg actccgacct gaaggtgcac	720
aagttcaagg tgaagaccgg cgacagcatc cagaagggcc tgacccccgg ctggaacgac	780
ctggacgtga accagcacgt gtccaacgtg aagtacatcg gctggatcct ggagagcatg	840
cccaccgagg tgctggagac ccaggagctg tgctccctgg ccctggagta ccgccgcgag	900
tcgggccgcg actccgtgct ggagagcgtg accgccatgg accccagcaa ggtgggcgtg	960
cgctcccagt accagcacct gctgcgcctg gaggacggca ccgccatcgt gaacggcgcc	1020
accgagtggc gccccagaa cgccggcgcc aacggcgcca tctccaccgg caagaccagc	1080
aacggcaact ccgtgtccat ggactacaag gaccacgacg gcgactacaa ggaccacgac	1140
atcgactaca aggacgacga cgacaagtga	1170

<210> 80

<211> 1170

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 80

atggctatca agacgaacag gcagcctgtg gagaagcctc cgttcacgat cgggacgctg	60
cgcaaggcca tccccgcgca ctgtttcgag cgctcggcgc ttcgtgggcg cgcccagctg	120
cccgactgga gccgcctgct gaccgccatc accaccgtgt tcgtgaagtc caagcgcccc	180
gacatgcacg accgcaagtc caagcgcccc gacatgctgg tggacagctt cggcctggag	240
tccaccgtgc aggacggcct ggtgttccgc cagtccttct ccatccgctc ctacgagatc	300
ggcaccgacc gcaccgccag catcgagacc ctgatgaacc acctgcagga gacctccctg	360
aaccactgca agagcaccgg catcctgctg gacggcttcg gccgcaccct ggagatgtgc	420
aagcgcgacc tgatctgggt ggtgatcaag atgcagatca aggtgaaccg ctaccccgcc	480
tggggcgaca ccgtggagat caacacccgc ttcagccgcc tgggcaagat cggcatgggc	540
cgcgactggc tgatctccga ctgcaacacc ggcgagatcc tgggtgcgcgc caccagcgcc	600
tacgccatga tgaaccagaa gacccgccgc ctgtccaagc tgccctacga ggtgcaccag	660
gagatcgtgc ccctgttcgt ggacagcccc gtgatcgagg actccgacct gaaggtgcac	720
aagttcaagg tgaagaccgg cgacagcatc cagaagggcc tgacccccgg ctggaacgac	780
ctggacgtga accagcacgt gtccaacgtg aagtacatcg gctggatcct ggagagcatg	840

026172-005010PC - Sequence Listing_1.TXT

cccaccgagg tgctggagac ccaggagctg tgctccctgg ccctggagta ccgccgcgag	900
tgcggccgcg actccgtgct ggagagcgtg accgccatgg accccagcaa ggtgggctg	960
cgctcccagt accagcacct gctgcgcctg gaggacggca ccgccatcgt gaacggcgcc	1020
accgagtggc gcccgaagaa cgccggcgcc aacggcgcca tctccaccgg caagaccagc	1080
aacggcaact ccgtgtccat ggactacaag gaccacgacg gcgactacaa ggaccacgac	1140
atcgactaca aggacgacga cgacaagtga	1170

<210> 81

<211> 1167

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 81

atgacgttcg gggtcgccct cccggccatg ggccgcggtg tctcccttcc ccggcccagg	60
gtcgcggtgc gcgcccagtc ggcgagtcag gttttggaga gcgggcgcgc ccagctgccc	120
gactggagcc gcctgctgac cgccatcacc accgtgttcg tgaagtccaa gcgccccgac	180
atgcacgacc gcaagtccaa gcgccccgac atgctggtgg acagcttcgg cctggagtcc	240
accgtgcagg acggcctggt gttccgccag tccttctcca tccgctccta cgagatcggc	300
accgaccgca ccgccagcat cgagaccctg atgaaccacc tgcaggagac ctccctgaac	360
cactgcaaga gcaccggcat cctgctggac ggcttcggcc gcaccctgga gatgtgcaag	420
cgcgacctga tctgggtggt gatcaagatg cagatcaagg tgaaccgcta cccgcctgg	480
ggcgacaccg tggagatcaa caccgcttc agccgcctgg gcaagatcgg catgggcccgc	540
gactggctga tctccgactg caacaccggc gagatcctgg tgcgcgccac cagcgcctac	600
gccatgatga accagaagac ccgccgcctg tccaagctgc cctacgaggt gcaccaggag	660
atcgtgcccc tggtcgtgga cagccccgtg atcgaggact ccgacctgaa ggtgcacaag	720
ttcaagggtga agaccggcga cagcatccag aagggcctga cccccggctg gaacgacctg	780
gacgtgaacc agcacgtgtc caacgtgaag tacatcggct ggatcctgga gagcatgccc	840
accgaggtgc tggagacca ggagctgtgc tccctggccc tggagtaccg ccgcgagtgc	900
ggccgcgact ccgtgctgga gagcgtgacc gccatggacc ccagcaaggt gggcgtgcgc	960
tcccagtacc agcacctgct gcgcctggag gacggcaccg ccacgtgaa cggcgccacc	1020
gagtggcgcc ccaagaacgc cggcgccaac ggcgccatct ccaccggcaa gaccagcaac	1080
ggcaactccg tgtccatgga ctacaaggac cacgacggcg actacaagga ccacgacatc	1140
gactacaagg acgacgacga caagtga	1167

<210> 82

<211> 1149

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 82

```

atgacgttcg gggtcgccct cccggccatg ggccgcggtg tctcccttcc ccggcccagg      60
gtcgcggtgc gcgcccagtc ggcgagtcag gttttggaga gcgggcgcgc ccccgactgg      120
tccatgctgt tcgccgtgat caccaccatc ttcagcgccg ccgagaagca gtggaccaac      180
ctggagtgga agcccaagcc caagctgccc cagctgctgg acgaccactt cggcctgcac      240
ggcctggtgt tccgcgcac cttcgccatc cgctcctacg aggtgggccc cgaccgcagc      300
acctccatcc tggccgtgat gaaccacatg caggaggcca ccctgaacca cgccaagagc      360
gtgggcatcc tgggcgacgg cttcggcacc accctggaga tgtccaagcg cgacctgatg      420
tgggtggtgc gccgcaccca cgtggccgtg gagcgctacc ccacctgggg cgacaccgtg      480
gaggtggagt gctggatcgg cgccagcggc aacaacggca tgcgccgcga cttcctggtg      540
cgcgactgca agaccggcga gaccccgacc cgctgcacct ccctgagcgt gctgatgaac      600
acccgcaccc gccgcctgag caccatcccc gacgaggtgc gcggcgagat cggccccgcc      660
ttcatcgaca acgtggccgt gaaggacgac gagatcaaga agctgcagaa gctgaacgac      720
tccaccgccc actacatcca gggcggcctg accccccgct ggaacgacct ggacgtgaac      780
cagcacgtga acaacctgaa gtacgtggcc tgggtgttcg agaccgtgcc cgacagcatc      840
ttcgagtccc accacatcag ctccctcacc ctggagtacc gccgcgagtg caccgcgac      900
tccgtgctgc gcagcctgac caccgtgagc ggcggcagct ccgaggccgg cctggtgtgc      960
gaccacctgc tgcagctgga gggcggcagc gaggtgctgc gcgcccgcac cgagtggcgc     1020
cccaagctga ccgactcctt ccgcggcatc agcgtgatcc ccgccgagcc ccgcgtgatg     1080
gactacaagg accacgacgg cgactacaag gaccacgaca tcgactacaa ggacgacgac     1140
gacaagtga                                     1149

```

<210> 83

<211> 1146

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 83

```

atggcttcg cggcattcac catgtcggcg tgccccgcga tgactggcag ggcccctggg      60
gcacgtcgct ccggacggcc agtcgccacc cgctgaggg ggcgcgcccc cgactggtcc      120
atgctgttcg ccgtgatcac caccatcttc agcgccgccc agaagcagtg gaccaacctg      180
gagtggaagc ccaagcccaa gctgccccag ctgctggacg accacttcgg cctgcacggc      240
ctggtgttcc gccgcacctt cgccatccgc tcctacgagg tgggccccga ccgcagcacc      300

```

026172-005010PC - Sequence Listing_1.TXT

tccatcctgg ccgtgatgaa ccacatgcag gaggccaccc tgaaccacgc caagagcgtg	360
ggcatcctgg gcgacggctt cggcaccacc ctggagatgt ccaagcgcgga cctgatgtgg	420
gtggtgcgcc gcacccacgt ggccgtggag cgctacccca cctggggcgga caccgtggag	480
gtggagtgtt ggatcggcgc cagcggcaac aacggcatgc gccgcgactt cctggtgcgc	540
gactgcaaga ccggcgagat cctgaccgcg tgcacctccc tgagcgtgct gatgaacacc	600
cgcacccgcc gcctgagcac catccccgac gaggtgcgcg gcgagatcgg ccccgcttc	660
atcgacaacg tggccgtgaa ggacgacgag atcaagaagc tgcagaagct gaacgactcc	720
accgccgact acatccaggg cggcctgacc ccccgctgga acgacctgga cgtgaaccag	780
cacgtgaaca acctgaagta cgtggcctgg gtgttcgaga ccgtgcccga cagcatcttc	840
gagtccacc acatcagctc cttcaccttg gagtaccgcc gcgagtgcac ccgcgactcc	900
gtgctgcgca gcctgaccac cgtgagcggc ggcagctccg aggccggcct ggtgtgcgac	960
cacctgctgc agctggaggg cggcagcgag gtgctgcgcg cccgcaccga gtggcgcccc	1020
aagctgaccg actccttcgc cggcatcagc gtgatccccg ccgagccccg cgtgatggac	1080
tacaaggacc acgacggcga ctacaaggac cagcacatcg actacaagga cgacgacgac	1140
aagtga	1146

<210> 84

<211> 1155

<212> DNA

<213> Artificial sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 84

atggccaccg catccacttt ctcggcgctt aatgcccgtt gcggcgacct gcgtcgctcg	60
gcggggtccg ggccccggcg cccagcgagg cccctccccg tgcgcgggcg cgccccgac	120
tggatcatgc tgttcgccgt gatcaccacc atcttcagcg ccgccgagaa gcagtggacc	180
aacctggagt ggaagcccaa gcccaagctg cccagctgc tggacgacca cttcggcctg	240
cacggcctgg tgttcgcccg caccttcgcc atccgctcct acgagggtgg ccccgaccgc	300
agcacctcca tcctggccgt gatgaaccac atgcaggagg ccaccctgaa ccacgccaag	360
agcgtgggca tcctgggcca cggcttcggc accaccctgg agatgtccaa gcgcgacctg	420
atgtgggtgg tgcgccgcac ccacgtggcc gtggagcgct accccacctg gggcgacacc	480
gtggaggtgg agtgcctgat cggcgccagc ggcaacaacg gcatgcgccg cgacttcctg	540
gtgcgcgact gcaagaccgg cgagatcctg acccgctgca cctccctgag cgtgctgatg	600
aacacccgca cccgccgctt gagcaccatc cccgacgagg tgcgcggcga gatcggcccc	660
gccttcacgc acaacgtggc cgtgaaggac gacgagatca agaagctgca gaagctgaac	720
gactccaccg ccgactacat ccaggggcggc ctgacccccg gctggaacga cctggacgtg	780
aaccagcacg tgaacaacct gaagtacgtg gcctgggtgt tcgagaccgt gcccgacagc	840

026172-005010PC - Sequence Listing_1.TXT

atcttcgagt cccaccacat cagctccttc accctggagt accgccgcga gtgcacccgc	900
gactccgtgc tgcgcagcct gaccaccgtg agcggcggca gctccgaggc cggcctggtg	960
tgcgaccacc tgctgcagct ggagggcggc agcgaggtgc tgcgcgcccg caccgagtgg	1020
cgccccaagc tgaccgactc cttccgcggc atcagcgtga tccccgccga gccccgcgtg	1080
atggactaca aggaccacga cggcgactac aaggaccacg acatcgacta caaggacgac	1140
gacgacaagt gatga	1155

<210> 85

<211> 1152

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 85

atggctatca agacgaacag gcagcctgtg gagaagcctc cgttcacgat cgggacgctg	60
cgcaaggcca tccccgcgca ctgtttcgag cgctcggcgc ttcgtgggcg cgccccgac	120
tggtccatgc tgttcgccgt gatcaccacc atcttcagcg ccgccgagaa gcagtggacc	180
aacctggagt ggaagcccaa gcccagctg cccagctgc tggacgacca cttcggcctg	240
cacggcctgg tgttccgccc caccttcgcc atccgctcct acgaggtggg ccccgaccgc	300
agcacctcca tcttgccgt gatgaaccac atgcaggagg ccaccctgaa ccacgccaag	360
agcgtgggca tcttgggcga cggcttcggc accaccctgg agatgtccaa gcgcgacctg	420
atgtgggtgg tgcgccgcac ccacgtggcc gtggagcgct accccacctg gggcgacacc	480
gtggaggtgg agtgctggat cggcgccagc ggcaacaacg gcatgcgccg cgacttcctg	540
gtgcgcgact gcaagaccgg cgagatcctg acccgctgca cctccctgag cgtgctgatg	600
aacacccgca cccgccgcct gagcaccatc cccgacgagg tgcgcggcga gatcggcccc	660
gccttcacg acaacgtggc cgtgaaggac gacgagatca agaagctgca gaagctgaac	720
gactccaccg ccgactacat ccagggcggc ctgaccccc gctggaacga cctggacgtg	780
aaccagcacg tgaacaacct gaagtacgtg gcctgggtgt tcgagaccgt gcccgacagc	840
atcttcgagt cccaccacat cagctccttc accctggagt accgccgcga gtgcacccgc	900
gactccgtgc tgcgcagcct gaccaccgtg agcggcggca gctccgaggc cggcctggtg	960
tgcgaccacc tgctgcagct ggagggcggc agcgaggtgc tgcgcgcccg caccgagtgg	1020
cgccccaagc tgaccgactc cttccgcggc atcagcgtga tccccgccga gccccgcgtg	1080
atggactaca aggaccacga cggcgactac aaggaccacg acatcgacta caaggacgac	1140
gacgacaagt ga	1152

<210> 86

<211> 1155

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 86

```

atggccaccg catccacttt ctcggcggtc aatgcccgtc gcggcgacct gcgtcgctcg      60
gcgggctccg ggccccggcg cccagcgagg cccctccccg tgcgcgggcg cgccccgac      120
tggtccatgc tgttcgccgt gatcaccacc atcttctccg ccgccgagaa gcagtggacc      180
aacctggagt ggaagcccaa gcccaccccc ccccgactgc tggacgacca cttcggcccc      240
cacggccttg tggtccgccc caccttcgcc atccgcagct acgagggtgg ccccgaccgc      300
tccaccagca tcgtggccgt gatgaaccac ctgcaggagg ccgccctgaa ccacgccaag      360
tccgtgggca tcctgggcga cggcttcggc accaccctgg agatgtccaa gcgcgacctg      420
atctgggttg tgaagcgcac ccacgtggcc gtggagcgct accccgcctg gggcgacacc      480
gtggaggttg agtgctgggt gggcgccctc ggcaacaacg gccgccgcca cgacttctcg      540
gtgcgcgact gcaagaccgg cgagatcctg acccgctgca cctccctgag cgtgatgatg      600
aacacccgca cccgccgcct gagcaagatc cccgaggagg tgcgcggcga gatcggcccc      660
gccttcatcg acaacgtggc cgtgaaggac gaggagatca agaagcccca gaagctgaac      720
gactccaccg ccgactacat ccagggcggc ctgacccccg gctggaacga cctggacatc      780
aaccagcacg tgaacaacat caagtacgtg gactggatcc tggagaccgt gcccgcagc      840
atcttcgaga gccaccacat ctcttccttc accatcgagt accgccgcga gtgcaccatg      900
gacagcgctg tgcagtccct gaccaccgtg agcggcggtc cctccgaggc cggcctggtg      960
tgcgagcacc tgctgcagct ggagggcggc agcggaggtg tgcgcgcca gaccgagtgg     1020
cgccccaaag tgaccgactc ctccgcggc atcagcgtga tccccgccga gtccagcgtg     1080
atggactaca aggaccacga cggcgactac aaggaccacg acatcgacta caaggacgac     1140
gacgacaagt gatga                                           1155

```

<210> 87

<211> 1893

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 87

```

gaattccttt cttgcgctat gacacttcca gaaaaggta gggcgggctg cgagacggct      60
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc      120
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc      180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta      240
cacaggccac tcgagcttgt gatgcactc cgctaagggg gcgcctcttc ctcttcgttt      300

```

026172-005010PC - Sequence Listing_1.TXT

cagtcacaac ccgcaaacac tagtatggcc accgcatcca ctttctcggc gttcaatgcc	360
cgctgcgggc acctgcgtcg ctcgggcgggc tccggggccc ggcgcccagc gaggcccctc	420
cccgtgcgcg ggcgcgcccc cgactgggtcc atgctgttcg ccgtgatcac caccatcttc	480
tccgcccgcg agaagcagtg gaccaacctg gagtggaagc ccaagcccaa cccccccag	540
ctgctggacg accacttcgg ccccccacggc ctgggtgttcc gccgcacctt cgccatccgc	600
agctacgagg tggggccccga ccgctccacc agcatcgtgg ccgtgatgaa ccacctgcag	660
gaggccgccc tgaaccacgc caagtccgtg ggcacccctg ggcacggcctt cggcaccacc	720
ctggagatgt ccaagcgca cctgatctgg gtggtgaagc gcacccacgt ggccgtggag	780
cgctaccccc cctggggcga caccgtggag gtggagtgtt ggggtgggcgc ctccggcaac	840
aacggccgcc gccacgactt cctgggtgcgc gactgcaaga ccggcgagat cctgacccgc	900
tgcacctccc tgagcgtgat gatgaacacc cgcacccgcc gcctgagcaa gatccccgag	960
gaggtgcgcg gcgagatcgg ccccgccctt atcgacaacg tggccgtgaa ggacgaggag	1020
atcaagaagc cccagaagct gaacgactcc accgccgact acatccaggg cggcctgacc	1080
ccccgctgga acgacctgga catcaaccag cacgtgaaca acatcaagta cgtggactgg	1140
atcctggaga ccgtgcccga cagcatcttc gagagccacc acatctctc cttcaccatc	1200
gagtaccgcc gcgagtgcac catggacagc gtgctgcagt ccctgaccac cgtgagcggc	1260
ggctcctccg aggcgggcct ggtgtgcgag cacctgctgc agctggaggg cggcagcgag	1320
gtgctgcgcg ccaagaccga gtggcgcccc aagctgaccg actccttccg cggcatcagc	1380
gtgatccccg ccgagtccag cgtgatggac tacaaggacc acgacggcga ctacaaggac	1440
cacgacatcg actacaagga cgacgacgac aagtgatgac tcgaggcagc agcagctcgg	1500
atagtatcga cacactctgg acgctggctg tgtgatggac tgttgccgcc acacttgctg	1560
ccttgacctg tgaatatccc tgccgctttt atcaaacagc ctcagtgtgt ttgatcttgt	1620
gtgtacgcgc ttttgcgagt tgctagctgc ttgtgctatt tgcgaatacc acccccagca	1680
tccccctccc tcgtttcata tcgcttgcat cccaaccgca acttatctac gctgtcctgc	1740
tatccctcag cgctgctcct gctcctgctc actgcccctc gcacagcctt ggtttgggct	1800
ccgcctgtat tctcctggta ctgcaacctg taaaccagca ctgcaatgct gatgcacggg	1860
aagtagtggg atgggaacac aaatggaaag ctt	1893

<210> 88

<211> 1887

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 88

gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	60
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	120

026172-005010PC - Sequence Listing_1.TXT

atgggcgctc cgatgccgct ccagggcgag cgctgttttaa atagccaggc ccccgattgc	180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	240
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	300
cagtcacaac ccgcaaacac tagtatggct tccgcggcat tcaccatgtc ggcgtgcccc	360
gcgatgactg gcagggcccc tggggcacgt cgctccggac ggccagtcgc caccgcctg	420
agggggcgcg ccccgactg gtccatgctg ttccgctga tcaccacat cttctccgcc	480
gccgagaagc agtggaccaa cctggagtgg aagcccaagc ccaaccccc ccagctgctg	540
gacgaccact tcggccccca cggcctggtg ttccgccgca cttcggcat ccgcagctac	600
gaggtgggccc ccgaccgctc caccagcatc gtggccgtga tgaaccacct gcaggaggcc	660
gccctgaacc acgccaagtc cgtgggcac cgtggcgacg gcttcggcac caccctggag	720
atgtccaagc gcgacctgat ctgggtggtg aagcgcaccc acgtggccgt ggagcgctac	780
cccgcctggg gcgacaccgt ggaggtggag tgctgggtgg gcgcctccgg caacaacggc	840
cgccgccacg acttcctggt gcgcgactgc aagaccggcg agatcctgac ccgctgcacc	900
tccctgagcg tgatgatgaa cccccgcacc cgccgcctga gcaagatccc cgaggaggtg	960
cgcggcgaga tcggccccgc cttcatcgac aacgtggccg tgaaggacga ggagatcaag	1020
aagccccaga agctgaacga ctccaccgcc gactacatcc agggcggcct gacccccgc	1080
tggaacgacc tggacatcaa ccagcacgtg aacaacatca agtacgtgga ctggatcctg	1140
gagaccgtgc ccgacagcat cttcgagagc caccacatct cctccttcac catcgagtac	1200
cgccgcgagt gcacatgga cagcgtgctg cagtcctga ccaccgtgag cggcggtccc	1260
tccgaggccg gcctggtgtg cgagcacctg ctgcagctgg agggcggcag cgaggtgctg	1320
cgcgccaaga ccgagtggcg cccaagctg accgactcct tccgcggcat cagcgtgatc	1380
cccgccgagt ccagcgtgat ggactacaag gaccacgacg gcgactaaa ggaccacgac	1440
atcgactaca aggacgacga cgacaagtga tgactcgagg cagcagcagc tcggatagta	1500
tcgacacact ctggacgctg gtcgtgtgat ggactgttgc cgccacactt gctgccttga	1560
cctgtgaata tccctgccgc ttttatcaaa cagcctcagt gtgtttgatc ttgtgtgtac	1620
gcgcttttgc gagttgctag ctgcttgtgc tatttgcgaa taccacccc agcatcccct	1680
tccctcgttt catatcgctt gcatcccaac cgcaacttat ctacgtgtc ctgctatccc	1740
tcagcgctgc tcctgctcct gtcactgcc cctcgcacag ccttggtttg ggctccgcct	1800
gtattctcct ggtactgcaa cctgtaaacc agcactgcaa tgctgatgca cgggaagtag	1860
tgggatggga acacaaatgg aaagctt	1887

<210> 89

<211> 3631

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 89

gaattccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgccgc atgcttgtgc tggtagggct gggcagtgc	120
gccatgctga ttgaggcttg gttcatcggg tggaaacctta tgttgtgtgc gggcttgcat	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccaggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgcg acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaattgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgtcatgag acgcatgtag cgctgacgtc ccttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgcctg gagaagcgag gctggggcct ttgggctggt gcagcccga	1080
atggaatgca ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt ccccgctgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcgaagtag gcgcctcctc ttctgctgc cctctctccg	1320
tcccgcact agtatgctgc tgcaggcctt cctgttcctg ctggccggct tcgcccga	1380
gatcagcgcc tccatgacga acgagacgtc cgaccgcccc ctggtgcact tcaccccaa	1440
caagggtggt gggcgcgcca gccaccacgt gtacaagcgc ctgaccaga gcaccaacac	1500
caagtcccc agcgtgaacc agccctaccg caccggcttc cacttccagc cccccaagaa	1560
ctggatgaac gacccaacg gcccattgat ctacaagggc atctaccacc tgttctacca	1620
gtggaacccc aaggcgccg tgtggggcaa catcgtgtgg gccactcca ccagaccga	1680
cctgatcaac tgggaccccc accccccgc catcttcccc agcgccccct tcgacatcaa	1740
cggctgctgg tccggcagcg ccaccatcct gcccaacggc aagcccgtga tcctgtacac	1800
cggcatcgac cccaagaacc agcaggtgca gaacatcgcc gagcccaaga acctgtccga	1860
cccctacctg cgcgagtggg agaagagccc cctgaacccc ctgatggccc ccgacgccgt	1920

026172-005010PC - Sequence Listing_1.TXT

gaacggcatc aacgcctcca gcttccgcga cccaccacc gcctggctgg gccaggacaa	1980
gaagtggcgc gtgatcatcg gctccaagat ccaccgccgc ggcctggcca tcacctacac	2040
cagcaaggac ttctgaagt gggagaagtc ccccgagccc ctgcactacg acgacggcag	2100
cggcatgttg gagtgccccg acttcttccc cgtgacccgc ttcggcagca acggcgtgga	2160
gacctccagc ttcggcgagc ccaacgagat cctgaagcac gtgctgaaga tctccctgga	2220
cgacaccaag cagcactact acaccatcgg cacctacgac cgcgtaagg acaagttcgt	2280
gcccgacaac ggcttcaaga tggacggcac cgccccccgc tacgactacg gcaagtacta	2340
cgccagcaag accttcttcg actccgcca gaaccgccgc atcctgtggg gctggaccaa	2400
cgagtcctcc agcgtggagg acgacgtgga gaagggtgg tccggcatcc agaccatccc	2460
ccgcaagatc tggctggacc gcagcggcaa gcagctgac cagtggcccc tgcgcgaggt	2520
ggagcgcctg cgcaccaagc aggtgaagaa cctgcgcaac aagggtgctga agtccggcag	2580
ccgcctggag gtgtacggcg tgaccgccgc ccaggccgac gtggaggtgc tgttcaaggt	2640
gcgcgacctg gagaaggccg acgtgatcga gccctcctgg accgaccccc agctgatctg	2700
cagcaagatg aacgtgtccg tgaagtccgg cctgggcccc ttcggcctga tgggtgctggc	2760
cagcaagaac ctggaggagt acacctccgt gtacttccgc atcttcaagg cccgccagaa	2820
cagcaacaag tacgtggtgc tgatgtgctc cgaccagtcc cgcagctccc tgaaggagga	2880
caacgacaag accacctacg gcgccttcgt ggacatcaac cccaccagc ccctgagcct	2940
gcgcgccctg atcgaccact ccgtgggtgga gagcttcggc ggcaagggcc gcgcctgcat	3000
cacctccgc gtgtacccca agctggccat cggcaagtcc agccacctgt tcgccttcaa	3060
ctacggctac cagtccgtgg acgtgctgaa cctgaacgcc tggagcatga actccgcca	3120
gatcagcatg gactacaagg accacgacgg cgactacaag gaccacgaca tcgactacaa	3180
ggacgacgac gacaagtgat taattaaccg gctcgaggca gcagcagctc ggatagtatc	3240
gacacactct ggacgctggc cgtgtgatgg actgttgccg ccacacttgc tgccttgacc	3300
tgtgaatatc cctgccgctt ttatcaaaca gcctcagtgt gtttgatctt gtgtgtacgc	3360
gcttttgcca gttgctagct gcttgtgcta tttgcgaata ccacccccag catccccctc	3420
cctcgtttca tatcgcttgc atcccaaccg caacttatct acgctgtcct gctatccctc	3480
agcgtgctc ctgctcctgc tactgcccc tcgcacagcc ttggtttggg ctccgcctgt	3540
attctcctgg tactgcaacc tgtaaaccag cactgcaatg ctgatgcacg ggaagtagtg	3600
ggatgggaac acaaatggaa agcttgagct c	3631

<210> 90

<211> 621

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

026172-005010PC - Sequence Listing_1.TXT

<400> 90

Met Leu Leu Gln Ala Phe Leu Phe Leu Leu Ala Gly Phe Ala Ala Lys
 1 5 10 15

Ile Ser Ala Ser Met Thr Asn Glu Thr Ser Asp Arg Pro Leu Val His
 20 25 30

Phe Thr Pro Asn Lys Gly Trp Gly Arg Ala Ser His His Val Tyr Lys
 35 40 45

Arg Leu Thr Gln Ser Thr Asn Thr Lys Ser Pro Ser Val Asn Gln Pro
 50 55 60

Tyr Arg Thr Gly Phe His Phe Gln Pro Pro Lys Asn Trp Met Asn Asp
 65 70 75 80

Pro Asn Gly Pro Met Ile Tyr Lys Gly Ile Tyr His Leu Phe Tyr Gln
 85 90 95

Trp Asn Pro Lys Gly Ala Val Trp Gly Asn Ile Val Trp Ala His Ser
 100 105 110

Thr Ser Thr Asp Leu Ile Asn Trp Asp Pro His Pro Pro Ala Ile Phe
 115 120 125

Pro Ser Ala Pro Phe Asp Ile Asn Gly Cys Trp Ser Gly Ser Ala Thr
 130 135 140

Ile Leu Pro Asn Gly Lys Pro Val Ile Leu Tyr Thr Gly Ile Asp Pro
 145 150 155 160

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

Pro Tyr Leu Arg Glu Trp Lys Lys Ser Pro Leu Asn Pro Leu Met Ala
 180 185 190

Pro Asp Ala Val Asn Gly Ile Asn Ala Ser Ser Phe Arg Asp Pro Thr
 195 200 205

Thr Ala Trp Leu Gly Gln Asp Lys Lys Trp Arg Val Ile Ile Gly Ser
 210 215 220

Lys Ile His Arg Arg Gly Leu Ala Ile Thr Tyr Thr Ser Lys Asp Phe
 225 230 235 240

Leu Lys Trp Glu Lys Ser Pro Glu Pro Leu His Tyr Asp Asp Gly Ser
 245 250 255

Gly Met Trp Glu Cys Pro Asp Phe Phe Pro Val Thr Arg Phe Gly Ser
 260 265 270

026172-005010PC - Sequence Listing_1.TXT

Asn Gly Val Glu Thr Ser Ser Phe Gly Glu Pro Asn Glu Ile Leu Lys
275 280 285

His Val Leu Lys Ile Ser Leu Asp Asp Thr Lys His Asp Tyr Tyr Thr
290 295 300

Ile Gly Thr Tyr Asp Arg Val Lys Asp Lys Phe Val Pro Asp Asn Gly
305 310 315 320

Phe Lys Met Asp Gly Thr Ala Pro Arg Tyr Asp Tyr Gly Lys Tyr Tyr
325 330 335

Ala Ser Lys Thr Phe Phe Asp Ser Ala Lys Asn Arg Arg Ile Leu Trp
340 345 350

Gly Trp Thr Asn Glu Ser Ser Ser Val Glu Asp Asp Val Glu Lys Gly
355 360 365

Trp Ser Gly Ile Gln Thr Ile Pro Arg Lys Ile Trp Leu Asp Arg Ser
370 375 380

Gly Lys Gln Leu Ile Gln Trp Pro Val Arg Glu Val Glu Arg Leu Arg
385 390 395 400

Thr Lys Gln Val Lys Asn Leu Arg Asn Lys Val Leu Lys Ser Gly Ser
405 410 415

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

Leu Phe Lys Val Arg Asp Leu Glu Lys Ala Asp Val Ile Glu Pro Ser
435 440 445

Trp Thr Asp Pro Gln Leu Ile Cys Ser Lys Met Asn Val Ser Val Lys
450 455 460

Ser Gly Leu Gly Pro Phe Gly Leu Met Val Leu Ala Ser Lys Asn Leu
465 470 475 480

Glu Glu Tyr Thr Ser Val Tyr Phe Arg Ile Phe Lys Ala Arg Gln Asn
485 490 495

Ser Asn Lys Tyr Val Val Leu Met Cys Ser Asp Gln Ser Arg Ser Ser
500 505 510

Leu Lys Glu Asp Asn Asp Lys Thr Thr Tyr Gly Ala Phe Val Asp Ile
515 520 525

Asn Pro His Gln Pro Leu Ser Leu Arg Ala Leu Ile Asp His Ser Val
530 535 540

026172-005010PC - Sequence Listing_1.TXT

Val Glu Ser Phe Gly Gly Lys Gly Arg Ala Cys Ile Thr Ser Arg Val
545 550 555 560

Tyr Pro Lys Leu Ala Ile Gly Lys Ser Ser His Leu Phe Ala Phe Asn
565 570 575

Tyr Gly Tyr Gln Ser Val Asp Val Leu Asn Leu Asn Ala Trp Ser Met
580 585 590

Asn Ser Ala Gln Ile Ser Met Asp Tyr Lys Asp His Asp Gly Asp Tyr
595 600 605

Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
610 615 620

<210> 91
<211> 997
<212> DNA
<213> Prototheca moriformis

<400> 91
cctgtcgatc gaagagaagg agacatgtgt acattattgg tgtgagggcg ctgaatcggc 60
catttttttaa aatgatcacg ctcatgccaa tagacgcggc acataacgac gttcaaacc 120
ccgcaaagc cgcggacaac cccatccctc cacaccccc acacaaagaa cccgccaccg 180
cttaccttgc ccacgaggta ggccctttcgt tgcgcaaac cggcctcggg gatgaatgca 240
tgcccgttcc tgacgagcgc tgcccggggc aacacgctct ttgctgcgt ctccctcaggc 300
ttgggggcct ccttgggcctt ggggtgccgc atgatctgcg cgcacagag aaacgttgct 360
ggtaaaaagg agcgcgggc tgcgcaatat atatataggc atgccaacac agcccaacct 420
cactcgggag cccgtccac ccccccaag tcgctgcct tgacggcata ctgctgcaga 480
agcttcatga gaatgatgcc gaacaagagg ggcacgagga cccaatccc gacatccttg 540
tcgataatga tctcgtgagt ccccatcgtc cgcccgacgc tccggggagc ccgccgatgc 600
tcaagacgag agggccctcg accaggagg gctggcccg gcgggactg gcgtcgaagg 660
tgcgcccgtc gttcgcctgc agtcctatgc caaaaacaa gtcttctgac ggggtgcgtt 720
tgctcccgta cgggcaggca acagaggat tcaccctgg catggggaga tcggcgatcg 780
agctgggata agagatactt ctggcaagca atgacaact gtcaggaccg gaccgtgcca 840
tatatttctc acctagcgcc gcaaaccta acaatttgg agtcactgt cactgagtt 900
cgactggtag ctgaatggag tcgctgctcc actaaacgaa ttgtcagcac cgccagccgg 960
ccgaggaccc gagtcatagc gagggtagta gcgcgcc 997

<210> 92
<211> 753
<212> DNA
<213> Prototheca moriformis

<400> 92

026172-005010PC - Sequence Listing_1.TXT

actaattgca atcgtgcagt aatcatcgat atggtcacaa gtagatcccc tactgacacc	60
ctctcgtaca tgtaggcaat gtcacggcg ccgtcctgct gaccgatgcc gacgtagcag	120
agcagacccg ggccgatctg ggatacgagc cggccctcca cctgcgctcg aggtggaatc	180
aagtaaataa ccaatacact ttctgacacc acacagagtt gcacggacgg tggcgtacct	240
ctacgctcgc gctcttcacg cgctggacga ccgacgcat gagcccggtt ggcttggctt	300
gggctgcaaa aatgcacaac aaacaagtat cagacgctca tggatgcaca cgcgctccca	360
agcacgctca gactaaatat tacagtagct cgtatctgat aagatatcga gacataccgc	420
tcaactcacc cgcaaactgc gccccgccag gtgatgcgca cagggcccca ccatgcgatc	480
catcgcacgc ctctcagagg gcgctatcac gtggccggag agcgttcaca gcgtacgcca	540
ctgtatctgg gcggtatgcg gtccgtcaac atggagacag ataccgcac caccaccttg	600
caagctcttc catattggaa gtagaaaatt gtaattgtat catcgcacga ggggccaact	660
tgccgtcggc gagctgggag acgaacacca cctggacggt gtcgagactc gctcgtgccg	720
tgcgccgggc cgctgggtat ccagaccgtc gcc	753

<210> 93

<211> 1122

<212> DNA

<213> *Prototheca moriformis*

<400> 93

caacgacaac cagcaggcaa ctcggtcagc gacccaacac gcgagtcaaa ttgttgctg	60
ttcttgccct gtctatttac tgtgatagca agactgtcgg tcagtcaata ccgcggtgcg	120
cacgtcgggg tgccaagcct agcagagcac gggacggctg gtgctgtgcg ccagctcagc	180
tcgcttcgcg accaattgta ggaccggcaa agtcacaaa acatgccagc ggtgcgattc	240
aattggatcat gagctctaca aaattgtttt gtgcgtcgcg caggtatcca acggcgcggc	300
agagaaagtt tgacagctct cgatttcacg tcggaaaaat ggggagaatt tatgacacac	360
aagtgcgcag gcggcccagg cgccagcat attctggcgt gacctgggcc gccacaaaa	420
tgcttgatg cactctaaaa taattatatt tgccatgaac aagggaagag ttaccgcacc	480
cagccctaga cttgggagcc cgagcaaggt tacgtcaagc caccttcgcc catcgcccaa	540
ctccgtattc cccgacagcc gcacgtggcc ctgcgggaa tgaaccctga atcggcatca	600
cgccacgcgt tcgccaatcg ttccgctctc tggcttcacg ggcctgcgcc ttcacgtcgt	660
ggtcacgaca gtgcattcat acttccattt gcacctcggc acacactttt acgcatcgcc	720
tacccttgct gcggcagctt agggtcactt tgcagccatg ggacagtgtt acaccaccgt	780
cgggtgcgca agctatttca agtgaaccgt gggcggaata aaggaaatgta cactgtctca	840
accgactcct acaattgttt accatgcaga tcagagctcg acggccatca tcgagcaggt	900
gtggggcctt ggtggcgcg cgcggggccc cagggcgctg caggcattga tggcactctg	960
agactttcgc acgcgcacga gggaccccat caagagaaga gtgtgtcttt atgtcccat	1020
tcatgatgat gtatcttgtg attgtcgcag tttggcaagt ttaaccggat cgccgctcca	1080

026172-005010PC - Sequence Listing_1.TXT

ggtgtggcgt ggcggatttt tctaggggtg cttgagcagt cg 1122

<210> 94
<211> 574
<212> DNA
<213> *Prototheca moriformis*

<400> 94
ggcccagggc cctgcggatg gcccacacca gatctagcct ctcttatgcc atgcccgcct 60
cgctgcccgt cgtatccccc cgccgatccg cgcgtagggg accgcggcct gaccacgcc 120
acgaaagagc tttgtcctc aatttctcgc caacagaacc gtatcaaag ctcaacgcct 180
atcccgaaca atccgtattc acaccaaatac gagtataccg gactggtttg cctagtcttg 240
aaggaaatga tcccgtccat gctcgggaag gggagcgggc ggaggatcct actcatctct 300
gaaatgggat tgggtccgaag atgggttggg caagcacgtg ccaaacccca gcgagttgct 360
gacgagcagg ctcatccaat cccccggcga atcctccctc acgccccgca tgcatacaag 420
tccctccac acgccccctc ccatccattt tcgcttggtc cgaacgcgag cggcgctcag 480
gcggaccact tgctccgcag cgccgtctgg gtctccaccc cacagcggct ttgctgccag 540
aggcaccccc cttgccccac ctctcttgc agcc 574

<210> 95
<211> 1096
<212> DNA
<213> *Prototheca moriformis*

<400> 95
ccaggcaggc ggtaggggtg ccgattgctt gagcgaattg gaagatataa tttttgtgg 60
tgtccctgga cgctgtttgt ggcgctcctt tttggagaag attgctggg ggagctttcc 120
atgtaccacg ctctcttctg aaaggattct ggccgagtc tgatgagccc aaagaaaaca 180
cctgcctttc agtgctggca ctctgaaaac gtcaacagat gattatacat gtcacaaaag 240
gcagccgatt aggaacggga gctctggccg ttcgtttggc tgcctgggct gattgaagtg 300
atccaccctg ttcgaatgaa ggcggtcag tcgaattatc gaccggagct gtcgggaagg 360
cgtccggggc agagtgaagt gctgcggcct ggttgtcgtt caaaaagacc ccggtagccc 420
aacaatcacg aacgaaagga atataattgc ttgcatacta tacattcagt ttctatgtgg 480
cgggtagaca agtctcatgg gcttctaaag gctgtccctt gaaggctact tataaaaact 540
tgctgcgcca tggcacggat cgcgcttgcg caggctgcaa ccctgcgcgc aagggtcaaat 600
acacagcaaa agatactaac agaatttcta aaaacattta aatatttgtt tcgaccagcc 660
aattgtggtc gtaggcacgc aaaagacttt gttttgcgcc caccgagcat ccacgtggc 720
agtcaagcca gtccgatgtg cattgcgtgg cagcatcgag gagcatcaaa aacctcgtgc 780
acgcttttct gtcaatcatc atcaaccact ccaccatgta taccgatgc atcgcggtgc 840
gcagcgcgcc acgcgtccca gaccgccc aaaaaccagc agcggcgaaa gcaaattctc 900
acttgcccga aaccccgagc agcggcattc acacgtgggc gaaaaccca cttgccctaa 960

026172-005010PC - Sequence Listing_1.TXT

caggcgatg tctgctgtca cgatgcctga caacgggtatt atagatatatac actgattaat	1020
gtttgagtgt gtgcgagtcg cgaatcagga atgaattgct agtaggcact ccgaccgggc	1080
gggggcccag ggacca	1096

<210> 96
 <211> 1075
 <212> DNA
 <213> Prototheca moriformis

<400> 96	
ggccgacagg acgcgcgtca aagggtgctgg gcgtgtatgc cctggctcggc aggtcgttgc	60
tgttgctgcg ctctgtggttc cgcaaccctg attttggcgt cttattcttg cgtggcaagc	120
gctgacgccc gcgagccggg ccggcggcga tgcggtgtct cacggctgcc gagctccaag	180
ggaggcaaga gcgcccggat cagctgaagg gctttacacg caaggtagc cgcctcctgc	240
aaggctgcgt ggtggacttg aacctgtagg tcctctgctg aagttcctcc actacctcac	300
caggcccagc agaccaaagc acaggctttt cagggtccgtg tcatccactc taaaacactc	360
gactacgacc tactgatggc cctagattct tcatacaaa tgcctgagac acttgctcag	420
aattgaaact ccctgaaggg accaccagag gccctgagtt gttccttccc cccgtggcga	480
gctgccagcc aggtgtgacc tgtgatcgag gctggcgcca aaataggctt cgtgtgctca	540
ggtcatggga ggtgcaggac agctcatgaa acgccaacaa tcgcacaatt catgtcaagc	600
taatcagcta tttcctcttc acgagctgta attgtcccaa aattctgggc taccgggggt	660
gattccttctg gtacggggccc ttccctcaac cctaggtatg cgcgcatgcg gtcgccgcgc	720
aactcgcgcg agggccgagg gtttgggacg ggccgtcccc aaatgcagtt gcacccggat	780
gcgcggcgcc tttcttgcca taatttatgc aatggactgc tctgcaaatt tctgggtctg	840
tcgccaaccc taggatcagc ggcgtaggat ttcgtaatca ttcgtcctga tggggagcta	900
ccgactaccc taatatcagc ccggctgcct gacgccagcg tccacttttg cgtacacatt	960
ccattcgtgc ccaagacatt tcattgtggt gcgaagcgtc cccagttacg ctcacctgtt	1020
tcccgaacct cttactgttc tgtcgacaga gcggggccac aggccggctc cagcc	1075

<210> 97
 <211> 772
 <212> DNA
 <213> Prototheca moriformis

<400> 97	
tcaccagcgg acaaagcacc ggtgtatcag gtccgtgtca tccactctaa agagctcgac	60
tacgacctac tgatggccct agattcttca tcaaaaacgc ctgagacact tgcccaggat	120
tgaactccc tgaagggacc accaggggccc ctgagttggt ctttcccccc gtggcgagct	180
gccagccagg ctgtacctgt gatcggggct ggcgggaaaa caggcttcgt gtgctcaggt	240
tatgggaggt gcaggacagc tcattaaacg ccaacaatcg cacaattcat ggcaagctaa	300
tcagttatct cccattaacg agctataatt gtcccaaat tctgggtctac cgggggtgat	360

026172-005010PC - Sequence Listing_1.TXT

ccttcgtgta cgggcccttc cctcaaccct aggtatgcgc acatgcggtc gccgcgcaac	420
gcgcgcgagg gccgaggggt tgggacgggc cgtcccgaaa tgcagttgca cccggatgcg	480
tggcaccttt tttgcgataa tttatgcaat ggactgctct gcaaaattct ggctctgtcg	540
ccaaccctag gatcagcggg gtaggatttc gtaatcattc gtcctgatgg ggagctaccg	600
actgccctag tatcagcccc actgcctgac gccagcgtcc acttttgtgc acacattcca	660
ttcgtgcca agacatttca ttgtggtgcg aagcgtcccc agttacgctc acctgatccc	720
caacctcctt attgttctgt cgacagagtg ggcccagagg ccggtcgcag cc	772

<210> 98

<211> 991

<212> DNA

<213> *Protoheca moriformis*

<400> 98

cgaaggggtc tgcacgatt cgcgcggtct ggaggccagc gtgactgctc gcgaaaatgc	60
tctgccgtgt cgggctctgg ctggggcggc cagagatctc accgtgccac acgcaactgc	120
cgcaactctgt gcccgccacc tggcgcgcac atgcgacctc ttccccgtca taccctctcc	180
tcatgtgatc tttccacacg agtgacgcag gtgcgcggag tggaggggaat caggacgttt	240
tcaaggtacc tgctcgagcc gtaccaacag ctgccgccc gcaagggaaga gatcgaggca	300
gagattgccc ggctggaggc ccggataacg gagctcaaga gcaagctgtc cgagtgcgac	360
cgcccagggtg cacgtgtcga ctgcctatga catgtactcg acacaacatg aggaattcat	420
cgaatttgta ggaagcgggc attggtacgg gagtgggaaa gcgaaaaaac ctccctccgg	480
cagtgccatc tgccggagtc gaacgttgat agggttctcg tgacagggtg tgacctctca	540
gccttgcatc aattaaacgc tatagacatt atcagtaacc gtgaatccc cattggatgc	600
caccgcgcg accattgggg acctgcatta cagatctagg tgagatgaca gcgaggcaac	660
ttcgccccgc ggcccagctt gcggcgcacc aatattgggtc acgggaagcc acacaccgac	720
cataaatgaa tacttgtaag ctatgtcaac cgatcaatgg cgtcgaaagt gtgccacgag	780
gatccatctg gcggggcggc gtggcgcaca agcgcagtcg caatttctcg gacctctg	840
acctaggccc agcgcgcgg gagaaatccc cggcgggtcc tccacgcagt aaccctaattg	900
agtatcgagc gccgaccatt tacaccatcg cccccgaaat ccttccgaca ttattattat	960
cttttagatc ttggaacaga ctctgccaac c	991

<210> 99

<211> 1347

<212> DNA

<213> *Prototheca moriformis*

<400> 99

agagagcggg ggtggggttg tgagggtggg ttgctgacca ggagctcgcg tcgccgagcg	60
cgactcgcac acggtccagt tcccccccc tccgccccaa cgcaagcctc ccattctgat	120
gcctttccgg ccacctatac tatttcttag ttcgctgtaa catccagacc gtcctgaata	180

026172-005010PC - Sequence Listing_1.TXT

ataacaatgc cctgtgtcaa gtgcattcct aaaaaaattc tgtcccaacc aacaatccca	240
cctgaaatac caccagccct gcccagtaca ctcttccaat accatctccc tacctccacg	300
cgcaagcgac ccccatgcgc gaccaggctc gaaagtgatt tatgacttga gacgagcgag	360
tggcggcgcg gtcgactgcc ttttcatcac gtgccgtacg tcggcgaccg ctagggcttt	420
gcacggcaac gcacggcttc gccaaaccga ccagccagga cctcgactac tctaccgca	480
attcgctca agaagtcgcc aaatgtgcc tacaccattc cttacagcac tgttcaaact	540
tgatgccaat ttgacattc gggttgctcg ttggctgcgc ccacatcggc cgtgagtga	600
gcaggcggga tcggacacgg aggacgcggc gtcacgcccc gaacgcagcc cgtaactcta	660
catcaacacg acgtgttgcg taatcccgcc cggctgcgca tcgtgccaac ccattcgcga	720
tggatggctg gaaaatggtg tgccaactgc cctgagggag gctctcgcga aacgggcacg	780
tccctgaaac cgaaactgtg gccttgctcg cggccacgca agcacgtgga ccctaaacac	840
caagaaaatc agtaaacaag gttgacatcc tctacgggcg aattgtttgc ccaacccttc	900
atcgcacact gccattataa tgcattctagc tcggcgacaa gtttagaaaa ggcaggctgc	960
attgttccat ttcgccgtgg cggcgtgggt gccatttta cgaggtttg gctcccgggc	1020
agcgaccgag ccaggtcgag tccctctcgc ccgtcgacaa tgttgcgaa cccacaagcg	1080
gctaacaaca acttgatggt acctgtacac tgccaattcc ttcttccccg gccgaggttt	1140
acacgtgatg gccatggctt cgcattcagg ccgacttccc attccgactt tccagagggt	1200
ccgcggacgc tgggggttg ctgcctgagg cccacccttt gtccccgcg tcccgacaaa	1260
cacaattgcg ttacataagg gggagccgcc cccgttcaga gtgcagaaat ctttcactat	1320
attttccagt cgtcagcgaa atcaagt	1347

<210> 100

<211> 1180

<212> DNA

<213> Prototheca moriformis

<400> 100

gatggtgggg tgtctgcctt gggctgggtg atggaggctg gtggtgcgcg ggtttcctga	60
tgcattctat ctacgcagtg tcatggtgtc cattccacac accagtacac ctttacta	120
aggatccatc cctccttccc tcttcaggac tacatggacc ccacgagcta cgcaccgggc	180
tttctcaaaa acgtcaagggt catgtttgac atgcgggacg tgggtggacga cgtgcaagggt	240
gcgtccggag tgcgcgcaaa tgagcaagtc gggcaatgtg tcgggggtggg caccggggct	300
ggagatccgc gatccccgag aaaacgccgt accaccccc gcgctattcc ctcgattgcg	360
cgcagatgtg gtgaccgaca cgggggacaa cctggcggac atggggcgcc ggacctggaa	420
gcacgccaag tcgcacacgg ggaggctcgt gcagtcccc ccacgtacc tcaagggtct	480
ctttggtcgc gatccaaagt acgctggtgg catggcatgc ccgaaatgaa catcatgtgt	540
gatctccgat tgccaatggc cacctccacg gaccaccttg caggcggaag cgcaatccag	600

026172-005010PC - Sequence Listing_1.TXT

ggccccgagcc tgacgaggac ggagactcct cgtccagcgc ggggtccccg acccgacgca	660
gcagccgacc cctgctaacc cggcaacgat cggaccagca accttgctgt agttccgac	720
cgtgatgacg ggcattgccg ccgctcgatc cgctttgatg actgtctatt atttgcgcg	780
agccccctcg gaaccctacc ccgctcttgc aagccccctg catcggagat cctcgtgcgc	840
ccgcatgac cccactggat tgcccaacat ccttctttat cgtgtaaaat gtgattcctc	900
ggctgcaatc gactggcctt cgcttctggc cccaagaggg ctcgaacgtg cggcagcgag	960
ggcgctgaca caccgaagcc ctagggcttt caacgtcggc tgccaggccg gataggggga	1020
tcgcctcctt tccaccaccc acctacgagg gattcgagtc ggcttccagc tcagctattc	1080
ggccgcgccc ccggccctgc agacgtcctc cagtttccga acaggctcgt ctcagaacac	1140
ctgccgcggc tgcgatacgg caggctctca aagcgtcgac	1180

<210> 101

<211> 1263

<212> DNA

<213> *Prototheca moriformis*

<400> 101

cgcgtggagc ggtgcgtgcg gatgccgcgc gcctgccaag gccttttgta tgcctggcct	60
gggaagtttc ctgactgaag catcttcaag atgctctctc acgaccagcg acaccaacac	120
cgtcactttt tgccccctct gccgcagggt ccactttcta ctttgacgtc ttctccaggc	180
ggtacattgc gggactgagc gccaattcgg ccaagaacag cgctgtcgac ttgaggaggc	240
aggggtccgt cgactctgcc gagtgacacg ccttcgaccc gactgtacta cggcctgctg	300
aagagtgggt ctcgccggcc ggcgtgaccg gccctgtgcc cacaatcgac catctattcg	360
ctccttgatc tctggcgccg tcaattgccc gcgacttgac ggcaactggc tcgatcgagt	420
cgtattgaaa aagcacgttt tgcctacag ggccgcggtc cgttaccaac gtggttctcg	480
ttaggttttc gtcgggcggg ggtgcgcgaa ctgtccgatg ccatcccggc aaacccagc	540
aaggtcgcca gtctggttct gacgcaatag agtgcgtttt gggccagtct aaaaattcgt	600
ctggcatgac gtggctccac atcgtacccg gagcctgcct tggtaatgtg aggcaccggt	660
gccaactcca ttatggcagg catcgagcgc gcagggtgagt acatgacctt ccgtgaattg	720
ggaaggcgag cttgtgtaac gcctgcgatc gtgccagtga ggcatcgtaa actcaaaata	780
ttttgtagaa agtgtctgat gcctgggtgag gctgcgtagg gcaagggcaa gcccttgga	840
gatgggtaat ggggccggac ctcaaacag caaccccgcg tcccccttag ggccccctgag	900
gctcgatggc agggccagcg agcccgcggc caaagggcgc catccacgg tcgccccacg	960
actccacggg tcctatacct catcttgaat ggcactaaaa actatagaat atcgggcact	1020
ggtgggcgtc tggggtacag ctggccgagc gcagtggcaa accctagggt ccgcctcaag	1080
ggcgattccc gggtaatga cacgcaagca agatcacatg gcgcgggtccg cctcgcggct	1140
ccacaccag gccctagttt cgcaacccat aaatatcgcc ccgataccat cataagccag	1200
caaataattt ttatcagag ttccaaacct cctcagctgt gggaaaccag cccactctga	1260

026172-005010PC - Sequence Listing_1.TXT

acg

1263

<210> 102
<211> 1400
<212> DNA
<213> Prototheca moriformis

<400> 102
ccgagcagtt catggccaag tacaaggact agagaccgga ggtcggtagg ctgaatggag 60
ctggcgctcg cgtgcgcgac gtgcacgcga tgcgatacta cgaccccaca aacgcatgcc 120
tcccatcttg atgcctttcc ggccatttat actattttctc atttcgctgt aacatcttga 180
ataatagaat tgccctgtgt caagtggatt ccaagaaata ttctgtccca aaaaaacaac 240
ccaacctgaa aacaacctca aataccacca gccctgcca cctgcccagt acacttttcc 300
aataccatct ccctaccttc acgcgcaagc ggcacccatg cgcgaccagg ctcgaaagga 360
tttcacgact caggacgagc gagtggcggc gcgaccgcct gcctgttcgt cacgtgccgt 420
acgtcggcga ccgctagagc tttgcctggc aacccccggc ttcgtcaacc cggccagcca 480
ggatctcgac cactctaccg cgaaatcgcc tcaagaagtc gccaaaagt ccgtaacca 540
tgcttcgcag cgctgttcaa acttgatgcc aatcttgaca atcaggttgc tcgttggtg 600
cgtccacatc ggccgtgatt gcagcaggcg gggatcggac acggaggacg cggcgtcacg 660
ccgcgaacgc agcccgtaac tctacatcaa cgcgatatgt tgcgtaatcc cgcccggctg 720
cgcattgtga caaccattc gcgatggatg gtcggaaaat ggtgtgcaa ctgccctgag 780
ggactctctc gcgaaacggg cacgtcccgt tatccgaaac tgtggcatgg ccttgctgac 840
cacgcaagca cgtggaccct aacaccacga aaataagtaa aaaaggttga catcctctac 900
gagcgaattg tttgctcgac cttcatcgc aactgtcat tataatgcat ctagctcggc 960
gacaagttta aaaaaggcag gctgcattat tccattttgc cgtggcggca tgggtgcca 1020
ttttatgagg tttgggtctt tgggcagcga ccgagccagg ttgagtcct ctcgcccgtc 1080
gacaacgttc caaagcccat aagtggctaa taaacaact gatggtacct gtacactgcc 1140
agttccttct tccccggccg aggtttacac gtgatggcca tggcttcgcg tttcaggctg 1200
acttcccatt ccgactttcc agaggggtccg cggacgccgg gggttggctg cgtgaggccc 1260
acccttggtt ccccgctcc cgacaaacac aattgctgta cataaggggg aagccgcccc 1320
ccgttcagag tgcaaacatc tttcattata tttttcagtc gtcagcgaat tcaagtatgt 1380
cgctgacagg catgaaggcc 1400

<210> 103
<211> 3681
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

026172-005010PC - Sequence Listing_1.TXT

<400> 103

```

gccctttgtc atcgtttggca tgctttttgc gtatgtacca tatgttgaat gtataatacgt      60
aacggttgac cgtctgagat gcgagctttg ggtcttgtca aatgcgtggc cgcacggctc      120
cctcgcaccc agccccgagg cgtcgcgcac ctggcgagga gcagaccac gccaaagaaag      180
tctagtccag catgtaacaa catcaggcaa tgtgacgttt tcggttcccg atttctctgc      240
cgctctttga cggcaggcac gggcgagcaa ccggcggcgc tcgcgtcagg cacgatggat      300
gcggcgctgc ccacctgtca atgtacccca ccagtctgtc gatcgctaca agcaaccttg      360
tgctccacat tcccacttgc agacagtcta gtcgattttg ccaagctgga tgtgaggatt      420
ggccatatct tggaggccaa gattcacccg gatgctgatg ggtacgtacg cgagccaggc      480
aggcagctgc gttgactttc tgattggcac aaagcttttg ctactctcaa taccaaccac      540
gtgccccttc tgcacacctg cttccttctg atgaccactc gccacgcatg tcgcagtctg      600
tacgtcgagc agatcgacct cggcgaggag gggggccctc gcaccatcgt gagtggcctg      660
gtccggcacg tgaccctgga ggaccttgtc ggccggcggg tgggtggtgct ggccaacctc      720
aagcctcgga gcatgcgcgg ggtcaaactc gctgggatgc tgctctgcgc cgccaacgcg      780
gatcacaccg cggtgaggcc gctgcgggtc ccggacgccg ccgtgacggg ggagcgggtc      840
tgggcggggg acgaggcact cctgtccacg gagcctgcca caccaatca ggtaaggaca      900
cgttatttgt gcgcatggtg cgaatgcgtg gtctgacctg ctgtgggtat gtgttggtgg      960
attggaaacc gaatgagggc cgttcaggat tgagcccttg gccccaccct gctcctctc      1020
tcacgcccgc aggtccagaa gaagaaaatc tgggaggcag tacagccgct gctgagagtg      1080
aacgcccagg ggatcgctac tgtggcagga gaggctatgg tgaccagtgc gggggcactg      1140
accgcgcca cgctggttga cgccgcgatt tcctgacgcg agcgactgat tcttgacctt      1200
tgagaagcca ccacagcacc attttcattg ttcatccttg atttcagtac gacttctcac      1260
catttcagta ctgtaggacc cccaaaatag tgtgatcacg ctcgcaaggc acctgtgtga      1320
tcacggggaa gggcgaattc ctttcttgcg ctatgacact tccagcaaaa ggtagggcgg      1380
gctgcgagac ggcttcccg cgtgcatgc aacaccgatg atgcttcgac cccccgaagc      1440
tccttcgggg ctgcatgggc gctccgatgc cgctccaggg cgagcgctgt ttaaatagcc      1500
aggccccga ttgcaaagac attatagcga gctaccaaag ccatattcaa acacctagat      1560
cactaccact tctacacagg cactcagagc ttgtgatcgc actccgctaa gggggcgcct      1620
cttcctcttc gtttcagtca caaccgcaa acggcgcgcc atgctgctgc aggccttcct      1680
gttcctgctg gccggcttcg ccgccaagat cagcgcctcc atgacgaacg agacgtccga      1740
ccgccccctg gtgcacttca cccccaacaa gggctggatg aacgaccca acggcctgtg      1800
gtacgacgag aaggacgcca agtggcacct gtacttcag tacaaccga acgacaccgt      1860
ctgggggacg cccttgttct ggggccacgc cacgtccgac gacctgacca actgggagga      1920
ccagcccatc gccatcgccc cgaagcgcaa cgactccggc gccttctccg gctccatggt      1980
ggtggactac aacaacacct ccggcttctt caacgacacc atcgaccgc gccagcgctg      2040

```

026172-005010PC - Sequence Listing_1.TXT

cgtaggccatc tggacctaca acacccccgga gtccgaggag cagtacatct cctacagcct	2100
ggacggcggc tacaccttca ccgagtacca gaagaacccc gtgctggccg ccaactccac	2160
ccagttccgc gacccgaagg tcttctggtg cgagccctcc cagaagtgga tcatgaccgc	2220
ggccaagtcc caggactaca agatcgagat ctactcctcc gacgacctga agtcctggaa	2280
gctggagtcc gcggtcgcca acgagggcctt cctcggctac cagtacgagt gccccggcct	2340
gatcgaggtc cccaccgagc aggaccccag caagtcctac tgggtgatgt tcatctccat	2400
caacccccgc gccccggccg gcggctcctt caaccagtac ttcgtcggca gcttcaacgg	2460
caccacttc gaggccttcg acaaccagtc ccgctgggtg gacttcggca aggactacta	2520
cgccttcag accttcttca acaccgaccc gacctacggg agcgccctgg gcatcgctg	2580
ggcctccaac tgggagtact ccgccttcgt gccaccaac ccctggcgct cctccatgtc	2640
cctcgtgcgc aagttctccc tcaacaccga gtaccaggcc aacccggaga cggagctgat	2700
caacctgaag gccgagccga tcctgaacat cagcaacgcc ggcccctgga gccggttcgc	2760
caccaacacc acgttgacga aggccaacag ctacaacgtc gacctgtcca acagaccgg	2820
caccctggag ttcgagctgg tgtacgccgt caacaccacc cagacgatct ccaagtccgt	2880
gttcgcggac ctctccctct ggttcaaggg cctggaggac cccgaggagt acctccgat	2940
gggcttcgag gtgtccgcgt cctccttctt cctggaccgc gggaacagca aggtgaagtt	3000
cgtgaaggag aacccctact tcaccaaccg catgagcgtg aacaaccagc ctttcaagag	3060
cgagaacgac ctgtcctact acaaggtgta cggcttgctg gaccagaaca tcctggagct	3120
gtacttcaac gacggcgacg tcgtgtccac caacacctac ttcatgacca ccgggaacgc	3180
cctgggctcc gtgaacatga cgacgggggt ggacaacctg ttctacatcg acaagttcca	3240
ggtgcgcgag gtcaagtgat taattaactc gaggcagcag cagctcggat agtatcgaca	3300
cactctggac gctggtcgtg tgatggactg ttgccgccac acttgctgcc ttgacctgtg	3360
aatatccctg ccgcttttat caaacagcct cagtgtgttt gatcttgtgt gtacgcgctt	3420
ttgcgagttg ctagctgctt gtgctatttg cgaataccac cccagcatc ccctccctc	3480
gtttcatatc gcttgcaccc caaccgcaac ttatctacgc tgcctgcta tccctcagcg	3540
ctgctcctgc tcctgctcac tgcccctcgc acagccttg tttgggctcc gcctgtattc	3600
tcctgggtact gcaacctgta aaccagcact gcaatgctga tgcacgggaa gtagtgggat	3660
gggaacacaa atggaaagct t	3681

<210> 104

<211> 3850

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 104

026172-005010PC - Sequence Listing_1.TXT

tttggcccccg ctttccagct ccg gatctgc tggcg tccgc cgcgagacgt gacatcgcac	60
gtcgccggga gcgccagctt gatcacttgg cagggggccg tgctctacaa ataccaggcc	120
ccg cggcggt cagttcgcac atccaatacc tgccgagcca tcttgccctac actttttatc	180
gactcctcta ctctgttcgc gagagcgctc ggtccagggt tggaattcgc cgaattcagc	240
tcgatcagtc gcttctgcaa ctgatctcgg ccgttcgcag actgcctttt ctcagcttgt	300
caggtagcga gttgttggtt tatatttatt cgatttcac tctgttgcat gtcttggtcg	360
tgctgtgcgt tctttctggg ccgcgctgtc gggtcgcatg ggctagctgt actcatgtta	420
gtcatgccgg tccgaccttg ttcgaggaag gccccacact gagcgtgccc tctttctaca	480
ccccctgtgc agaaattaga tagaaagcag aattcctttc ttgcgctatg acacttccag	540
caaaaggtag ggcgggctgc gagacggctt cccggcgctg catgcaacac cgatgatgct	600
tcgaccccc gaagctcctt cggggctgca tgggcgctcc gatgccgctc cagggcgagc	660
gctgtttaaa tagccaggcc cccgattgca aagacattat agcgagctac caaagccata	720
ttcaaacacc tagatcacta ccacttctac acaggccact cgagcttgtg atcgactcc	780
gctaaggggg cgctctttcc tcttcgtttc agtcacaacc cgcaaacggc gcgcatgct	840
gctgcaggcc ttctgtttcc tgctggccgg cttcgccgcc aagatcagcg cctccatgac	900
gaacgagacg tccgaccgcc ccctggtgca cttcaccccc aacaagggtt ggatgaacga	960
ccccaacggc ctgtggtacg acgagaagga cgccaagtgg cacctgtact tccagtacaa	1020
cccgaacgac accgtctggg ggacgccctt gttctggggc cacgccacgt ccgacgacct	1080
gaccaactgg gaggaccagc ccatcgccat cgccccgaag cgcaacgact ccggcgctt	1140
ctccggctcc atggtggtgg actacaacaa cacctccggc ttcttcaacg acaccatcga	1200
cccgcgccag cgctgcgtgg ccatctggac ctacaacacc ccggagtccg aggagcagta	1260
catctcctac agcctggacg gcggctacac cttcacccag taccagaaga accccgtgct	1320
ggccgccaac tccacccagt tccgcgaccc gaaggctctt tggtagcagc cctcccagaa	1380
gtggatcatg accgcggcca agtcccagga ctacaagatc gagatctact cctccgacga	1440
cctgaagtcc tggaagctgg agtccgcgtt cgccaacgag ggcttcctcg gctaccagta	1500
cgagtgcctc ggcctgatcg aggtccccac cgagcaggac ccagcaagt cctactgggt	1560
gatgttcac tccatcaacc ccggcgcccc ggccggcggc tccttcaacc agtacttcgt	1620
cggcagcttc aacggcaccc acttcgaggc cttcgacaac cagtcccgcg tgggtggactt	1680
cggcaaggac tactacgccc tgcagacctt cttcaacacc gacccgacct acgggagcgc	1740
cctgggcatc gcgtgggcct ccaactggga gtactccgcc ttcgtgcca ccaaccctg	1800
gcgctcctcc atgtccctcg tgcgaagtt ctccctcaac accgagtacc aggccaaccc	1860
ggagacggag ctgatcaacc tgaaggccga gccgatcctg aacatcagca acgccggccc	1920
ctggagccgg ttcgccacca acaccaggtt gacgaaggcc aacagctaca acgtcgacct	1980
gtccaacagc accggcaccc tggagtcca gctggtgtac gccgtcaaca ccaccagac	2040

026172-005010PC - Sequence Listing_1.TXT

gatctccaag tccgtgttcg cggacctctc cctctggttc aagggcctgg aggaccccga	2100
ggagtacctc cgcattgggt tgcaggtgtc cgcgtcctcc ttcttcctgg accgcgggaa	2160
cagcaagggtg aagttcgtga aggagaaccc ctacttcacc aaccgcatga gcgtgaacaa	2220
ccagcccttc aagagcgaga acgacctgtc ctactacaag gtgtacggct tgctggacca	2280
gaacatcctg gagctgtact tcaacgacgg cgacgtcgtg tccaccaaca cctacttcac	2340
gaccaccggg aacgccctgg gctccgtgaa catgacgacg ggggtggaca acctgttcta	2400
catcgacaag ttccagggtg gcgagggtcaa gtgattaatt aactcgaggc agcagcagct	2460
cggatagtat cgacacactc tggacgctgg tcgtgtgatg gactgttgcc gccacacttg	2520
ctgccttgac ctgtgaatat ccctgccgct tttatcaaac agcctcagtg tgtttgatct	2580
tgtgtgtacg cgctttttgc agttgctagc tgcttgtgct atttgcgaa accacccccca	2640
gcatccccct ccctcgtttc atatcgcttg catcccaacc gcaacttacc tacgctgtcc	2700
tgctatccct cagcgtgct cctgctcctg ctactgccc ctgcacagc cttggtttgg	2760
gctccgcctg tatttcctg gtactgcaac ctgtaaacca gcaactgcaat gctgatgcac	2820
gggaagtagt gggatgggaa cacaatgga ccgacacgcc cccggcccag gtccagttct	2880
cctgggtctt ccagaggccc gtcgccatgt aaagtggcag agattggcgc ctgattcgat	2940
ttggatccaa ggatctccaa tcggtgatgg ggactgagtg cccaactacc acccttgac	3000
tatcgtcctc gcactattta ttcccacctt ctgctcgccc tgccgggcca ttgcgggcgt	3060
ttctgccctt gacgtatcaa tttcgcccct gctggcgcca ggattcttca ttctaataag	3120
aactcactcc cgccagctct gtacttttcc tgccggggccc ctgcatggct tgttcccaat	3180
gcttgctcga tcgacggcgc ccattgcccc cggcgctgcc gcacccatgt gaagaaacac	3240
ggaagagtgc gaagactgga agtgaattaa gactataaga agaggtagc agggattctc	3300
agggtgctctt aggaacggct tttccttcgc caagagaaac tgctactgct cgtgtcgcca	3360
cgggtggtaaa gccgccccat ctgcgatcca ccaggcccat ccgcggaact gcgatcagcc	3420
tgctggatcc ggactgccga cctgaccgct cgcattccacc attacaacc tccaattgga	3480
caccactccc acgtcctaaa gttcaccatg caagctgacg gatcgattc gccgatgcac	3540
tcgcctgcca cagagggtgt cgcttcggac tagcgtgcag gcgccccgag gccaccagca	3600
tgacccgatg gaagcgggca cggccgctgc tccaggctgc tggctcgctc agaccatag	3660
caacctccgc tgcgtcccta aatgtcacac agagcgtctt tgatgggtac ggatgggaga	3720
gaatctgatt gggcattgct ggtgcagtgc aggaagatgg caagtgcaca gtcagtcatt	3780
ctgtacaaac tggtgcctcg tagtattgac tcgtatagtg catagtatca tgcattgctg	3840
ttacttgcaa	3850

<210> 105

<211> 3108

<212> DNA

<213> Artificial Sequence

026172-005010PC - Sequence Listing_1.TXT

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 105

tttgcccccg ctttccagct ccgcatctgc tggcgtccgc cgcgagacgt gacatcgcac	60
gtcgccggga gcgccagctt gatcacttgg cagggggccg tgctctacaa ataccaggcc	120
ccgcggcggt cagttcgcac atccaatacc tgccgagcca tcttgccctac actttttatc	180
gactcctcta ctctgttcgc gagagcgctc ggtccaggct tgggaattcgc cgaattcagc	240
tcgatcagtc gcttctgcaa ctgatctcgg ccgttcgcag actgcctttt ctcagcttgt	300
caggtagcga gttgttgttt tatatttatt cgatttcatac tgtgttgcat gtcttggtcg	360
tgctgtgcgt tctttctggg ccgcgctgtc gggtcgcatg ggctagctgt actcatgtta	420
gtcatgccgg tccgaccttg ttcgaggaag gccccacact gagcgtgccc tctttctaca	480
ccccctgtgc agaaattaga tagaaagcaa tgctgctgca ggcccttcctg ttcctgctgg	540
ccggcttcgc cgccaagatc agcgccctca tgacgaacga gacgtccgac cgccccctgg	600
tgcacttcac cccaacaag ggctggatga acgaccccaa cggcctgtgg tacgacgaga	660
aggacgcaa gtggcacctg tacttccagt acaacccgaa cgacaccgtc tgggggacgc	720
ccttggttctg gggccacgcc acgtccgacg acctgaccaa ctggggaggac cagcccatcg	780
ccatcgcccc gaagcgcaac gactccggcg ctttctccgg ctccatgggtg gtggactaca	840
acaacacctc cggcttcttc aacgacacca tcgacccgcg ccagcgctgc gtggccatct	900
ggacctacaa cccccggag tccgaggagc agtacatctc ctacagcctg gacggcggct	960
acaccttcac cgagtaccag aagaaccccg tgctggccgc caactccacc cagttccgcg	1020
acccgaaggt cttctggtac gagccctccc agaagtggat catgaccgcg gccaagtccc	1080
aggactacaa gatcgagatc tactcctccg acgacctgaa gtcctggaag ctggagtccg	1140
cgttcgcaa cgagggcttc ctcggctacc agtacgagtg ccccggcctg atcgaggctc	1200
ccaccgagca ggaccccagc aagtcctact gggatgatgt catctccatc aacccggcg	1260
ccccggccgg cggtctcttc aaccagtact tcgtcggcag cttcaacggc acccacttcg	1320
aggccttcga caaccagtcc cgcgtggtgg acttcggcaa ggactactac gccctgcaga	1380
ccttcttcaa caccgacctg acctacggga gcgccctggg catcgctgg gcctccaact	1440
gggagtactc cgccttcgtg cccaccaacc cctggcgctc ctccatgtcc ctcgtgcgca	1500
agttctccct caacaccgag taccaggcca acccgagac ggagctgac aacctgaagg	1560
ccgagccgat cctgaacatc agcaacgccg gccctggag ccggttcgcc accaacacca	1620
cgttgacgaa ggccaacagc tacaacgtcg acctgtccaa cagcaccggc accctggagt	1680
tcgagctggg gtacgccgtc aacaccaccc agacgatctc caagtccgtg ttcgcggacc	1740
tctccctctg gttcaagggc ctggaggacc ccgaggagta cctccgcatg ggcttcgagg	1800
tgtccgcgtc ctcttcttc ctggaccgcg ggaacagcaa ggtgaagttc gtgaaggaga	1860
accctactt caccaaccgc atgagcgtga acaaccagcc cttcaagagc gagaacgacc	1920

026172-005010PC - Sequence Listing_1.TXT

tgtcctacta caaggtgtac ggcttgctgg accagaacat cctggagctg tactttcaacg	1980
acggcgacgt cgtgtccacc aacacctact tcatgaccac cggaacgcc ctgggctccg	2040
tgaacatgac gacgggggtg gacaacctgt tctacatcga caagttccag gtgcgcgagg	2100
tcaagtgacc gacacgcccc cggcccaggt ccagttctcc tgggtcttcc agaggcccg	2160
cgccatgtaa agtggcagag attggcgcct gattcgattt ggatccaagg atctccaatc	2220
ggtgatgggg actgagtgcc caactaccac ccttgacta tcgtcctcgc actatttatt	2280
cccaccttct gctcgccctg cggggcgatt gcgggcgttt ctgcccttga cgtatcaatt	2340
tcgcccctgc tggcgcgagg attcttcatt ctaataagaa ctactcccg ccagctctgt	2400
acttttctctg cggggccctt gcatggcttg ttcccaatgc ttgctcgatc gacggcgccc	2460
attgccacg gcgctgccgc atccatgtga agaaacacgg aagagtgcga agactggaag	2520
tgaattaaga gtataagaag aggtaccaag ggattctcag gtgctcttag gaacggcttt	2580
tccttcgcca agagaaactg ctactgctcg tgctgccacg gtggtcaagc cgccccatct	2640
gcatccacc agggccatcc gcggactcgc gatcagcctg ctggatccgg actgccgacc	2700
tgaccgctcg catccaccat tacaaccctc caattggaca ccactcccac gtcctaaagt	2760
tcacatgca agctgatcga tcgcattcgc cgatgcactc gcctgccaca gaggtgtgcg	2820
cttcggacta gcgtgcaggc gccccgaggc caccagcatg caccgatgga agcgggcacg	2880
gccgctgctc caggctcgtg gctcgtcag acccatagca acctccgctg cgtccctaaa	2940
tgtcacacag agcgtctttg atgggtacgg atgggagaga atctgattgg gcattgctgg	3000
tgcagtgcag gaagatggca agtgcacagt cagtcagtgt gtacaaactg gtgcctcgta	3060
gtattgactc gtatagtgc tagtatcatg catggtcgtt acttgcaa	3108

<210> 106

<211> 559

<212> DNA

<213> *Chlorella luteoviridis*

<400> 106

tgttgaagaa tgagccggcg acttatagga agtggcgtgg ttaaggaatt ttccgaagcc	60
caagcgaaag caagttttta aaatagcgat atttgtcact ttttatggac ccgaaccgg	120
gtgatctaac cgtgaccagg atgaagcttg ggtaacacca agtgaaggct cgaactcttc	180
gatcttttaa aatcgtgaga tgagttgcgg ttagtaggtg aaatgccaat cgaactcgga	240
gctagctggg tctccccgaa atgtgttgag gcgcagcgat gaatgacaaa acaaatagta	300
cgggtgtaggg gtaaagcact gtttcggtgc gggctgcgaa agcggtagca aatcgtggca	360
aactcagaat actacgcttg tataaccattc atcagtgaga ctgtggggga taagctccat	420
agtcaagagg gaaacagccc agatcaccag ttaaggcccc aaaatgacag ctaagtggca	480
aaggagggtga aagtgcagaa acaaccagga ggtttgccca gaagcagcca tcctttaaag	540
agtgcgtaat agctcactg	559

026172-005010PC - Sequence Listing_1.TXT

<210> 107
 <211> 1841
 <212> DNA
 <213> *Cuphea palustris*

<400> 107
 gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct 60
 tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc 120
 atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc 180
 aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta 240
 cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt 300
 cagtcacaac ccgcaaacac tagtatggcc accgcatcca ctttctcggc gttcaatgcc 360
 cgctgcggcg acctgcgtcg ctccggcggc tccgggcccc ggcgcccagc gagggccctc 420
 cccgtgcgcg ggcgcgccag catgctgctg tcggcggtga ccacggtctt cggcgtggcc 480
 gagaagcagt ggcccatgct ggaccgcaag tccaagcgcc ccgacatgct ggtcgagccc 540
 ctgggcgtgg accgcatcgt ctacgacggc gtgagcttcc gccagtcgtt ctccatccgc 600
 agctacgaga tcggcgccga ccgcaccgcc tcgatcgaga cgctgatgaa catgttccag 660
 gagacctccc tgaaccactg caagatcatc ggcctgctga acgacggctt cggccgcacg 720
 cccgagatgt gcaagcgga cctgatctgg gtcgtgacca agatgcagat cgaggtgaac 780
 cgctaccca cgtagggcgga caccatcgag gtcaacacgt gggtagcgc ctccgggcaag 840
 cacggcatgg gccgcgactg gctgatctcc gactgccaca ccggcgagat cctgatccgc 900
 gcgacgagcg tctgggcgat gatgaaccag aagacccgcc gcctgtcgaa gatcccctac 960
 gaggtgcgcc aggagatcga gccccagttc gtcgactccg ccccgatgat cgtggacgac 1020
 cgcaagttcc acaagctgga cctgaagacg ggcgacagca tctgcaacgg cctgaccccc 1080
 cgctggacgg acctggacgt gaaccagcac gtcaacaacg tgaagtacat cggctggatc 1140
 ctgcagtcgg tccccaccga ggtgttcgag acgcaggagc tgtcggcct gaccctggag 1200
 taccgccgag agtgcggccg cgactccgtg ctggagagcg tcacggccat ggacccctcg 1260
 aaggagggcg accgctccct gtaccagcac ctgctgcgcc tggaggacgg cgcggacatc 1320
 gtgaagggcc gcaccgagtg gcgccccaa aacgccggcg ccaagggcg catcctgacg 1380
 ggcaagacca gcaacggcaa ctcgatctcc tgactcgagt taattaactc gaggcagcag 1440
 cagctcggat agtatcgaca cactctggac gctggctgctg tgatggactg ttgccgccac 1500
 acttgctgcc ttgacctgtg aatatccctg ccgcttttat caaacagcct cagtgtgttt 1560
 gatcttgtgt gtacgcgctt ttgcgagttg ctgctgctt gtgctatttg cgaataccac 1620
 cccagcatc cccttccctc gtttcatac gcttgcatcc caaccgcaac ttatctacgc 1680
 tgcctgcta tccctcagcg ctgctcctgc tcctgctcac tgcccctcgc acagccttgg 1740
 tttgggctcc gcctgtattc tcctgggtact gcaacctgta aaccagcact gcaatgctga 1800
 tgcacgggaa gtagtgggat gggaacacaa atggaaagct t 1841

026172-005010PC - Sequence Listing_1.TXT

<210> 108
<211> 1010
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 108
ggcgcgcccc gctgccccgac tggagcatgc tgctggccgc gatcaccacc ctgttcctgg 60
cggccgagaa gcagtggatg atgctggact ggaagcccaa gcgccccgac atgctggtgg 120
accccttcgg cctggggccgc ttcgtgcagg acggcctggt gttccgcaac aacttcagca 180
tccgcagcta cgagatcggc gcggaccgca ccgccagcat cgagaccctg atgaaccacc 240
tgcaggagac cgccctgaac cacgtgaaga gcgtgggcct gctggaggac ggcctgggca 300
gcacccgcga gatgagcctg cgcaacctga tctgggtggt gaccaagatg caggtggcgg 360
tggaccgcta ccccacctgg ggcgacgagg tgcaggtgag cagctgggcg accgccatcg 420
gcaagaacgg catgcgccgc gagtggatcg tgaccgactt ccgcaccggc gagaccctgc 480
tgcgcgccac cagcgtgtgg gtgatgatga acaagctgac ccgccgcatc agcaagatcc 540
ccgaggaggt gtggcacgag atcgccccca gcttcacatga cgcgcccccc ctgcccaccg 600
tggaggacga cggccgcaag ctgacccgct tcgacgagag cagcgccgac ttcattccgca 660
agggcctgac cccccgctgg agcgacctgg acatcaacca gcacgtgaac aacgtgaagt 720
acatcggtcg gctgctggag agcgcgcccc ccgagatcca cgagagccac gagatcgcca 780
gcctgaccct ggagtaccgc cgcgagtgcg gccgcgacag cgtgctgaac agcgccacca 840
aggtgagcga cagcagccag ctgggcaaga gcgccgtgga gtgcaaccac ctggtgcgcc 900
tgcagaacgg cggcgagatc gtgaagggcc gcaccgtgtg gcgccccaaag cgccccctgt 960
acaacgacgg cgccgtggtg gacgtgcccc ccaagaccag ctgactcgag 1010

<210> 109
<211> 5472
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 109
ggtacccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct 60
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc 120
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc 180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accatttcta 240
cacaggccac tcgagcttgt gatcgcatc cgctaagggg gcgcctcttc ctcttcgttt 300
cagtcacaac ccgcaaactc tagaatatca atgctgctgc aggccttcct gttcctgctg 360

026172-005010PC - Sequence Listing_1.TXT

gccggcttcg ccgccaagat cagcgctcc atgacgaacg agacgtccga ccgccccctg	420
gtgcacttca cccccaacaa gggctggatg aacgacccca acggcctgtg gtacgacgag	480
aaggacgcca agtggcacct gtacttccag tacaacccga acgacaccgt ctgggggacg	540
cccttgttct gggggcacgc cacgtccgac gacctgacca actgggagga ccagcccatc	600
gccatcgccc cgaagcgcaa cgactccggc gccttctccg gctccatggg ggtggactac	660
aacaacacct ccggcttctt caacgacacc atcgacccgc gccagcgctg cgtggccatc	720
tggacctaca acaccccgga gtccgaggag cagtacatct cctacagcct ggacggcggc	780
tacaccttca ccgagtacca gaagaacccc gtgctggccg ccaactccac ccagttccgc	840
gacccgaagg tcttctggta cgagccctcc cagaagtga tcatgaccgc ggccaagtcc	900
caggactaca agatcgagat ctactcctcc gacgacctga agtcctggaa gctggagtcc	960
gcgttcgcca acgagggctt cctcggctac cagtacgagt gccccggcct gatcgaggtc	1020
cccaccgagc aggaccccag caagtcctac tgggtgatgt tcatctccat caaccccggc	1080
gccccggccg gcggctcctt caaccagtac ttcgtcggca gcttcaacgg caccacttc	1140
gaggccttcg acaaccagtc ccgcgtggtg gacttcggca aggactacta cgccctgcag	1200
accttcttca acaccgaccc gacctacggg agcgccctgg gcatcgctg ggcctccaac	1260
tgggagtact ccgccttcgt gccaccaac ccctggcgct cctccatgtc cctcgtgcgc	1320
aagttctccc tcaacaccga gtaccaggcc aacccggaga cggagctgat caacctgaag	1380
gccgagccga tcctgaacat cagcaacgcc ggccccctgga gccggttcgc caccaacacc	1440
acgttgacga aggccaacag ctacaacgtc gacctgtcca acagcaccgg caccctggag	1500
ttcgagctgg tgtacgccgt caacaccacc cagacgatct ccaagtccgt gttcgcggac	1560
ctctccctct gggtcaaggg cctggaggac cccgaggagt acctccgcat gggcttcgag	1620
gtgtccgcgt cctccttctt cctggaccgc gggaaacagca aggtgaagtt cgtgaaggag	1680
aacccctact tcaccaaccg catgagcgtg aacaaccagc ctttcaagag cgagaacgac	1740
ctgtcctact acaaggtgta cggcttgctg gaccagaaca tcctggagct gtacttcaac	1800
gacggcgacg tcgtgtccac caacacctac ttcatgacca ccgggaacgc cctgggctcc	1860
gtgaacatga cgacgggggt ggacaacctg ttctacatcg acaagttcca ggtgcgcgag	1920
gtcaagtgac aattggcagc agcagctcgg atagtatcga cacactctgg acgctggctg	1980
tgtgatggac tggtgccgcc acacttgctg ccttgacctg tgaatatccc tgccgctttt	2040
atcaaacagc ctcagtgtgt ttgatcttgt gtgtacgcgc ttttgcgagt tgctagctgc	2100
ttgtgctatt tgcgaatacc acccccagca tccccctccc tcgtttcata tcgcttgcac	2160
cccaaccgca acttatctac gctgtcctgc tatccctcag cgctgctcct gctcctgctc	2220
actgcccctc gcacagcctt ggtttgggct ccgcctgtat tctcctggta ctgcaacctg	2280
taaaccagca ctgcaatgct gatgcacggg aagtagtggg atgggaacac aaatggagga	2340
tcccgcgtct cgaacagagc gcgcagagga acgctgaagg tctcgctct gtcgcacctc	2400

026172-005010PC - Sequence Listing_1.TXT

agcgcggcat acaccacaat aaccaccta cgaatgcgct tggttcttcg tccattagcg	2460
aagcgtccgg ttcacacacg tgccacgttg gcgaggtggc aggtgacaat gatcggtgga	2520
gctgatggtc gaaacgttca cagcctaggg atatcgaatt ccgcctgcaa cgcaagggca	2580
gccacagccg ctcccacccg ccgctgaacc gacacgtgct tgggcgcctg ccgcctgcct	2640
gccgcatgct tgtgctgggtg aggctgggca gtgctgccat gctgattgag gcttggttca	2700
tcgggtggaa gcttatgtgt gtgctgggct tgcattgccg gcaatgcgca tgggtggcaag	2760
agggcggcag cacttgctgg agctgccg cggtccctcag gtggttcaat cgcggcagcc	2820
agagggattt cagatgatcg cggtacagg ttgagcagca gtgtcagcaa aggtagcagt	2880
ttgccagaat gatcgggttca gctgttaatc aatgccagca agagaagggg tcaagtgcga	2940
acacgggcat gccacagcac gggcaccggg gagtggaatg gcaccaccaa gtgtgtgcga	3000
gccagcatcg ccgcctggct gtttcagcta caacggcagg agtcatccaa cgtaaccatg	3060
agctgatcaa cactgcaatc atcgggctgg cggtgatgcaa gcatgcctgg cgaagacaca	3120
tgggtgtcgg atgctgccgg ctgctgcctg ctgcgcacgc cggtgagttg gcagcaggct	3180
cagccatgca ctggatggca gctgggctgc cactgcaatg tgggtgatag gatgcaagtg	3240
gagcgaatac caaacctct ggctgcttgc tgggttgcat ggcacgcac catcagcagg	3300
agcgcattcg aagggactgg ccccatgcac gccatgccaa accggagcgc accgagtgtc	3360
cacactgtca ccaggcccg aagctttgca gaaccatgct catggacgca tgtagcgtg	3420
acgtcccttg acggcgctcc tctcgggtgt gggaaacgca atgcagcaca ggcagcagag	3480
gcggcggcag cagagcgcg gcagcagcg cgggggccac cttcttgcg gggctcgcgc	3540
ccagccagcg gtgatgcgct gatcccaaac gagttcacat tcatttgcatt gcctggagaa	3600
gcgaggctgg ggcctttggg ctggtgcagc ccgcaatgga atgcgggacc gccaggctag	3660
cagcaaaggc gcctccccta ctccgcatcg atgttccata gtgcattgga ctgcatttgg	3720
gtggggcggc cggctgtttc tttcgtgttg caaaacgcgc cagctcagca acctgtccc	3780
tgggtccccc gtgccgatga aatcgtgtgc acgccgatca gctgattgcc cggctcgcga	3840
agtaggcgcc ctcttttctg ctccgctct ctccgtccc ccactagtat ggccaccgca	3900
tccactttct cggcgttcaa tgcccgtgc ggcgacctgc gtcgctcggc gggctccggg	3960
ccccggcgcc cagcgaggcc cctccccgtg cgcgggcgcg ccagctgcc cgactggagc	4020
cgcttgcgta ccgccatcac caccgtgttc gtgaagtcca agcgcgccga catgcacgac	4080
cgcaagtcca agcgcgccga catgctgggtg gacagcttcg gcctggagtc caccgtgcag	4140
gacggcctgg tgttccgcca gtccttctcc atccgctcct acgagatcgg caccgaccgc	4200
accgccagca tcgagaccct gatgaaccac ctgcaggaga cctccctgaa ccactgcaag	4260
agcaccggca tcctgctgga cggcttcggc cgcaccctgg agatgtgcaa gcgcgacctg	4320
atctgggtgg tgatcaagat gcagatcaag gtgaaccgct accccgcctg gggcgacacc	4380
gtggagatca acaccgctt cagccgcctg ggcaagatcg gcatgggccg cgactggctg	4440

026172-005010PC - Sequence Listing_1.TXT

atctccgact gcaacaccgg cgagatcctg gtgcgcgcca ccagcgcccta cgccatgatg	4500
aaccagaaga cccgccgcct gtccaagctg ccctacgagg tgcaccagga gatcgtgccc	4560
ctgttcgttg acagccccgt gatcgaggac tccgacctga aggtgcacaa gttcaagggtg	4620
aagaccggcg acagcatcca gaagggcctg acccccggct ggaacgacct ggacgtgaac	4680
cagcacgtgt ccaacgtgaa gtacatcggc tggatcctgg agagcatgcc caccgagggtg	4740
ctggagaccc aggagctgtg ctccctggcc ctggagtacc gccgcgagtg cggccgcgac	4800
tccgtgctgg agagcgtgac cgccatggac ccagcaagg tgggcgtgcg ctcccagtac	4860
cagcacctgc tgcgcctgga ggacggcacc gccatcgtga acggcgccac cgagtggcgc	4920
cccaagaacg ccggcgccaa cggcgccatc tccaccggca agaccagcaa cggcaactcc	4980
gtgtccatgg actacaagga ccacgacggc gactacaagg accacgacat cgactacaag	5040
gacgacgacg acaagtgact cgaggcagca gcagctcgga tagtatcgac acactctgga	5100
cgctggtcgt gtgatggact gttgccgcca cacttgctgc cttgacctgt gaatatccct	5160
gccgctttta tcaaacagcc tcagtgtgtt tgatcttggtg tgtacgcgct tttgcgagtt	5220
gctagctgct tgtgctatctt gcgaatacca cccccagcat ccccttccct cgtttcatat	5280
cgcttgcatc ccaaccgcaa cttatctacg ctgtcctgct atccctcagc gctgctcctg	5340
ctcctgctca ctgccccctg cacagccttg gtttgggctc cgcctgtatt ctcttggtac	5400
tgcaacctgt aaaccagcac tgcaatgctg atgcacggga agtagtggga tgggaacaca	5460
aatggaaagc tt	5472

<210> 110

<211> 5451

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 110

ggtacccttt cttgcgtat gacacttcca gcaaaaggta gggcgggctg cgagacggct	60
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	120
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	240
cacaggccac tcgagcttgt gatcgcactc cgctaagggg gcgcctcttc ctcttcgttt	300
cagtcacaac ccgcaaactc tagaatatca atgctgctgc aggccttcct gttcctgctg	360
gccggcttcg ccgccaagat cagcgcctcc atgacgaacg agacgtccga ccgccccctg	420
gtgcacttca cccccaacaa gggctggatg aacgacccca acggcctgtg gtacgacgag	480
aaggacgcca agtggcacct gtacttccag tacaaccgga acgacaccgt ctgggggacg	540
cccttgttct ggggccacgc cacgtccgac gacctgacca actgggagga ccagcccatc	600

026172-005010PC - Sequence Listing_1.TXT

gccatcgccc cgaagcgcaa cgactccggc gccttctccg gctccatggg ggtggactac	660
aacaacacct ccggcttctt caacgacacc atcgacccgc gccagcgctg cgtggccatc	720
tggacctaca acaccccgga gtccgaggag cagtacatct cctacagcct ggacggcggc	780
tacaccttca ccgagtacca gaagaacccc gtgctggccg ccaactccac ccagttccgc	840
gacccgaagg tcttctggta cgagccctcc cagaagtgga tcatgaccgc ggccaagtcc	900
caggactaca agatcgagat ctactcctcc gacgacctga agtcctggaa gctggagtcc	960
gcgttcgcca acgagggctt cctcggctac cagtacgagt gccccggcct gatcgaggtc	1020
cccaccgagc aggaccccag caagtcctac tgggtgatgt tcatctccat caaccccggc	1080
gccccggccg gcggctcctt caaccagtac ttcgtcggca gcttcaacgg caccacttc	1140
gaggccttcg acaaccagtc ccgcgtggtg gacttcggca aggactacta cgccctgcag	1200
accttcttca acaccgaccc gacctacggg agcgccctgg gcatcgcgct ggccctcaac	1260
tgggagtact ccgccttcgt gccaccaac ccctggcgct cctccatgtc cctcgtgcgc	1320
aagttctccc tcaacaccga gtaccaggcc aacccggaga cggagctgat caacctgaag	1380
gccgagccga tctgaacat cagcaacgcc ggcccctgga gccggttcgc caccaacacc	1440
acgttgacga aggccaacag ctacaacgtc gacctgtcca acagcaccgg caccctggag	1500
ttcgagctgg tgtacgccgt caacaccacc cagacgatct ccaagtccgt gttcgcggac	1560
ctctccctct ggttcaaggg cctggaggac cccgaggagt acctccgcat gggcttcgag	1620
gtgtccgcgt cctccttctt cctggaccgc gggaacagca aggtgaagtt cgtgaaggag	1680
aacccctact tcaccaaccg catgagcgctg aacaaccagc ctttcaagag cgagaacgac	1740
ctgtcctact acaaggtgta cggcttgctg gaccagaaca tcttgagct gtacttcaac	1800
gacggcgacg tcgtgtccac caacacctac ttcatgacca ccgggaacgc cctgggctcc	1860
gtgaacatga cgacgggggt ggacaacctg ttctacatcg acaagttcca ggtgcgcgag	1920
gtcaagtgac aattggcagc agcagctcgg atagtatcga cacactctgg acgctggctg	1980
tgtgatggac tgttgccgcc aacttgctg ccttgacctg tgaatatccc tgccgctttt	2040
atcaaacagc ctcaagtgtgt ttgatcttgt gtgtacgcgc ttttgcgagt tgctagctgc	2100
ttgtgctatt tgcaataacc acccccagca tccccttccc tcgtttcata tcgcttgcac	2160
cccaaccgca acttatctac gctgtcctgc tatccctcag cgctgctcct gctcctgctc	2220
actgcccctc gcacagcctt ggtttgggct ccgcctgtat tctcctggta ctgcaacctg	2280
taaaccagca ctgcaatgct gatgcacggg aagtagtggg atgggaacac aaatggagga	2340
tcccgcgtct cgaacagagc gcgcagagga acgctgaagg tctcgcctct gtcgcacctc	2400
agcgcgccat acaccacaat aaccacctga cgaatgcgct tggttcttcg tccattagcg	2460
aagcgtccgg ttcacacacg tgccacgttg gcgaggtggc aggtgacaat gatcggtgga	2520
gctgatggtc gaaacgttca cagcctaggg atatcgaatt ccgcctgcaa cgcaagggca	2580
gccacagccg ctcccacccg ccgctgaacc gacacgtgct tgggcgcctg ccgcctgcct	2640

026172-005010PC - Sequence Listing_1.TXT

gccgcatgct tgtgctggtg aggctgggca gtgctgccat gctgattgag gcttgggttca	2700
tcgggtggaa gcttatgtgt gtgctgggct tgcattgccg gcaatgcgca tgggtggcaag	2760
agggcggcag cacttgctgg agctgccgag gtgcctccag gtggttcaat cgcggcagcc	2820
agagggattt cagatgatcg cgcgtacagg ttgagcagca gtgtcagcaa aggtagcagt	2880
ttgccagaat gatcgggttca gctgttaatc aatgccagca agagaagggg tcaagtgcaa	2940
acacgggcat gccacagcac gggcaccggg gagtggaatg gcaccaccaa gtgtgtgcga	3000
gccagcatcg ccgcctggct gtttcagcta caacggcagg agtcatccaa cgtaaccatg	3060
agctgatcaa cactgcaatc atcggggcgg cgtgatgcaa gcatgcctgg cgaagacaca	3120
tgggtgtgcg atgctgccg ctgctgcctg ctgcgcacgc cgttgagttg gcagcaggct	3180
cagccatgca ctggatggca gctgggctgc cactgcaatg tgggtggatag gatgcaagtg	3240
gagcgaatac caaacctctt ggctgcttgc tgggttgcat ggcattgcac catcagcagg	3300
agcgcattcg aagggaactg ccccatgcac gccatgcaa accggagcgc accgagtgtc	3360
cacactgtca ccaggccgc aagctttgca gaaccatgct catggacgca tgtagcgtg	3420
acgtcccttg acggcgctcc tctcgggtgt gggaaacgca atgcagcaca ggcagcagag	3480
gcggcggcag cagagcggcg gcagcagcgg cgggggccac cttcttgcg gggtcgcgcc	3540
ccagccagcg gtgatgcgt gatcccaaac gagttcacat tcatttgcat gcctggagaa	3600
gcgaggctgg ggcctttggg ctggtgcagc ccgcaatgga atgcgggacc gccaggctag	3660
cagcaaaggc gcctccccta ctccgcatcg atgttcata gtgcattgga ctgcatttgg	3720
gtggggcggc cggctgtttc tttcgtgttg caaaacgcgc cagctcagca acctgtcccg	3780
tgggtccccc gtgccgatga aatcgtgtgc acgccgatca gctgattgcc cggctcgcga	3840
agtaggcgcc ctcttttctg ctccgctct ctccgtccc cactagtat gacgttcggg	3900
gtcgcctcc cggccatggg ccgcggtgtc tcccttcccc ggcccagggt cgcggtgcgc	3960
gcccagtcgg cgagtcagg tttggagagc gggcgcgccc ccgactggtc catgctgttc	4020
gccgtgatca ccaccatctt cagcgccgcc gagaagcagt ggaccaacct ggagtggaa	4080
ccaagccca agctgcccc gctgctggac gaccattcg gcctgcacgg cctggtgttc	4140
cgccgcacct tcgccatccg ctctacagag gtgggcccc accgcagcac ctccatcctg	4200
gccgtgatga accacatgca ggaggccacc ctgaaccacg ccaagagcgt gggcatcctg	4260
ggcgacggct tcggcaccac cctggagatg tccaagcgcg acctgatgtg ggtggtgcgc	4320
cgcacccacg tggccgtgga gcgctacccc acctggggcg acaccgtgga ggtggagtgc	4380
tggatcggcg ccagcggcaa caacggcatg cgcgcgact tcctggtgcg cgactgcaag	4440
accggcgaga tcctgacctg ctgcacctc ctgagcgtgc tgatgaacac ccgcacccgc	4500
cgcctgagca ccatccccga cgagggtgcgc ggcgagatcg gccccgcctt catcgacaac	4560
gtggccgtga aggacgacga gatcaagaag ctgcagaagc tgaacgactc caccgccgac	4620
tacatccagg gcggcctgac ccccgctgg aacgacctg acgtgaacca gcacgtgaac	4680

026172-005010PC - Sequence Listing_1.TXT

aacctgaagt acgtggcctg ggtgttcgag accgtgcccg acagcatctt cgagtcccac	4740
cacatcagct ccttcaccct ggagtaccgc cgcgagtga cccgcgactc cgtgctgcgc	4800
agcctgacca ccgtgagcgg cggcagctcc gaggccggcc tgggtgtgca ccacctgctg	4860
cagctggagg gcggcagcga ggtgctgcgc gcccgcaccg agtggcgccc caagctgacc	4920
gactccttcc gcggcatcag cgtgatcccc gccgagcccc gcgtgatgga ctacaaggac	4980
cacgacggcg actacaagga ccacgacatc gactacaagg acgacgacga caagtgactc	5040
gaggcagcag cagctcggat agtatcgaca cactctggac gctggtcgtg tgatggactg	5100
ttgccgccac acttgctgcc ttgacctgtg aatatccctg ccgcttttat caaacagcct	5160
cagtgtgttt gatcttgtgt gtacgcgctt ttgcgagttg ctagctgctt gtgctatttg	5220
cgaataccac ccccagcatc cccttccctc gtttcatatc gcttgcatcc caaccgcaac	5280
ttatctacgc tgtcctgcta tccctcagcg ctgctcctgc tcctgctcac tgcccctcgc	5340
acagccttgg tttgggctcc gcctgtattc tcctggctact gcaacctgta aaccagcact	5400
gcaatgctga tgcacgggaa gtagtgggat gggaacacaa atggaaagct t	5451

<210> 111

<211> 5454

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 111

ggtacccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	60
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	120
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	180
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	240
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	300
cagtcacaac ccgcaaactc tagaatatca atgctgctgc aggccttcct gttcctgctg	360
gccggcttcg ccgccaagat cagcgcctcc atgacgaacg agacgtccga ccgccccctg	420
gtgcacttca cccccaacaa gggctggatg aacgaccca acggcctgtg gtacgacgag	480
aaggacgcca agtggcacct gtacttccag tacaaccgga acgacaccgt ctgggggacg	540
cccttgttct ggggccacgc cacgtccgac gacctgacca actgggagga ccagcccatc	600
gccatcgccc cgaagcgcaa cgactccggc gccttctccg gctccatggg ggtggactac	660
aacaacacct ccggcttctt caacgacacc atcgaccgc gccagcgctg cgtggccatc	720
tggacctaca acaccccgga gtccgaggag cagtacatct cctacagcct ggacggcggc	780
tacaccttca ccgagtacca gaagaacccc gtgctggccg ccaactccac ccagttccgc	840
gacccgaagg tcttctggta cgagccctcc cagaagtgga tcatgaccgc ggccaagtcc	900
caggactaca agatcgagat ctactcctcc gacgacctga agtcctggaa gctggagtcc	960

026172-005010PC - Sequence Listing_1.TXT

gcgttcgcca acgaggggctt cctcggctac cagtacgagt gccccggcct gatcgaggtc	1020
cccaccgagc aggaccccag caagtcctac tgggtgatgt tcatctccat caaccccggc	1080
gccccggccg gcggctcctt caaccagtac ttcgctggca gcttcaacgg caccacttc	1140
gaggccttcg acaaccagtc ccgcgtggtg gacttcggca aggactacta cgccctgcag	1200
accttcttca acaccgaccc gacctacggg agcgccctgg gcatcgcggtg ggcctccaac	1260
tgggagtact ccgccttcgt gccaccaac ccctggcgct cctccatgtc cctcgtgcgc	1320
aagttctccc tcaacaccga gtaccaggcc aacccggaga cggagctgat caacctgaag	1380
gccgagccga tcctgaacat cagcaacgcc ggcccctgga gccggttcgc caccaacacc	1440
acgttgacga aggccaacag ctacaacgtc gacctgtcca acagcaccgg caccctggag	1500
ttcgagctgg tgtacccgt caacaccacc cagacgatct ccaagtccgt gttcgcggac	1560
ctctccctct ggttcaaggg cctggaggac cccgaggagt acctccgcat gggcttcgag	1620
gtgtccgct cctccttctt cctggaccgc gggaacagca aggtgaagtt cgtgaaggag	1680
aacccctact tcaccaaccg catgagcgtg aacaaccagc cttcaagag cgagaacgac	1740
ctgtcctact acaaggtgta cggcttgctg gaccagaaca tcctggagct gtacttcaac	1800
gacggcgacg tcgtgtccac caacacctac ttcatgacca ccgggaacgc cctgggctcc	1860
gtgaacatga cgacgggggt ggacaacctg ttctacatcg acaagttcca ggtgcgcgag	1920
gtcaagtgac aattggcagc agcagctcgg atagtatcga cacactctgg acgctggctg	1980
tgtgatggac tgttgccgcc acacttgctg ccttgacctg tgaatatccc tgccgctttt	2040
atcaaacagc ctcaagtgtgt ttgatcttgt gtgtacgcgc ttttgcgagt tgctagctgc	2100
ttgtgctatt tgcgaatacc acccccagca tccccttccc tcgtttcata tcgcttgcat	2160
cccaaccgca acttatctac gctgtcctgc tatccctcag cgctgctcct gctcctgctc	2220
actgcccctc gcacagcctt ggtttgggct ccgcctgtat tctcctggta ctgcaacctg	2280
taaaccagca ctgcaatgct gatgcacggg aagtagtggg atgggaacac aaatggagga	2340
tcccgcgtct cgaacagagc gcgcagagga acgctgaagg tctgcctct gtcgcacctc	2400
agcgcggcat acaccacaat aaccacctga cgaatgcgct tggttcttcg tccattagcg	2460
aagcgtccgg ttcacacacg tgccacgttg gcgagggtggc aggtgacaat gatcggtgga	2520
gctgatggtc gaaacgttca cagcctaggg atatcgaatt ccgcctgcaa cgcaagggca	2580
gccacagccg ctcccacccg ccgctgaacc gacacgtgct tgggcgcctg ccgcctgcct	2640
gccgcatgct tgtgtggtg aggctgggca gtgctgccat gctgattgag gcttggttca	2700
tcgggtggaa gcttatgtgt gtgctgggct tgcattgccg gcaatgcgca tgggtggcaag	2760
agggcggcag cacttgctgg agctgccgcg gtgcctccag gtggttcaat cgcggcagcc	2820
agagggattt cagatgatcg cgcgtacagg ttgagcagca gtgtcagcaa aggtagcagt	2880
ttgccagaat gatcggttca gctgttaatc aatgccagca agagaagggg tcaagtgcaa	2940
acacgggcat gccacagcac gggcaccggg gagtgggaatg gcaccaccaa gtgtgtgcga	3000

026172-005010PC - Sequence Listing_1.TXT

gccagcatcg cgcctggct gtttcagcta caacggcagg agtcatccaa cgtaaccatg	3060
agctgatcaa cactgcaatc atcgggcggg cgtgatgcaa gcatgcctgg cgaagacaca	3120
tgggtgtgcgg atgctgccgg ctgctgcctg ctgcgcacgc cgttgagttg gcagcaggct	3180
cagccatgca ctggatggca gctgggctgc cactgcaatg tggtaggatag gatgcaagtg	3240
gagcgaatac caaacctctt ggctgcttgc tgggttgcat ggcacgcac catcagcagg	3300
agcgcctgcg aagggaactgg ccccatgcac gccatgccaa accggagcgc accgagtgtc	3360
cacactgtca ccaggcccg cagctttgca gaaccatgct catggacgca ttagcgctg	3420
acgtcccttg acggcgctcc tctcgggtgt gggaaacgca atgcagcaca ggcagcagag	3480
gcggcggcag cagagcggcg gcagcagcgg cgggggccac ctttcttgcg gggtcgcgcc	3540
ccagccagcg gtgatgcgt gatcccaaac gagttcacat tcatttgcat gcctggagaa	3600
gcgaggctgg ggccttttgg ctggtgcagc ccgcaatgga atgcgggacc gccaggctag	3660
cagcaaaggc gcctccccta ctccgcctcg atgttcata gtgcattgga ctgcatttgg	3720
gtggggcggc cggctgtttc tttcgtgttg caaaacgcgc cagctcagca acctgtccc	3780
tgggtcccc gtgccgatga aatcgtgtgc acgccgatca gctgattgcc cggctcgcga	3840
agtaggcgcc ctcttttctg ctccgcctct ctccgtccc cactagtagt ggccaccgca	3900
tccactttct cggcgttcaa tgcccgctgc ggcgacctgc gtcgctcggc gggctccgg	3960
ccccggcgcc cagcgaggcc cctccccgtg cgcgggcgcg ccccgactg gtccatgctg	4020
ttcgccgtga tcaccaccat cttctccgcc gccgagaagc agtggaccaa cctggagtgg	4080
aagcccaagc ccaaccccc ccagctgctg gacgaccact tcggcccca cggcctggtg	4140
ttccgccgca ctttcgcat ccgcagctac gaggtgggcc ccgaccgctc caccagcatc	4200
gtggccgtga tgaaccacct gcaggaggcc gccctgaacc acgccaagtc cgtgggcatc	4260
ctgggcgacg gcttcggcac caccctggag atgtccaagc gcgacctgat ctgggtggtg	4320
aagcgcaccc acgtggccgt ggagcgctac cccgcctggg gcgacaccgt ggaggtggag	4380
tgctgggtgg gcgcctccgg caacaacggc cgccgccacg acttcctggt gcgcgactgc	4440
aagaccggcg agatcctgac ccgctgcacc tccctgagcg tgatgatgaa caccgcacc	4500
cggcgctga gcaagatccc cgaggagggt gcggcgaga tcggccccgc cttcatcgac	4560
aacgtggccg tgaaggacga ggagatcaag aagccccaga agctgaacga ctccaccgcc	4620
gactacatcc agggcggcct gacccccgc tggaaacgacc tggacatcaa ccagcacgtg	4680
aacaacatca agtacgtgga ctggatcctg gagaccgtgc ccgacagcat cttcgagagc	4740
caccacatct cctccttcac catcgagtac cgccgcgagt gcaccatgga cagcgtgctg	4800
cagtccctga ccaccgtgag cggcggctcc tccgaggccg gcctggtgtg cgagcacctg	4860
ctgcagctgg agggcggcag cgagggtgct gcgcgaaga ccgagtggcg cccaagctg	4920
accgactcct tccgcggcat cagcgtgatc cccgccgagt ccagcgtgat ggactacaag	4980
gaccacgacg gcgactacaa ggaccacgac atcgactaca aggacgacga cgacaagtga	5040

026172-005010PC - Sequence Listing_1.TXT

ctcgaggcag cagcagctcg gatagtatcg acacactctg gacgctggtc gtgtgatgga	5100
ctgttgccgc cacacttgct gccttgacct gtgaatatcc ctgccgcttt tatcaaacag	5160
cctcagtgtg ttgatcttg tgtgtacgcg cttttgcgag ttgctagctg cttgtgctat	5220
ttgcaatac cccccccagc atcccccttc ctcgtttcat atcgcttgca tcccaaccgc	5280
aacttatcta cgctgtcctg ctatccctca gcgctgctcc tgctcctgct cactgcccct	5340
cgcacagcct tggtttgggc tccgcctgta ttctcctggg actgcaacct gtaaaccagc	5400
actgcaatgc tgatgcacgg gaagtagtgg gatgggaaca caaatggaaa gctt	5454

<210> 112

<211> 2933

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 112

agagagcgga ggtgggggttg tgagggtgggg ttgctgacca ggagctcgcg tcgccgagcg	60
cgactcgcac acggtccagt tcccccccc tccgccc aaa cgcaagcctc ccatcttgat	120
gcctttccgg ccacctatac tttttcttag ttcgctgtaa catccagacc gtcctgaata	180
ataacaatgc cctgtgtcaa gtgcattcct aaaaaaatc tgtcccaacc aacaatccca	240
cctgaaatac caccagccct gcccagtaca ctcttccaat accatctccc tacctccacg	300
cgcaagcgac ccccatgcgc gaccaggctc gaaagtgatt tatgacttga gacgagcgag	360
tggcgggcgcg gtcgactgcc ttttcatcac gtgccgtacg tcggcgaccg ctagggtttt	420
gcacggcaac gcacggcttc gccaaaccga ccagccagga cctcgactac tctaccgca	480
attcgctca agaagtcgcc aaatgtgcc tacaccattc ctacagcac tgttcaaact	540
tgatgccaat ttgacattc gggttgctcg ttggctgcgc ccacatcggc cgtgagtga	600
gcaggcgggg tcggacacgg aggacgcggc gtcacgcccc gaacgcagcc cgtaactcta	660
catcaacacg acgtgttgcg taatcccgcc cggtgcgca tcgtgccaac ccattcgca	720
tggatggctg gaaaatgggt tgccaactgc cctgagggag gctctcgca aacgggcacg	780
tccctgaaac cgaaactgtg gccttgctgt cggccacgca agcacgtgga ccctaaacac	840
caagaaaatc agtaaacaag gttgacatcc tctacgggcg aattgtttgc ccaacccttc	900
atcgcacact gccattataa tgcatttagc tcggcgacaa gtttagaaaa ggcaggctgc	960
attgtttccat ttgcggtgg cggcgtgggt gccatttta cgagggtttg gctcccgggc	1020
agcgaccgag ccaggctcag tccctctcgc ccgtcgacaa tgttgcgaa cccacaagcg	1080
gctaacaaca acttgatgg acctgtacac tgccaattcc ttcttccccg gccgaggttt	1140
acacgtgatg gccatggctt cgcattcagg ccgacttccc attccgactt tccagagggt	1200
ccgcggacgc tgggggttg ctgcctgagg cccacccttt gttccccgcg tcccgaacaa	1260

026172-005010PC - Sequence Listing_1.TXT

cacaattgcg ttacataagg gggagccgcc cccgttcaga gtgcagaaat ctttcactat	1320
attttccagt cgtcagcgaa atcaagtact agtatggcca ccgcatccac tttctcggcg	1380
ttcaatgccc gctgcggcga cctgcgtcgc tcggcgggct ccgggccccg gcgcccagcg	1440
aggccccctcc ccgtgcgcgg gcgcgcccc gactgggtcca tgctgttcgc cgtgatcacc	1500
accatcttct ccgccgccga gaagcagtgg accaacctgg agtgggaagcc caagcccaac	1560
cccccccagc tgctggacga ccacttcggc cccacggcc tgggtgttcg ccgcaccttc	1620
gccatccgca gctacgaggt gggccccgac cgctccacca gcatcgtggc cgtgatgaac	1680
cacctgcagg aggccgccct gaaccacgcc aagtccgtgg gcatcctggg cgacggcttc	1740
ggcaccaccc tggagatgtc caagcgcgac ctgatctggg tggagaagcg caccacgtg	1800
gccgtggagc gtacccccgc ctggggcgac accgtggagg tggagtgtg ggtgggcgcc	1860
tccggcaaca acggccgccg ccacgacttc ctggtgcgcg actgcaagac cggcgagatc	1920
ctgacccgct gcacctccct gagcgtgatg atgaacaccc gcacccgccg cctgagcaag	1980
atccccgagg aggtgcgcgg cgagatcggc cccgccttca tcgacaacgt ggccgtgaag	2040
gacgaggaga tcaagaagcc ccagaagctg aacgactcca ccgccgacta catccagggc	2100
ggcctgaccc cccgctggaa cgacctggac atcaaccagc acgtgaacaa catcaagtac	2160
gtggactgga tcctggagac cgtgccccgac agcatcttcg agagccacca catctcctcc	2220
ttcaccatcg agtaccgccg cgagtgcacc atggacagcg tgctgcagtc cctgaccacc	2280
gtgagcggcg gctcctccga ggccggcctg gtgtgcgagc acctgctgca gctggagggc	2340
ggcagcgagg tgctgcgcgc caagaccgag tggcgcccca agctgaccga ctcttccgc	2400
ggcatcagcg tgatccccgc cgagtccagc gtgatggact acaaggacca cgacggcgac	2460
tacaaggacc acgacatcga ctacaaggac gacgacgaca agtgactcga gttaattaac	2520
tcgaggcagc agcagctcgg atagtatcga cacactctgg acgctggtcg tgtgatggac	2580
tgttgccgcc acatttgctg ccttgacctg tgaatatccc tgccgctttt atcaaacagc	2640
ctcagtgtgt ttgatcttgt gtgtacgcgc ttttgcgagt tgctagctgc ttgtgctatt	2700
tgcgaatacc acccccagca tccccctccc tcgtttcata tcgcttgcat cccaaccgca	2760
acttatctac gctgtcctgc tatccctcag cgctgctcct gtcctgctc actgcccctc	2820
gcacagcctt ggtttgggct ccgcctgtat tctcctggta ctgcaacctg taaaccagca	2880
ctgcaatgct gatgcacggg aagtagtggg atgggaacac aaatggaaag ctt	2933

<210> 113

<211> 4817

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 113

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac

60

026172-005010PC - Sequence Listing_1.TXT

gtgcttgggc gcctgccgcc tgccctgccgc atgcttgtgc tggtagaggct gggcagtgtc	120
gccatgtctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgc	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccagggtggt tcaatcgcg cagccagagg gatttcagat gatcgcgct acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaatgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaaacactg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcaactga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcatggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg ccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc cttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcag gctggggcct ttgggctggt gcagcccgca	1080
atggaatgca ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgccagct cagcaacctg tcccgtgggt ccccgctgcc gatgaaatcg tgtgcagcc	1260
gatcagctga ttgcccggct cgcgaagtag gcgccctcct ttctgctcgc cctctctccg	1320
tccgcctct agaatatcaa tgatcgagca ggacggcctc cagccggct ccccgccgc	1380
ctgggtggag cgctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgtccg cccaggccg ccccgctgctg ttcgtgaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggcagggc cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgtgtct	1620
gggcgaggtg cccggccagg acctgtgtc ctccacctg gccccgccg agaagggtgc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcaccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccagg cctggcccc gccgagctgt tcgcccgcct	1860
gaaggccccg atgcccagc gcgaggacct ggtggtgacc cacggcgac cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggcgt	1980
ggccgaccgc taccaggaca tcgccctggc ccccgcgac atcgccgagg agctgggcgg	2040
cgagtgggcc gaccgcttcc tgggtgtgta cggcatcgcc gccccgact cccagcgc	2100

026172-005010PC - Sequence Listing_1.TXT

cgctttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggctgctgta tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgctcc tgctcactgc ccctcgaca gccttggtt gggctccgcc	2460
tgtattctcc tggactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccg cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt ctctgctcat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggcgaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccgcgct gcatgcaaca ccgatgatgc ttcgacccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgttta atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctctt ctcttcgttt	3060
cagtcacaac ccgcaaacgg cgcgccatgg tggccgccc gcctccagc gccttcttc	3120
ccgtgcccgc ccccgcgcc tcccccaagc ccggcaagtt cggcaactgg ccctccagcc	3180
tgagcccctc cttcaagccc aagtccatcc ccaacggcgg ctccagggtg aaggccaacg	3240
acagcgcaca cccaaggcc aacggctccg ccgtgagcct gaagagcggc agcctgaaca	3300
cccaggagga cacctctcc agccccccc ccgcacctt cctgcaccag ctgcccgact	3360
ggagccgcct gctgaccgcc atcaccaccg tgctcgtgaa gtccaagcgc cccgacatgc	3420
acgaccgcaa gtccaagcgc cccgacatgc tggtagacag cttcggcctg gagtccaccg	3480
tgcaggacgg cctggtgttc cgccagtcct tctccatccg ctctacgag atcggcaccg	3540
accgcaccgc cagcatcgag accctgatga accacctgca ggagacctc ctgaaccact	3600
gcaagagcac cggcatcctg ctggacggct tcggccgcac cctggagatg tgcaagcgcg	3660
acctgatctg ggtggtgatc aagatgcaga tcaagggtgaa ccgctacccc gcctggggcg	3720
acaccgtgga gatcaacacc cgcttcagcc gcctgggcaa gatcggcatg ggccgcgact	3780
ggctgatctc cgactgcaac accggcgaga tcctggtgcg cgccaccagc gcctacgcca	3840
tgatgaacca gaagaccgc cgctgtcca agctgcccta cgaggtgcac caggagatcg	3900
tgcccctgtt cgtggacagc cccgtgatcg aggactccga cctgaagggtg cacaagttca	3960
agggtgaagac cggcgacagc atccagaagg gcctgacccc cggttggaac gacctggacg	4020
tgaaccagca cgtgtccaac gtgaagtaca tcggctggat cctggagagc atgcccaccg	4080
agggtgctgga gacccaggag ctgtgctccc tggccctgga gtaccgccc gagtgccggc	4140

026172-005010PC - Sequence Listing_1.TXT

gcgactccgt gctggagagc gtgaccgcca tggaccccag caaggtgggc gtgcgctccc	4200
agtaccagca cctgctgcmc ctggaggacg gcaccgccat cgtgaacggc gccaccgagt	4260
ggcgccccaa gaacgccggc gccaacggcg ccatctccac cggcaagacc agcaacggca	4320
actccgtgtc catggactac aaggaccacg acggcgacta caaggaccac gacatcgact	4380
acaaggacga cgacgacaag tgactcgagg cagcagcagc tcggatagta tcgacacact	4440
ctggacgctg gtcgtgtgat ggactgttgc cgccacactt gctgccttga cctgtgaata	4500
tccctgccgc ttttatcaaa cagcctcagt gtgtttgatc ttgtgtgtac gcgcttttgc	4560
gagttgctag ctgcttgtgc tatttgcgaa taccaccccc agcatcccct tccctcgttt	4620
catatcgctt gcataccaaac cgcaacttat ctacgctgtc ctgctatccc tcagcgtgc	4680
tcctgctcct gctcactgcc cctcgcacag ccttggtttg ggctccgcct gtattctcct	4740
ggtagtcaa cctgtaaacc agcactgcaa tgctgatgca cgggaagtag tgggatggga	4800
acacaaatgg aaagctt	4817

<210> 114

<211> 4665

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 114

ggtagccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgccgc atgcttgtgc tggtaggct gggcagtgc	120
gccatgctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgc	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccagggtgt tcaatcgcgg cagccagagg gatttcagat gatcgcgct acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgc agaatactg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcagccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaaacctg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggctcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgcat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960

026172-005010PC - Sequence Listing_1.TXT

gccacccttc ttgcgggggc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgcctg gagaagcgag gctggggcct ttgggctggt gcagcccgc	1080
atggaatgcg ggaccgccag gctagcagca aaggcgccct ccctactccg catcgatgtt	1140
ccatagtgc tttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcgaagtag gcgccctcct ttctgctcg cctctctccg	1320
tcccgctct agaatatcaa tgatcgagca ggacggcctc cacgccggct cccccgccgc	1380
ctgggtggag cgcctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgcctgtccg cccagggccg ccccgctgctg ttcgtgaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgcccgctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgaggtg cccggccagg acctgctgtc ctccacctg gccccgccg agaagggtgc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gccccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggcccc gccgagctgt tcgcccgcct	1860
gaaggcccc atgcccgacg gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggcgt	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggcgg	2040
cgagtgggcc gaccgcttcc tgggtgctga cggcatcgcc gccccgact cccagcgc	2100
cgccttctac cgcctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgtg ctctgctcc tgctactgc ccctcgaca gccttggttt gggctccgcc	2460
tgtattctcc tggactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatccc cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgctat gacacttcca gaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000

026172-005010PC - Sequence Listing_1.TXT

cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatgacg ttccggggtcg ccctcccggc catggggccg	3120
ggtgtctccc ttccccggcc caggggtcgcg gtgcgcgccc agtcggcgag tcaggttttg	3180
gagagcgggc gcgcccagct gcccgactgg agccgcctgc tgaccgccat caccaccgtg	3240
ttcgtgaagt ccaagcgccc cgacatgcac gaccgcaagt ccaagcgccc cgacatgctg	3300
gtggacagct tcggcctgga gtccaccgtg caggacggcc tgggtgttccg ccagtccttc	3360
tccatccgct cctacgagat cggcaccgac cgcaccgcca gcatcgagac cctgatgaac	3420
cacctgcagg agacctccct gaaccactgc aagagcaccg gcatcctgct ggacggcttc	3480
ggccgcaccc tggagatgtg caagcgcgac ctgatctggg tggatgatcaa gatgcagatc	3540
aagggtgaacc gctaccccg cctggggcgac accgtggaga tcaacacccg cttcagccgc	3600
ctgggcaaga tcggcatggg ccgcgactgg ctgatctccg actgcaacac cggcgagatc	3660
ctggtgcgcg ccaccagcgc ctacgccatg atgaaccaga agacccgccg cctgtccaag	3720
ctgccctacg aggtgcacca ggagatcgtg cccctgttcg tggacagccc cgtgatcgag	3780
gactccgacc tgaaggtgca caagttcaag gtgaagaccg gcgacagcat ccagaagggc	3840
ctgacccccg gctggaacga cctggacgtg aaccagcacg tgtccaacgt gaagtacatc	3900
ggctggatcc tggagagcat gcccaccgag gtgctggaga cccaggagct gtgctccctg	3960
gccctggagt accgcccgcga gtgcggccgc gactccgtgc tggagagcgt gaccgccatg	4020
gaccccagca aggtgggcgt gcgctcccag taccagcacc tgctgcgcct ggaggacggc	4080
accgccatcg tgaacggcgc caccgagtgg cgccccaaaga acgcccggcg caacggcgcc	4140
atctccaccg gcaagaccag caacggcaac tccgtgtcca tggactacaa ggaccacgac	4200
ggcgactaca aggaccacga catcgactac aaggacgacg acgacaagtg actcgaggca	4260
gcagcagctc ggatagtatc gacacactct ggacgctggg cgtgtgatgg actgttgccg	4320
ccacacttgc tgccttgacc tgtgaatatc cctgccgctt ttatcaaaca gcctcagtgt	4380
gtttgatctt gtgtgtacgc gcttttgca gttgctagct gcttgtgcta tttgcgaata	4440
ccacccccag catcccttc cctcgtttca tatcgcttgc atcccaaccg caacttatct	4500
acgctgtcct gctatccctc agcgctgctc ctgctcctgc tcaactgcccc tcgcacagcc	4560
ttggtttggg ctccgcctgt attctcctgg tactgcaacc tgtaaaccag cactgcaatg	4620
ctgatgcacg ggaagtagtg ggatgggaac acaaatggaa agctt	4665

<210> 115

<211> 4668

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 115

ggtagccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac

60

026172-005010PC - Sequence Listing_1.TXT

gtgcttgggc gcctgccgcc tgccctgccgc atgcttgtgc tggtagaggct gggcagtgtc	120
gccatgtctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgc	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccagggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgcggt acagggttag	300
cagcagtgtc agcaaaggta gcagtttgcc agaattgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaaacctg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggttcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcatggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg ccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc cttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcag gctggggcct ttgggctggt gcagcccgca	1080
atggaatgcg ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt ccccgctgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcgaaagtag gcgccctcct ttctgctcgc cctctctccg	1320
tcccgcctct agaatatcaa tgatcgagca ggacggcctc cacgccggct ccccgccgc	1380
ctgggtggag cgctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgtccg cccagggccg ccccgctgctg ttcgtgaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgaggtg cccggccagg acctgtgtc ctccacctg gccccgccg agaagggtgtc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac ccgcccacct gccccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcg cgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggcccc gccgagctgt tcgcccgcct	1860
gaaggccccg atgcccagc gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggcgt	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggcgg	2040
cgagtgggcc gaccgcttcc tgggtgctga cggcatcgcc gccccgact cccagcgc	2100

026172-005010PC - Sequence Listing_1.TXT

cgcccttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggctgctgta tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgcga ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcatcccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgtg ctcctgctcc tgctcactgc ccctgcaca gccttggtt gggctccgcc	2460
tgtattctcc tggactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccg cgtctcgaa agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgtat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgacccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatggct atcaagacga acaggcagcc tgtggagaag	3120
cctccgttca cgatcgggac gctgcgcaag gccatccccg cgactgttt cgagcgtcg	3180
gcgcttcgtg ggcgcgcca gctgcccga tggagccgcc tgctgaccgc catcaccacc	3240
gtgttcgtga agtccaagcg ccccgacatg cacgaccgca agtccaagcg ccccgacatg	3300
ctggtggaca gcttcggcct ggagtcacc gtgcaggacg gcctggtgtt ccgccagtcc	3360
ttctccatcc gctcctacga gatcggcacc gaccgcaccg ccagcatcga gaccctgatg	3420
aaccacctgc aggagacct cctgaaccac tgcaagagca ccggcatcct gctggacggc	3480
ttcggccgca ccctggagat gtgcaagcgc gacctgatct ggggtggtgat caagatgcag	3540
atcaaggtga accgctaccc cgcctggggc gacaccgtgg agatcaaac ccgcttcagc	3600
cgcctgggca agatcggcat gggccgcgac tggctgatct ccgactgcaa caccggcgag	3660
atcctggtgc gcgccaccag cgcctacgcc atgatgaacc agaagacccg ccgcctgtcc	3720
aagctgccct acgaggtgca ccaggagatc gtgcccctgt tcgtggacag ccccgatgc	3780
gaggactccg acctgaaggt gcacaagttc aaggtgaaga ccggcgacag catccagaag	3840
ggcctgaccc ccggctggaa cgacctggac gtgaaccagc acgtgtccaa cgtgaagtac	3900
atcggctgga tcctggagag catgcccacc gaggtgctgg agaccagga gctgtgctcc	3960
ctggccctgg agtaccgccg cgagtgcggc cgcgactccg tgctggagag cgtgaccgcc	4020
atggacccca gcaaggtggg cgtgcgctcc cagtaccagc acctgctgcg cctggaggac	4080
ggcaccgcca tcgtgaacgg cgccaccgag tggcgcccca agaacgccgg cgccaacggc	4140

026172-005010PC - Sequence Listing_1.TXT

gccatctcca ccggaagac cagcaacggc aactccgtgt ccatggacta caaggaccac	4200
gacggcgact acaaggacca cgacatcgac tacaaggacg acgacgacaa gtgactcgag	4260
gcagcagcag ctcggatagt atcgacacac tctggacgct ggtcgtgtga tggactgttg	4320
ccgccacact tgctgccttg acctgtgaat atccctgccg cttttatcaa acagcctcag	4380
tgtgtttgat cttgtgtgta cgcgcttttg cgagttgcta gctgcttggt ctatttgca	4440
ataccacccc cagcatcccc ttccctcggt tcatatcgct tgcaccccaa ccgcaactta	4500
tctacgctgt cctgctatcc ctacgctg ctccctgctc tgctcactgc ccctcgca	4560
gccttggttt gggctccgcc tgtattctcc tggactgca acctgtaa acagcactgca	4620
atgctgatgc acgggaagta gtgggatggg aacacaaatg gaaagctt	4668

<210> 116

<211> 4668

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 116

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgcctgccgc atgcttggtc tggtagggct gggcagtgtc	120
gccatgctga ttgaggcttg gttcatcggg tggaaagctta tgtgtgtgct gggcttgcat	180
gccgggcaat gcgcatgggt gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccagggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgctg acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaattgatc gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaaacctg caatcatcgg gcgggctgta	540
tgcaagcatg cctggcgaag acacatgggt tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtgggt gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gtcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcgggggt gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcgag gctggggcct ttgggctggg gcagcccgca	1080
atggaatgct ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140

026172-005010PC - Sequence Listing_1.TXT

ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt ccccggtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cggaagtag gcgccctcct ttctgctcgc cctctctccg	1320
tcccgctctt agaatatcaa tgatcgagca ggacggcctc cacgccggct ccccgccgc	1380
ctgggtggag cgctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgtccg ccagggccg ccccggtctg ttcgtgaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgcccgctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgcgtgc tggacgtggg gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgaggtg cccggccagg acctgctgtc ctccacctg gccccgccg agaagggtgc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcg ccgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggcccc gccgagctgt tcgccccct	1860
gaaggcccg atgcccgacg gcgaggacct ggtgggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggct	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggcg	2040
cgagtgggccc gaccgcttcc tgggtgctga cggcatcgcc gccccgact cccagcgcat	2100
cgcttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttgct ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcatccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgctcc tgctcactgc ccctcgaca gccttggttt gggctccgcc	2460
tgtattctcc tggactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatccc cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatggcc accgcatcca ctttctcggc gttcaatgcc	3120
cgctgcggcg acctgcgtcg ctcggggggc tccgggcccc ggcgcccagc gagggccctc	3180

026172-005010PC - Sequence Listing_1.TXT

cccgtgcgcg ggcgcgcccc gctgcccgcac tggagccgcc tgctgaccgc catcaccacc	3240
gtgttcgtga agtccaagcg ccccgacatg cacgaccgca agtccaagcg ccccgacatg	3300
ctgggtggaca gcttcggcct ggagtcacc gtgcaggacg gcctgggtgtt ccgccagtcc	3360
ttctccatcc gctcctacga gatcggcacc gaccgcaccg ccagcatcga gaccctgatg	3420
aaccacctgc aggagacctc cctgaaccac tgcaagagca ccggcatcct gctggacggc	3480
ttcggccgca ccctggagat gtgcaagcgc gacctgatct ggggtgggtgat caagatgcag	3540
atcaaggtga accgctaccc cgcctggggc gacaccgtgg agatcaacac ccgcttcagc	3600
cgcctgggca agatcggcat gggccgcgac tggctgatct ccgactgcaa caccggcgag	3660
atcctgggtgc gcgccaccag cgcctacgcc atgatgaacc agaagaccgc ccgcctgtcc	3720
aagctgccct acgaggtgca ccaggagatc gtgcccctgt tcgtggacag ccccgatgac	3780
gaggactccg acctgaaggt gcacaagttc aaggtgaaga ccggcgacag catccagaag	3840
ggcctgaccc ccggctggaa cgacctggac gtgaaccagc acgtgtccaa cgtgaagtac	3900
atcggctgga tcctggagag catgcccacc gaggtgctgg agaccagga gctgtgctcc	3960
ctggccctgg agtaccgccg cgagtgcggc gcgcactccg tgctggagag cgtgaccgcc	4020
atggacccca gcaaggtggg cgtgcgctcc cagtaccagc acctgctgcg cctggaggac	4080
ggcaccgcca tcgtgaacgg cgccaccgag tggcgccccca agaacgccgg cgccaacggc	4140
gccatctcca ccggcaagac cagcaacggc aactccgtgt ccatggacta caaggaccac	4200
gacggcgact acaaggacca cgacatcgac tacaaggacg acgacgaaa gtgactcgag	4260
gcagcagcag ctcggatagt atcgacacac tctggacgct ggtcgtgtga tggactgttg	4320
ccgccacact tgctgccttg acctgtgaat atcccctgcc cttttatcaa acagcctcag	4380
tgtgtttgat cttgtgtgta cgcgcttttg cgagttgcta gctgcttgct ctatttgca	4440
ataccacccc cagcatcccc ttccctcgtt tcatatcgct tgcattccaa ccgcaactta	4500
tctacgctgt cctgctatcc ctacgcgctg ctccctgctcc tgctcactgc ccctcgaca	4560
gccttggttt gggctccgcc tgtattctcc tggactgca acctgtaaac cagcactgca	4620
atgctgatgc acgggaagta gtgggatggg aacacaaatg gaaagctt	4668

<210> 117

<211> 4656

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 117

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgcctgccgc atgcttgctg tggtaggct gggcagtgc	120
gccatgctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgcat	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240

026172-005010PC - Sequence Listing_1.TXT

tccaggtggt tcaatcgcg cagccagagg gatttcagat gatcgcgcg acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaatgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc cttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcgag gctggggcct ttgggctggt gcagcccga	1080
atggaatgcg ggaccgccag gctagcagca aaggcgccct ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcgaaagtag gcgcccctct ttctgctcgc cctctctccg	1320
tcccgcctct agaatatcaa tgatcgagca ggacggcctc cacgccggct cccccgccgc	1380
ctgggtggag cgctgtttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgttccg cccagggccg ccccgtgctg ttcgtgaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgcccgccctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgaggtg cccggccagg acctgctgtc ctcccacctg gccccgccg agaagggtgtc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggccccc gccgagctgt tcgcccgcct	1860
gaaggccccg atgcccagc gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggctg	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgcac atcgccgagg agctgggagg	2040
cgagtgggccc gaccgcttcc tgggtgctgta cggcatcgcc gccccgact cccagcgc	2100
cgcttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280

026172-005010PC - Sequence Listing_1.TXT

cgcgcttttg	cgagttgcta	gctgcttg	ctatttgcga	ataccacccc	cagcatcccc	2340
ttccctcggt	tcatatcgct	tgcatcccaa	ccgcaactta	tctacgctgt	cctgctatcc	2400
ctcagcgctg	ctcctgctcc	tgctcactgc	ccctcgcaca	gccttggttt	gggctccgcc	2460
tgtattctcc	tggtactgca	acctgtaaac	cagcactgca	atgctgatgc	acgggaagta	2520
gtgggatggg	aacacaaatg	gaggatcccc	cgtctcgaac	agagcgcgca	gaggaacgct	2580
gaaggctctg	cctctgtcgc	acctcagcgc	ggcatacacc	acaataacca	cctgacgaat	2640
gcgcttggtt	cttcgtccat	tagcgaagcg	tccggttcac	acacgtgcca	cgttggcgag	2700
gtggcaggtg	acaatgatcg	gtggagctga	tggtcgaaac	gttcacagcc	tagggatata	2760
gaattccttt	cttgcgctat	gacacttcca	gcaaaaggta	gggcgggctg	cgagacggct	2820
tcccggcgct	gcatgcaaca	ccgatgatgc	ttcgaccccc	cgaagctcct	tcggggctgc	2880
atgggcgctc	cgatgccgct	ccagggcgag	cgctgtttaa	atagccaggc	ccccgattgc	2940
aaagacatta	tagcgagcta	ccaaagccat	attcaaacac	ctagatcact	accacttcta	3000
cacaggccac	tcgagcttgt	gatcgactc	cgctaagggg	gcgcctcttc	ctcttcgttt	3060
cagtcacaac	ccgcaaacac	tagtatggct	tccgcggcat	tcacatgtc	ggcgtgcccc	3120
gcgatgactg	gcagggcccc	tggggcacgt	cgctccggac	ggccagtcgc	cacccgcctg	3180
agggggcgcg	ccccgactg	gagccgcctg	ctgaccgcca	tcaccaccgt	gttcgtgaag	3240
tccaagcgcc	ccgacatgca	cgaccgcaag	tccaagcgcc	ccgacatgct	ggtggacagc	3300
ttcggcctgg	agtccaccgt	gcaggacggc	ctgggtgttc	gccagtcctt	ctccatccgc	3360
tcctacgaga	tcggcaccga	ccgcaccgcc	agcatcgaga	ccctgatgaa	ccacctgcag	3420
gagacctccc	tgaaccactg	caagagcacc	ggcatcctgc	tggacggctt	cggccgcacc	3480
ctggagatgt	gcaagcgcga	cctgatctgg	gtggtgatca	agatgcagat	caaggtgaac	3540
cgctaccccc	cctggggcga	caccgtggag	atcaaacacc	gcttcagccg	cctgggcaag	3600
atcggcatgg	gccgcgactg	gctgatctcc	gactgcaaca	ccggcgagat	cctggtgcgc	3660
gccaccagcg	cctacgccat	gatgaaccag	aagacccgcc	gcctgtccaa	gctgccctac	3720
gaggtgcacc	aggagatcgt	gcccctgttc	gtggacagcc	ccgtgatcga	ggactccgac	3780
ctgaagggtg	acaagttcaa	ggtgaagacc	ggcgacagca	tccagaaggg	cctgaccccc	3840
ggctggaacg	acctggacgt	gaaccagcac	gtgtccaacg	tgaagtacat	cggctggatc	3900
ctggagagca	tgcccaccga	ggtgctggag	acccaggagc	tgtgctccct	ggccctggag	3960
taccgccgcg	agtgcggccg	cgactccgtg	ctggagagcg	tgaccgcat	ggacccagc	4020
aagggtggcg	tgcgtccca	gtaccagcac	ctgctgcgcc	tggaggacgg	caccgccatc	4080
gtgaacggcg	ccaccgagtg	gcgccccaa	aacgccggcg	ccaacggcgc	catctccacc	4140
ggcaagacca	gcaacggcaa	ctccgtgtcc	atggactaca	aggaccacga	cggcgactac	4200
aaggaccacg	acatcgacta	caaggacgac	gacgacaagt	gactcgaggc	agcagcagct	4260
cggatagtat	cgacacactc	tggacgctgg	tcgtgtgatg	gactgttgcc	gccacacttg	4320

026172-005010PC - Sequence Listing_1.TXT

ctgccttgac ctgtgaatat ccctgccgct tttatcaaac agcctcagtg tgtttgatct	4380
tgtgtgtacg cgctttttgcg agttgctagc tgcttgtgct atttgcgaat accaccccca	4440
gcatccccctt ccctcgtttc atatcgcttg catcccaacc gcaacttatac tacgctgtcc	4500
tgctatccct cagcgctgct cctgctcctg ctactgccc ctgcacagc cttggtttgg	4560
gctccgctg tattctcctg gtactgcaac ctgtaaacca gactgcaat gctgatgcac	4620
gggaagtagt gggatgggaa cacaatgga aagctt	4656

<210> 118

<211> 4721

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 118

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgcctgccgc atgcttgtgc tggtagaggct gggcagtgc	120
gccatgctga ttgaggcttg gttcatcggg tggaaagctta tgtgtgtgct gggcttgc	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccaggtggt tcaatcgcg cagccagagg gatttcagat gatcgcgct acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaagatgctg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcagccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatggtg tgcgagtgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcatggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gtcctctcgg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcatgcctg gagaagcgag gctggggcct ttgggctggt gcagcccgca	1080
atggaatgcg ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcgaagtag gcgcctcct ttctgctcgc cctctctccg	1320

026172-005010PC - Sequence Listing_1.TXT

tccccgcctct agaatatcaa tgatcgagca ggacggcctc cacgccggct cccccgccgc	1380
ctgggtggag cgcctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgcctgtccg cccagggccg ccccgctgtg ttcgtgaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgcccgctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgcctgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggagagggtg cccggccagg acctgctgtc ctccacctg gccccgccg agaagggtgc	1680
catcatggcc gacgcatgc gccgcctgca cacctggac cccgccacct gccccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcg cgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggcccc gccgagctgt tcgccccct	1860
gaaggccccg atgcccgcg gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggct	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggctg	2040
cgagtgggccc gaccgcttcc tgggtgctgta cggcatcgcc gccccgact cccagcgcat	2100
cgccttctac cgcctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgtt ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaacta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgtctcc tgcctactgc ccctcgaca gccttggttt gggctccgcc	2460
tgtattctcc tggactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatccc cgtctcgaa agagcgcga gaggaacgct	2580
gaaggctctg cctctgtgc acctcagcg ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcagggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgtat gacacttcca gaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacgg cgcgccatgg ccaccaccag cctggcctcc gccttctgct	3120
ccatgaaggc cgtgatgctg gccgcgacg gccgcggcat gaagccccgc agctccgacc	3180
tgcagctgcg cgccggcaac gccccacct ccctgaagat gatcaacggc accaagttca	3240
gctacaccga gagcctgaag cgctgcccc actggtccat gctgttcgcc gtgatcacca	3300
ccatcttcag cgccgccgag aagcagtgga ccaacctgga gtggaagccc aagcccaagc	3360

026172-005010PC - Sequence Listing_1.TXT

tgccccagct gctggacgac cacttcggcc tgcacggcct ggtgttccgc cgcaccttcg	3420
ccatccgctc ctacgaggtg ggccccgacc gcagcacctc catcctggcc gtgatgaacc	3480
acatgcagga ggccaccctg aaccacgcca agagcgtggg catcctgggc gacggcttcg	3540
gcaccaccct ggagatgtcc aagcgcgacc tgatgtgggt ggtgcgccgc acccacgtgg	3600
ccgtggagcg ctaccccacc tggggcgaca ccgtggaggt ggagtgtctg atcggcgcca	3660
gcggaacaa cggcatgcgc cgcgacttcc tggcgcgca ctgcaagacc ggcgagatcc	3720
tgacccgctg cacctccctg agcgtgtga tgaacacccg caccgcccgc ctgagcacca	3780
tccccgacga ggtgcgcggc gagatcggcc ccgccttcac cgacaacgtg gccgtgaagg	3840
acgacgagat caagaagctg cagaagctga acgactccac cgcgcgactac atccagggcg	3900
gcctgacccc ccgctggaac gacctggacg tgaaccagca cgtgaacaac ctgaagtacg	3960
tggcctgggt gttcgagacc gtgcccga caatcttcga gtcccaccac atcagctcct	4020
tcaccctgga gtaccgccgc gagtgcaccc gcgactccgt gctgcgcagc ctgaccaccg	4080
tgagcggcgg cagctccgag gccggcctgg tgtgcgacca cctgctgcag ctggagggcg	4140
gcagcgaggt gctgcgcgcc cgcaccgagt ggcgccccaa gctgaccgac tccttccgcg	4200
gcatcagcgt gatccccgcc gagccccgcg tgatggacta caaggaccac gacggcgact	4260
acaaggacca cgacatcgac tacaaggacg acgacgacaa gtgatgactc gaggcagcag	4320
cagctcggat agtatcgaca cactctggac gctggtcgtg tgatggactg ttgccgccac	4380
acttgctgcc ttgacctgtg aatatccctg ccgcttttat caaacagcct cagtgtgttt	4440
gatcttgtgt gtacgcgctt ttgcgagttg ctagtgtgtt gtgctatttg cgaataccac	4500
ccccagcatc cccttccctc gtttcatatc gcttgcaccc caaccgcaac ttatctacgc	4560
tgtcctgcta tccctcagcg ctgctcctgc tcctgtcac tgcccctcgc acagccttgg	4620
tttgggctcc gcctgtattc tcctggtact gcaacctgta aaccagcact gcaatgtgta	4680
tgcacgggaa gtagtgggat gggaacacaa atggaaagct t	4721

<210> 119

<211> 4650

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 119

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgcccgc atgcttgtgc tggtagggct gggcagtgct	120
gccatgctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgcac	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccaggtggg tcaatcgcgg cagccagagg gatttcagat gatcgcgcgt acaggttgag	300
cagcagtgct agcaaaggta gcagtttgcc agaattgatc gttcagctgt taatcaatgc	360

026172-005010PC - Sequence Listing_1.TXT

cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccgggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaaacactg caatcatcgg gcgggagtg	540
tgcaagcatg cctggcgaag acacatgggtg tgcggatgct gccggctgct gcctgctgctg	600
cacgccgttg agttggcagc aggtcagcc atgactgga tggcagctgg gctgccactg	660
caatgtgggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgtcatgga acgcatgtag cgctgacgtc ccttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcag gctggggcct ttgggctggt gcagcccgca	1080
atggaatgca ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcaagtag gcgcctcctc ttctgctcgc cctctctccg	1320
tccgcctctc agaatatcaa tgatcgagca ggacggcctc cacgccggct cccccgccgc	1380
ctgggtggag cgcctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgcctgtccg ccagggccg cccgtgctg ttctgtaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtgggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgagggtg cccggccagg acctgctgtc ctcccacctg gccccgccg agaaggtgtc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gccccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctgggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggccccc gccgagctgt tcgcccgcct	1860
gaaggcccg atgcccagc gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggttctatc gactgcggcc gcctgggctg	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggagg	2040
cgagtgggcc gaccgcttcc tgggtgctga cggcatcgcc gccccgact cccagcgcat	2100
cgccttctac cgcctgctgg acgagttctt ctgacaattg gcagcagcag ctcgatagtg	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgcca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400

026172-005010PC - Sequence Listing_1.TXT

ctcagcgctg ctctgtctcc tgctcactgc ccctcgcaca gccttggttt gggctccgcc	2460
tgtattctcc tggtactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccc cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggtctcg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tccccggcgt gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatgacg ttcggggtcg ccctccccgc catggggccgc	3120
ggtgtctccc ttccccggcc cagggtcgcg gtgcgcgccc agtcggcgag tcaggttttg	3180
gagagcgggc gcgccccga ctggtccatg ctgttcgccg tgatcaccac catcttcagc	3240
gccgccgaga agcagtggaac caacctggag tggaagccca agcccaagct gccccagctg	3300
ctggacgacc acttcggcct gcacggcctg gtgttccgcc gcaccttcgc catccgctcc	3360
tacgaggtgg gccccgaccg cagcacctcc atcctggccg tgatgaacca catgcaggag	3420
gccacctga accacgcca gagcgtgggc atcctggggc acggcttcgg caccacctg	3480
gagatgtcca agcgcgacct gatgtgggtg gtgcgcgcca cccacgtggc cgtggagcgc	3540
tacccacact ggggcgacac cgtggaggtg gagtgctgga tcggcgccag cggcaacaac	3600
ggcatgcgcc gcgacttcct ggtgcgcgac tgcaagaccg gcgagatcct gacctgctgc	3660
acctccctga gcgtgctgat gaacacccgc acccgccgcc tgagcaccat ccccgacgag	3720
gtgcgcggcg agatcggccc cgccttcac gacaacgtgg ccgtgaagga cgacgagatc	3780
aagaagctgc agaagctgaa cgactccacc gccgactaca tccagggcgg cctgaccccc	3840
cgctggaacg acctggacgt gaaccagcac gtgaacaacc tgaagtacgt ggcctgggtg	3900
ttcgagaccg tgccccgacag catcttcgag tcccaccaca tcagctcctt caccctggag	3960
taccgccgcg agtgcacccg cgactccgtg ctgcgcagcc tgaccaccgt gagcggcggc	4020
agctccgagg ccggcctggt gtgcgaccac ctgctgcagc tggagggcgg cagcgaggtg	4080
ctgcgcgccc gcaccgagtg gcgccccaa ctgaccgact ccttcgcgg catcagcgtg	4140
atccccgccg agccccgcgt gatggactac aaggaccacg acggcgacta caaggaccac	4200
gacatcgact acaaggacga cgacgacaag tgatgactcg aggcagcagc agctcggata	4260
gtatcgacac actctggacg ctggtcgtgt gatggactgt tgccgccaca cttgctgcct	4320
tgacctgtga atatccctgc cgcttttatc aaacagcctc agtgtgtttg atcttggtg	4380
tacgcgcttt tgcgagttgc tagctgcttg tgctatttgc gaataccacc cccagcatcc	4440

026172-005010PC - Sequence Listing_1.TXT

ccttcctcgc tttcatatcg cttgcatccc aaccgcaact tatctacgct gtcctgctat	4500
ccctcagcgc tgctcctgct cctgctcact gcccctcgca cagccttggt ttgggctccg	4560
cctgtattct cctggtactg caacctgtaa accagcactg caatgctgat gcacgggaag	4620
tagtgggatg ggaacacaaa tggaaagctt	4650

<210> 120

<211> 4653

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 120

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgcctgccgc atgcttggtc tggtagaggct gggcagtgtc	120
gccatgctga ttgaggcttg gttcatcggg tggaaagctta tgtgtgtgct gggcttgcat	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccaggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgcg acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaatgatcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctgta	540
tgcaagcatg cctggcgaa acacatggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcatggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcgggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcgag gctggggcct ttgggctggt gcagcccga	1080
atggaatgcg ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcgaaagtag gcgcccctct ttctgctcgc cctctctccg	1320
tccgcctct agaatatcaa tgatcgagca ggacggcctc cagccgggt ccccgccgc	1380
ctgggtggag cgcctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440

026172-005010PC - Sequence Listing_1.TXT

cgccgtgttc cgcctgtccg cccagggccg ccccgtgctg ttcgtgaaga ccgacctgtc	1500
cggcgccttg aacgagctgc aggacgaggg cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgaggtg cccggccagg acctgctgtc ctccacctg gccccgccg agaaggtgtc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac ccgcgccact gccccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggccccc gccgagctgt tcgcccgcct	1860
gaaggcccgc atgcccgcg gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggcgt	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgcac atcgccgagg agctgggcgg	2040
cgagtgggccc gaccgcttcc tgggtgctgta cggcatcgcc gcccccgact cccagcgcat	2100
cgccttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcgatagt	2160
atcgacacac tctggacgtt ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgtg ctctgtctcc tgctcactgc ccctcgca gccttggttt gggctccgcc	2460
tgtattctcc tggactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccg cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgtat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgcactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcaaac ccgcaaacac tagtatggct atcaagacga acaggcagcc tgtggagaag	3120
cctccgttca cgatcgggac gctgcgcaag gccatccccg cgcactgttt cgagcgctcg	3180
gcgcttcgtg ggccgcgccc cgactggtcc atgctgttcg ccgtgatcac caccatcttc	3240
agcgcgccc agaagcagtg gaccaacctg gagtggaagc ccaagcccaa gctgccccag	3300
ctgctggacg accacttcgg cctgcacggc ctggtgttcc gccgcacctt cgccatccgc	3360
tcctacgagg tgggccccga ccgcagcacc tccatcctgg ccgtgatgaa ccacatgcag	3420
gaggccaccc tgaaccacgc caagagcgtg ggcatacctg gcgacggctt cggcaccacc	3480

026172-005010PC - Sequence Listing_1.TXT

ctggagatgt ccaagcgcga cctgatgtgg gtggtgcgcc gcacccacgt ggccgtggag	3540
cgctacccca cctggggcga caccgtggag gtggagtgtc ggatcggcgc cagcggcaac	3600
aacggcatgc gccgcgactt cctggtgctc gactgcaaga ccggcgagat cctgacccgc	3660
tgcacctccc tgagcgtgtc gatgaacacc cgcacccgcc gcctgagcac catccccgac	3720
gaggtgctgc gcgagatcgg ccccgccctt atcgacaacg tggccgtgaa ggacgacgag	3780
atcaagaagc tgcagaagct gaacgactcc accgccgact acatccaggg cggcctgacc	3840
ccccgctgga acgacctgga cgtgaaccag cacgtgaaca acctgaagta cgtggcctgg	3900
gtgttcgaga ccgtgcccga cagcatcttc gagtcccacc acatcagctc cttcacctg	3960
gagtaccgcc gcgagtgcac ccgcgactcc gtgctgcgca gcctgaccac cgtgagcggc	4020
ggcagctccg aggccggcct ggtgtgctgc cacctgtctc agctggaggg cggcagcag	4080
gtgctgctgc cccgcaccga gtggcgcccc aagctgaccg actccttccg cggcatcagc	4140
gtgatccccg ccgagccccg cgtgatggac tacaaggacc acgacggcga ctacaaggac	4200
cacgacatcg actacaagga cgacgacgac aagtgatgac tcgaggcagc agcagctcgg	4260
atagtatcga cacactctgg acgctggctc tgtgatggac tgttgccgcc acacttgctg	4320
ccttgacctg tgaatatccc tgccgctttt atcaaacagc ctcatgtgtt ttgatcttgt	4380
gtgtacgcgc ttttgcgagt tgctagctgc ttgtgctatt tgcaataacc acccccagca	4440
tccccctccc tcgtttcata tcgcttgcac cccaaccgca acttatctac gctgtcctgc	4500
tatccctcag cgctgctcct gctcctgctc actgcccctc gcacagcctt ggtttgggct	4560
ccgcctgtat tctcctggta ctgcaacctg taaaccagca ctgcaatgct gatgcacggg	4620
aagtagtggg atgggaacac aaatggaaag ctt	4653

<210> 121

<211> 4653

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 121

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgccgc atgcttgtgc tggtagaggct gggcagtgtc	120
gccatgctga ttgaggcttg gttcatcggg tggaaagtta tgtgtgtgct gggcttgcac	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccagggtgg tcaatcgcgg cagccagagg gatttcagat gatcgcgctg acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaattgatc gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcatgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctgta	540

026172-005010PC - Sequence Listing_1.TXT

tgcaagcatg cctggcgaag acacatgggtg tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gtcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcggggtc gcgccccagc cagcggatgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgcctg gagaagcag gctggggcct ttgggctggt gcagcccgca	1080
atggaatgca ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcaagtag gcgcctcct ttctgctcg cctctctccg	1320
tccgcctct agaatatcaa tgatcgagca ggacggcctc cacgccggct cccccgccgc	1380
ctgggtggag cgctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgtccg ccagggccg cccgtgctg ttctgtaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgagggtg cccggccagg acctgctgtc ctcccacctg gccccgccg agaaggtgtc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gccccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggcccc gccgagctgt tcgcccgcct	1860
gaaggccccg atgcccagc gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggcgt	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggcgg	2040
cgagtgggcc gaccgcttcc tgggtgctgta cggcatcgcc gccccgact cccagcgc	2100
cgccttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgtg ctctgctcc tgctcactgc ccctcgaca gccttggttt gggctccgcc	2460
tgtattctcc tggtagtga acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccc cgtctcgaac agagcgcgca gaggaacgct	2580

026172-005010PC - Sequence Listing_1.TXT

gaagggtctcg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgccca cggtggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatac	2760
gaatttccttt cttgcgtat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatggcc accgcatcca ctttctcggc gttcaatgcc	3120
cgctgcggcg acctgcgtcg ctccggcgggc tccgggcccc ggcgcccagc gaggccccctc	3180
cccgtgcgcg ggcgcgcccc cgactggctc atgctgttcg ccgtgatcac caccatcttc	3240
agcgccgccc agaagcagtg gaccaacctg gagtggaagc ccaagcccaa gctgccccag	3300
ctgctggacg accacttcgg cctgcacggc ctgggtgttc gccgcacctt cgccatccgc	3360
tcctacgagg tgggccccga ccgcagcacc tccatcctgg ccgtgatgaa ccacatgcag	3420
gaggccaccc tgaaccacgc caagagcgtg ggcattcctg gcgacggctt cggcaccacc	3480
ctggagatgt ccaagcgga cctgatgtgg gtgggtgcgc gcacccacgt ggccgtggag	3540
cgctacccca cctggggcga caccgtggag gtggagtgtt ggatcggcgc cagcggcaac	3600
aacggcatgc gccgcgactt cctgggtgcgc gactgcaaga ccggcgagat cctgaccgcg	3660
tgcacctccc tgagcgtgct gatgaacacc cgcacccgcc gcctgagcac catccccgac	3720
gaggtgcgcg gcgagatcgg ccccgccctt atcgacaacg tggccgtgaa ggacgacgag	3780
atcaagaagc tgcagaagct gaacgactcc accgccgact acatccaggg cggcctgacc	3840
ccccgctgga acgacctgga cgtgaaccag cacgtgaaca acctgaagta cgtggcctgg	3900
gtgttcgaga ccgtgcccga cagcatcttc gagtcccacc acatcagctc cttcacctg	3960
gagtaccgcc gcgagtgac ccgcgactcc gtgctgcgca gcctgaccac cgtgagcggc	4020
ggcagctccg aggccggcct ggtgtgcgac cacctgctgc agctggaggg cggcagcgag	4080
gtgctgcgcg cccgcaccga gtggcgcccc aagctgaccg actccttcg cggcacgac	4140
gtgatccccg ccgagccccg cgtgatggac tacaaggacc acgacggcga ctacaaggac	4200
cacgacatcg actacaagga cgacgacgac aagtgatgac tcgaggcagc agcagctcgg	4260
atagtatcga cacactctgg acgctggctg tgtgatggac tgttgccgcc acacttgctg	4320
ccttgacctg tgaatatccc tgccgctttt atcaaacagc ctcagtgtgt ttgatcttgt	4380
gtgtacgcgc ttttgcgagt tgctagctgc ttgtgctatt tgcgaatacc acccccagca	4440
tccccttccc tcgtttcata tcgcttgcat cccaaccgca acttatctac gctgtcctgc	4500
tatccctcag cgctgctcct gctcctgctc actgcccctc gcacagcctt ggtttgggct	4560
ccgcctgtat tctcctggta ctgcaacctg taaaccagca ctgcaatgct gatgcacggg	4620

026172-005010PC - Sequence Listing_1.TXT

aagtagtggg atgggaacac aaatggaaag ctt

4653

<210> 122

<211> 4647

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 122

```

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac      60
gtgcttgggc gcctgccgcc tgcctgccgc atgcttgtgc tggtagaggct gggcagtgtc      120
gccatgtctga ttgaggcttg gttcatcggg tggaagctta tgtgtgtgct gggcttgcac      180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc      240
tccagggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgctg acaggttgag      300
cagcagtgtc agcaaaggta gcagtttgcc agaatgatcg gttcagctgt taatcaatgc      360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg      420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg      480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctgta      540
tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg      600
cacgccgttg agttggcagc aggtcagcc atgcaactgga tggcagctgg gctgccactg      660
caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt      720
tgcatggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat      780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc      840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gtcctctcgc ggtgtgggaa      900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg      960
gccacccttc ttgcgggggc gcgccccagc cagcggatgat gcgctgatcc caaacgagtt     1020
cacattcatt tgcattgctg gagaagcgag gctggggcct ttgggctggt gcagcccgca     1080
atggaatgcg ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatggt     1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa     1200
cgcgccagct cagcaacctg tcccgtgggt ccccgctgcc gatgaaatcg tgtgcacgcc     1260
gatcagctga ttgcccggct cgcgaagtag gcgccctcct ttctgctcgc cctctctccg     1320
tcccgcctct agaatatcaa tgatcgagca ggacggcctc cacgccggct ccccgccgcg     1380
ctgggtggag cgcctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc     1440
cgccgtgttc cgcctgtccg cccagggccg ccccgctgctg ttcgtgaaga ccgacctgtc     1500
cggcgccctg aacgagctgc aggacgaggc cgcccgctg tcttggtgg ccaccaccgg     1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct     1620

```

026172-005010PC - Sequence Listing_1.TXT

gggcgaggtg cccggccagg acctgctgtc ctccacctg gcccccgccg agaaggtgtc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttctga	1740
ccaccaggcc aagcaccgca tcgagcgcg cgcacccgc atggaggccg gcctgggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggccccc gccgagctgt tcgcccgcct	1860
gaaggccccg atgcccagcg gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggcgt	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgcac atcgccgagg agctgggcgg	2040
cgagtgggcc gaccgcttcc tgggtgctgta cggcatcgcc gccccgact cccagcgcat	2100
cgccttctac cgcctgctgg acgagttctt ctgacaattg gcagcagcag ctcggaatag	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgtctcc tgctcactgc ccctcgca ca gccttggttt gggctccgcc	2460
tgtattctcc tgggtactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccg cgtctcgaac agagcgcgca gaggaacgct	2580
gaagggtctcg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt ctctgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcaggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcaaac ccgcaaacac tagtatggct tccgcggcat tcaccatgtc ggcgtgcccc	3120
gcgatgactg gcagggcccc tggggcacgt cgctccggac ggccagtcgc caccgcctg	3180
agggggcgcg ccccgactg gtccatgctg ttcgccgtga tcaccacat cttcagcgcc	3240
gccgagaagc agtggacca cctggagtgg aagcccaagc ccaagctgcc ccagctgctg	3300
gacgaccact tcggcctgca cggcctgggt ttccgccgca ctttcgcat ccgctcctac	3360
gaggtgggcc ccgaccgcag cacctccatc ctggccgtga tgaaccacat gcaggaggcc	3420
acctgaacc acgccaagag cgtgggcatc ctgggcgacg gcttcggcac caccctggag	3480
atgtccaagc gcgacctgat gtgggtgggt cgccgcaccc acgtggccgt ggagcgctac	3540
cccacctggg gcgacaccgt ggaggtggag tgctggatcg gcgccagcgg caacaacggc	3600
atgcgccgcg acttcttggt gcgcgactgc aagaccggcg agatcctgac ccgctgcacc	3660

026172-005010PC - Sequence Listing_1.TXT

tccctgagcg tgctgatgaa caccgcacc cgccgcctga gcaccatccc cgacgaggtg	3720
cgcggcgaga tcggccccgc cttcatcgac aacgtggccg tgaaggacga cgagatcaag	3780
aagctgcaga agctgaacga ctccaccgcc gactacatcc agggcggcct gacccccgc	3840
tggaaacgacc tggacgtgaa ccagcacgtg aacaacctga agtacgtggc ctgggtgttc	3900
gagaccgtgc ccgacagcat cttcgagtcc caccacatca gtccttcac cctggagtac	3960
cgccgcgagt gacccgcga ctccgtgctg cgcagcctga ccaccgtgag cggcggcagc	4020
tccgaggccg gcctgggtgtg cgaccacctg ctgcagctgg agggcggcag cgaggtgctg	4080
cgcgcccgca ccgagtggcg cccaagctg accgactcct tccgcggcat cagcgtgatc	4140
cccgcggagc cccgcgtgat ggactacaag gaccacgacg gcgactacaa ggaccacgac	4200
atcgactaca aggacgacga cgacaagtga tgactcgagg cagcagcagc tcggatagta	4260
tcgacacact ctggacgctg gtcgtgtgat ggactgttg cgcacactt gctgccttga	4320
cctgtgaata tccctgccgc ttttatcaaa cagcctcagt gtgtttgatc ttgtgtgtac	4380
gcgcttttgc gagttgctag ctgcttgtgc tatttgcgaa taccaccccc agcatcccct	4440
tccctcgttt catatcgctt gcatcccaac cgcaacttat ctacgctgtc ctgctatccc	4500
tcagcgctgc tcctgctcct gctcactgcc cctcgcacag ccttggtttg ggctccgcct	4560
gtattctcct ggtactgcaa cctgtaaac agcactgcaa tgctgatgca cgggaagtag	4620
tgggatggga acacaaatgg aaagctt	4647

<210> 123

<211> 4721

<212> DNA

<213> Artificial sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 123

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgccgc atgcttgtgc tggtagggct gggcagtgtc	120
gccatgctga ttgaggcttg gttcatcggg tggaaagtta tgtgtgtgct gggcttgcac	180
gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccaggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgctg acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaattgatc gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcattgccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaaacctg caatcatcgg gcgggcgtga	540
tgcaagcatg cctggcgaag acacatgggt tgcggatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtgggt gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720

026172-005010PC - Sequence Listing_1.TXT

tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840
atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg	960
gccacccttc ttgcgggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgctg gagaagcag gctggggcct ttgggctggt gcagcccgca	1080
atggaatgcg ggaccgccag gctagcagca aaggcgccct ccctactccg catcgatgtt	1140
ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcaagtag gcgcctctct ttctgctcgc cctctctccg	1320
tcccgcctct agaatatcaa tgatcgagca ggacggcctc cagccggct cccccgccgc	1380
ctgggtggag cgctgttctg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgtccg cccaggggcg ccccgctgtg ttctggaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct	1620
gggcgagggtg cccggccagg acctgctgtc ctccacctg gccccgccg agaagggtgc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctgggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggcccc gccgagctgt tcgccccct	1860
gaaggccccg atgcccagc gcgaggacct ggtggtgacc cagggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggctg	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggagg	2040
cgagtgggcc gaccgcttcc tgggtgctgta cggcatcgcc gccccgact cccagcgcat	2100
cgcttctac cgctgtgtg acgagttctt ctgacaattg gcagcagcag ctcgatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgcc cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgcga ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgctcc tgctcactgc ccctgcaca gccttggttt gggctccgcc	2460
tgtattctcc tggtagtgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccc cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcagggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760

026172-005010PC - Sequence Listing_1.TXT

gaatttccttt cttgcgctat gacactttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttaa atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacgg cgcgccatgg ccaccacctc cctggcctcc gccttctgca	3120
gcatgaaggc cgtgatgctg gcccgcgacg gccgcggcat gaagccccgc tccagcgacc	3180
tgcagctgcg cgccggcaac gcccgagacct ccctgaagat gatcaacggc accaagttct	3240
cctacaccga gagcctgaag aagctgcccc actggtccat gctgttcgcc gtgatcacca	3300
ccatcttctc cgccgccgag aagcagtgga ccaacctgga gtggaagccc aagcccaacc	3360
ccccccagct gctggacgac cacttcggcc cccacggcct ggtgttccgc cgcaccttcg	3420
ccatccgcag ctacgaggtg ggccccgacc gctccaccag catcgtggcc gtgatgaacc	3480
acctgcagga ggccgccctg aaccacgcca agtccgtggg catcctgggc gacggcttcg	3540
gcaccaccct ggagatgtcc aagcgcgacc tgatctgggt ggtgaagcgc acccacgtgg	3600
ccgtggagcg ctaccccgcc tggggcgaca ccgtggaggt ggagtgcctg gtgggcgctt	3660
ccggcaacaa cggccgccgc cacttctc tggtgcgcga ctgcaagacc ggcgagatcc	3720
tgacccgctg cacctccctg agcgtgatga tgaacacccg caccgcgcgc ctgagcaaga	3780
tccccgagga ggtgcgcggc gagatcggcc ccgccttcat cgacaacgtg gccgtgaagg	3840
acgaggagat caagaagccc cagaagctga acgactccac cgccgactac atccagggcg	3900
gcctgacccc ccgctggaac gacctggaca tcaaccagca cgtgaacaac atcaagtacg	3960
tggactggat cctggagacc gtgcccgaca gcatcttcga gagccaccac atctcctcct	4020
tcaccatcga gtaccgccgc gagtgcacca tggacagcgt gctgcagtcc ctgaccaccg	4080
tgagcggcgg ctctcccgag gccggcctgg tgtgcgagca cctgctgcag ctggagggcg	4140
gcagcgaggt gctgcgcgcc aagaccgagt ggcgccccaa gctgaccgac tccttcgcgcg	4200
gcatcagcgt gatccccgcc gagtccagcg tgatggacta caaggaccac gacggcgact	4260
acaaggacca cgacatcgac tacaaggacg acgacgacaa gtgatgactc gaggcagcag	4320
cagctcggat agtatcgaca cactctggac gctggctcgtg tgatggactg ttgccgccac	4380
acttgctgcc ttgacctgtg aatatccctg ccgcttttat caaacagcct cagtgtgttt	4440
gatcttgtgt gtacgcgctt ttgcgagttg ctagctgctt gtgctatttg cgaataccac	4500
ccccagcatc ccttccctc gtttcatatc gcttgcaccc caaccgcaac ttatctacgc	4560
tgtcctgcta tccctcagcg ctgctcctgc tcctgctcac tgcccctcgc acagccttgg	4620
tttgggctcc gcctgtattc tcctgggtact gcaacctgta aaccagcact gcaatgctga	4680
tgcacgggaa gtagtgggat gggaacacaa atggaaagct t	4721

026172-005010PC - Sequence Listing_1.TXT

<210> 124
 <211> 4650
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 124
 ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac 60
 gtgcttgggc gcctgccgcc tgcctgccgc atgcttggtc tggtagaggct gggcagtgtc 120
 gccatgctga ttgaggcttg gttcatcggg tggaaactta tgtgtgtgct gggcttgcat 180
 gccgggcaat gcgcatggtg gcaagagggc ggcagcactt gctggagctg ccgcggtgcc 240
 tccagggtggt tcaatcgcgg cagccagagg gatttcagat gatcgcgctg acagggtgag 300
 cagcagtgtc agcaaaggta gcagtttgcc agaatgatcg gttcagctgt taatcaatgc 360
 cagcaagaga aggggtcaag tgcaaacacg ggcagccac agcacgggca ccggggagtg 420
 gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg 480
 gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctgta 540
 tgcaagcatg cctggcgaag acacatggtg tgcggatgct gccggctgct gcctgctgcg 600
 cagcgcgttg agttggcagc aggtcagcc atgcactgga tggcagctgg gctgccactg 660
 caatgtggtg gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt 720
 tgcattggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat 780
 gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc 840
 atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gtcctctctg ggtgtgggaa 900
 acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcgggg 960
 gccacccttc ttgcgggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt 1020
 cacattcatt tgcattgctg gagaagcgag gctggggcct ttgggctggt gcagcccgca 1080
 atggaatgcg ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatggt 1140
 ccatagtgca ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa 1200
 cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc 1260
 gatcagctga ttgcccggct cgcgaagtag gcgcccctct ttctgctcgc cctctctccg 1320
 tcccgcctct agaatatcaa tgatcgagca ggacggcctc cagccgggt ccccgccgc 1380
 ctgggtggag cgcctgttcg gctacgactg ggcccagcag accatcggct gctccgacgc 1440
 cgccgtgttc cgcctgtccg cccagggccg ccccgtgctg ttcgtgaaga ccgacctgtc 1500
 cggcgccctg aacgagctgc aggacaggc cggccgcctg tcctggctgg ccaccaccgg 1560
 cgtgccctgc gccgccgtgc tggacgtggt gaccgaggcc ggccgcgact ggctgctgct 1620
 gggcgagggtg cccggccagg acctgctgtc ctccacctg gccccgccg agaagggtgtc 1680
 catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttcga 1740

026172-005010PC - Sequence Listing_1.TXT

ccaccaggcc aagcaccgca tcgagcgcgc ccgcacccgc atggaggccg gcctggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggccccc gccgagctgt tcgcccgcct	1860
gaaggccccg atgcccgcg gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggtttcatc gactgcggcc gcctgggctg	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgcac atcgccgagg agctgggctg	2040
cgagtgggccc gaccgcttcc tgggtctgta cggcatcgcc gccccgact cccagcgcac	2100
cgctttctac cgctgtctgg acgagtctt ctgacaattg gcagcagcag ctcggatagt	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttggt ctatttgcca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcattccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgtctcc tgctcactgc ccctcgaca gccttggttt gggctccgcc	2460
tgtattctcc tgggtactgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccc cgtctcgaac agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcagggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatata	2760
gaattccttt ctgctgctat gacacttcca gcaaaaggta gggcgggctg cgagacggct	2820
tcccgcgct gcattgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880
atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg gcgcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatgacg ttcggggctg ccctcccggc catgggcccgc	3120
ggtgtctccc ttccccggcc cagggtcgcg gtgcgcgccc agtcggcgag tcaggttttg	3180
gagagcgggc gcgccccga ctggtccatg ctgttcgcg tgatcaccac catcttctcc	3240
gccgcccaga agcagtggac caacctggag tggaagccca agcccaaccc cccccagctg	3300
ctggacgacc acttcggccc ccacggcctg gtgttcgcg gcaccttcgc catccgcagc	3360
tacgaggtgg gccccgaccg ctccaccagc atcgtggccg tgatgaacca cctgcaggag	3420
gccgccctga accacgcca gtccgtgggc atcctgggcg acggcttcgg caccaccctg	3480
gagatgtcca agcgcgacct gatctgggtg gtgaagcgca cccacgtggc cgtggagcgc	3540
tacccgcctt gggcgacac cgtggaggtg gagtgcctgg tgggcgcctc cggcaacaac	3600
ggccgcccgc acgacttcct ggtgcgcgac tgcaagaccg gcgagatcct gacccgctgc	3660
acctccctga gcgtgatgat gaacacccgc acccgccgcc tgagcaagat ccccaggag	3720
gtgcgcggcg agatcgggcc cgctttcatc gacaacgtgg ccgtgaagga cgaggagatc	3780

026172-005010PC - Sequence Listing_1.TXT

aagaagcccc agaagctgaa cgactccacc gccgactaca tccagggcgg cctgaccccc	3840
cgctggaacg acctggacat caaccagcac gtgaacaaca tcaagtacgt ggactggatc	3900
ctggagaccg tgcccgcag catcttcgag agccaccaca tctcctcctt caccatcgag	3960
taccgccgag agtgcacat ggacagcgtg ctgcagtccc tgaccaccgt gagcggcggc	4020
tcctccgagg ccggcctggt gtgcgagcac ctgctgcagc tggagggcgg cagcgagggtg	4080
ctgcgcgcca agaccgagtg gcgccccaaag ctgaccgact ccttccgcgg catcagcgtg	4140
atccccgccc agtccagcgt gatggactac aaggaccacg acggcgacta caaggaccac	4200
gacatcgact acaaggacga cgacgacaag tgatgactcg aggcagcagc agctcggata	4260
gtatcgacac actctggacg ctggtcgtgt gatggactgt tgccgccaca cttgctgcct	4320
tgacctgtga atatccctgc cgcttttatc aaacagcctc agtgtgtttg atcttgtgtg	4380
tacgcgcttt tgcgagttgc tagctgcttg tgctatttgc gaataccacc cccagcatcc	4440
ccttccctcg tttcatatcg cttgcatccc aaccgcaact tatctacgct gtcctgctat	4500
ccctcagcgc tgctcctgct cctgctcact gccctcgca cagccttggt ttgggctccg	4560
cctgtattct cctggtactg caacctgtaa accagcactg caatgctgat gcacgggaag	4620
tagtgggatg ggaacacaaa tggaaagctt	4650

<210> 125

<211> 4653

<212> DNA

<213> Artificial sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 125

ggtacccgcc tgcaacgcaa gggcagccac agccgctccc acccgccgct gaaccgacac	60
gtgcttgggc gcctgccgcc tgctgccgc atgcttgtgc tggtagggct gggcagtgc	120
gccatgctga ttgaggcttg gttcatcggg tggaaagctta tgtgtgtgct gggcttgc	180
gccgggcaat gcgcatgggt gcaagagggc ggcagcactt gctggagctg ccgcggtgcc	240
tccagggtggt tcaatcgcg cagccagagg gatttcagat gatcgcgct acaggttgag	300
cagcagtgtc agcaaaggta gcagtttgcc agaagatgcg gttcagctgt taatcaatgc	360
cagcaagaga aggggtcaag tgcaaacacg ggcagccac agcacgggca ccggggagtg	420
gaatggcacc accaagtgtg tgcgagccag catcgccgcc tggctgtttc agctacaacg	480
gcaggagtca tccaacgtaa ccatgagctg atcaacactg caatcatcgg gcgggctga	540
tgcaagcatg cctggcgaag acacatgggt tgcggtatgct gccggctgct gcctgctgcg	600
cacgccgttg agttggcagc aggctcagcc atgcactgga tggcagctgg gctgccactg	660
caatgtgggt gataggatgc aagtggagcg aataccaaac cctctggctg cttgctgggt	720
tgcatggcat cgcaccatca gcaggagcgc atgcgaaggg actggcccca tgcacgccat	780
gccaaaccgg agcgcaccga gtgtccacac tgtcaccagg cccgcaagct ttgcagaacc	840

026172-005010PC - Sequence Listing_1.TXT

atgctcatgg acgcatgtag cgctgacgtc ccttgacggc gctcctctcg ggtgtgggaa	900
acgcaatgca gcacaggcag cagaggcggc ggcagcagag cggcggcagc agcggcggg	960
gccacccttc ttgcggggtc gcgccccagc cagcgggtgat gcgctgatcc caaacgagtt	1020
cacattcatt tgcattgcctg gagaagcgag gctggggcct ttgggctggg gcagcccgc	1080
atggaatgcg ggaccgccag gctagcagca aaggcgcctc ccctactccg catcgatgtt	1140
ccatagtga ttggactgca tttgggtggg gcggccggct gtttctttcg tgttgcaaaa	1200
cgcgccagct cagcaacctg tcccgtgggt cccccgtgcc gatgaaatcg tgtgcacgcc	1260
gatcagctga ttgcccggct cgcaagtag gcgcccctct ttctgctcgc cctctctccg	1320
tccgcctct agaatatcaa tgatcgagca ggacggcctc cacgccggct cccccgcgc	1380
ctgggtggag cgctgttctg gctacgactg ggcccagcag accatcggct gctccgacgc	1440
cgccgtgttc cgctgttccg cccaggggcg ccccgctgtg ttctgtaaga ccgacctgtc	1500
cggcgccctg aacgagctgc aggacgaggc cgccgcctg tcctggctgg ccaccaccgg	1560
cgtgccctgc gccgcctgc tggacgtggg gaccgaggcc ggccgcgact ggctgctgct	1620
gggagagggtg cccggccagg acctgctgtc ctccacctg gccccgcgc agaagggtgc	1680
catcatggcc gacgccatgc gccgcctgca caccctggac cccgccacct gcccttcga	1740
ccaccaggcc aagcaccgca tcgagcgcg ccgcacccgc atggaggccg gcctgggtgga	1800
ccaggacgac ctggacgagg agcaccaggg cctggccccc gccgagctgt tcgcccgcct	1860
gaaggcccg atgcccagc gcgaggacct ggtggtgacc cacggcgacg cctgcctgcc	1920
caacatcatg gtggagaacg gccgcttctc cggcttcac gactgcggcc gcctgggctg	1980
ggccgaccgc taccaggaca tcgccctggc caccgcgac atcgccgagg agctgggagg	2040
cgagtgggcc gaccgcttcc tgggtgctgta cggcatcgcc gccccgact cccagcgcat	2100
cgccttctac cgctgctgg acgagttctt ctgacaattg gcagcagcag ctcggaatg	2160
atcgacacac tctggacgct ggtcgtgtga tggactgttg ccgccacact tgctgccttg	2220
acctgtgaat atccctgccg cttttatcaa acagcctcag tgtgtttgat cttgtgtgta	2280
cgcgcttttg cgagttgcta gctgcttgtg ctatttgca ataccacccc cagcatcccc	2340
ttccctcggt tcatatcgct tgcatcccaa ccgcaactta tctacgctgt cctgctatcc	2400
ctcagcgctg ctctgctcc tgctcactgc cctcgcaca gccttggttt gggctccgcc	2460
tgtattctcc tggtagtgca acctgtaaac cagcactgca atgctgatgc acgggaagta	2520
gtgggatggg aacacaaatg gaggatcccg cgtctcgaa agagcgcgca gaggaacgct	2580
gaaggctctg cctctgtcgc acctcagcgc ggcatacacc acaataacca cctgacgaat	2640
gcgcttggtt cttcgtccat tagcgaagcg tccggttcac acacgtgcca cgttggcgag	2700
gtggcagggtg acaatgatcg gtggagctga tggtcgaaac gttcacagcc tagggatatc	2760
gaattccttt cttgcctat gacacttcca gaaaaggta gggcgggctg cgagacggct	2820
tccggcgct gcatgcaaca ccgatgatgc ttcgaccccc cgaagctcct tcggggctgc	2880

026172-005010PC - Sequence Listing_1.TXT

atgggcgctc cgatgccgct ccagggcgag cgctgtttta atagccaggc ccccgattgc	2940
aaagacatta tagcgagcta ccaaagccat attcaaacac ctagatcact accacttcta	3000
cacaggccac tcgagcttgt gatcgactc cgctaagggg ggcctcttc ctcttcgttt	3060
cagtcacaac ccgcaaacac tagtatggct atcaagacga acaggcagcc tgtggagaag	3120
cctccgttca cgatcgggac gctgcgcaag gccatccccg cgactgttt cgagcgctcg	3180
gcgcttcgtg ggcgcgcccc cgactggtcc atgctgttcg ccgtgatcac caccatcttc	3240
tccgccgccc agaagcagtg gaccaacctg gagtggaagc ccaagcccaa cccccccag	3300
ctgctggacg accacttcgg ccccccacggc ctggtgttcc gccgcacctt cgccatccgc	3360
agctacgagg tgggccccga ccgctccacc agcatcgttg ccgtgatgaa ccacctgcag	3420
gaggccgccc tgaaccacgc caagtccgtg ggcaccttg ggcacggctt cggcaccacc	3480
ctggagatgt ccaagcgca cctgatctgg gtggtgaagc gcacccacgt ggccgtggag	3540
cgctaccccc cctggggcga caccgtggag gtggagtgtt ggggtggcgc ctccggcaac	3600
aacggccgccc gccacgactt cctggtgcgc gactgcaaga ccggcgagat cctgacccgc	3660
tgcacctccc tgagcgtgat gatgaacacc cgcacccgcc gcctgagcaa gatccccgag	3720
gagggtgcgc gcgagatcgg cccgccttc atcgacaacg tggccgtgaa ggacgaggag	3780
atcaagaagc cccagaagct gaacgactcc accgccgact acatccaggg cggcctgacc	3840
ccccgctgga acgacctgga catcaaccag cacgtgaaca acatcaagta cgtggactgg	3900
atcctggaga ccgtgcccga cagcatcttc gagagccacc acatctctc cttaccatc	3960
gagtaccgcc gcgagtgcac catggacagc gtgctgcagt ccctgaccac cgtgagcggc	4020
ggctcctccg aggccggcct ggtgtgcgag cacctgctgc agctggaggg cggcagcgag	4080
gtgctgcgcg ccaagaccga gtggcgcccc aagctgaccg actccttccg cggcatcagc	4140
gtgatccccg ccgagtccag cgtgatggac tacaaggacc acgacggcga ctacaaggac	4200
cacgacatcg actacaagga cgacgacgac aagtgatgac tcgaggcagc agcagctcgg	4260
atagtatcga cacactctgg acgctggctg tgtgatggac tgttgccgcc acacttgctg	4320
ccttgacctg tgaatatccc tgccgctttt atcaaacagc ctcagtgtgt ttgatcttgt	4380
gtgtacgcgc ttttgcgagt tgctagctgc ttgtgctatt tgcaataacc acccccagca	4440
tccccctccc tcgtttcata tcgcttgcac cccaaccgca acttatctac gctgtcctgc	4500
tatccctcag cgctgctcct gctcctgctc actgcccctc gcacagcctt ggtttgggct	4560
ccgcctgtat tctcctggta ctgcaacctg taaaccagca ctgcaatgct gatgcacggg	4620
aagtagtggg atgggaacac aaatggaaag ctt	4653

<210> 126

<211> 3669

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

```

<400> 126
cccgtgatca cacaggtgcc ttgcgagcgt gatcacacta ttttgggggt cctacagtac      60
tgaaatggtg agaagtcgta ctgaaatcaa ggatgaacaa tgaaaatggt gctgtggtgg      120
cttctcaaag gtcaagaatc agtcgctcgc gtcaggaaat cgcggcgtca accagcgtgg      180
gcgcggtcag tggccccgca ctggtcacca tagcctctcc tgccacagta gcgatcccct      240
ggcggttcac tctcagcagc ggctgtactg cctcccagat tttcttcttc tggacctgcg      300
ggcgtgagag gatgagcagg gtggggccaa gggctcaatc ctgaacggcc ctcatcgggt      360
ttccaatccc acaacacata cccacagcag gtcagaccac gcattcgcac catgcgacc      420
aaataacgtg tccttacctg attgggtgtg gcaggctccg tggacaggag tgcctcgccc      480
cccgcccaga cccgctcccc cgtcacggcg gcgtccggga cccgcagcgg ctccaccgcg      540
gtgtgatccg cgttggcggc gcagagcagc atcccagccg atttgacccc gcgcatgctc      600
cgaggcttga ggttggccag caccaccacc cgccggccga caaggctctc cagggtcacg      660
tgccggacca ggccactcac gatggtgcga gggccccctt cctcgccgag gtcgatctgc      720
tcgacgtaca gactgcgaca tgcgtggcga gtggtcatca gaaggaagca ggtgtgcaga      780
aggggcacgt ggttgggtatt gagagtagcc aaagctttgt gccaatcaga aagtcaacgc      840
agctgcctgc ctggctcgcg tacaattcct ttcttgcgct atgacacttc cagcaaaagg      900
tagggcgggc tgcgagacgg cttcccggcg ctgcatgcaa caccgatgat gcttcgacct      960
cccgaagctc cttcgggggt gcatgggcgc tccgatgccg ctccagggcg agcgtgttt      1020
aaatagccag gcccccgatt gcaaagacat tatagcgagc taccaaagcc atattcaaac      1080
acctagatca ctaccacttc tacacaggcc actcgagctt gtgatcgcac tccgctaagg      1140
ggcgccctct tctcttcgt ttcagtcaca acccgcaaac ggcgcgccat gctgctgcag      1200
gccttcctgt tctgctggc cggcttcgcc gccaatgata gcgcctccat gacgaacgag      1260
acgtccgacc gccccctggt gcacttcacc cccaacaagg gctggatgaa cgacccaac      1320
ggcctgtggt acgacgagaa ggacgccaag tggcacctgt acttcagta caacccgaac      1380
gacaccgtct gggggacgcc cttgttctgg ggccacgcca cgtccgacga cctgaccaac      1440
tgaggaggacc agcccatcgc catcgccccg aagcgcaacg actccggcgc cttctccggc      1500
tccatggtgg tggactacaa caacacctcc ggcttcttca acgacacat cgacccgcgc      1560
cagcgctgcg tggccatctg gacctacaac acccggagt cggaggagca gtacatctcc      1620
tacagcctgg acggcggcta cacttcacc gagtaccaga agaaccccggt gctggccgcc      1680
aactccaccc agttccgcga cccgaaggct ttctggtacg agccctccca gaagtggatc      1740
atgaccgcgg ccaagtccca ggactacaag atcgagatct actcctccga cgacctgaag      1800
tcctggaagc tggagtcgcg gttcgccaac gagggcttcc tcggctacca gtacgagtgc      1860
cccggcctga tcgagggtccc caccgagcag gacccagca agtcctactg ggtgatgttc      1920

```

026172-005010PC - Sequence Listing_1.TXT

atctccatca accccggcgc cccggccggc ggctccttca accagtactt cgtcggcagc	1980
ttcaacggca ccacttcga ggccttcgac aaccagtccc gcgtgggtgga cttcggcaag	2040
gactactacg ccctgcagac cttcttcaac accgacccga cctacgggag cgccctgggc	2100
atcgcggtggg cctccaactg ggagtactcc gccttcgtgc ccaccaaccc ctggcgctcc	2160
tccatgtccc tcgtgcgcaa gttctccctc aacaccgagt accaggccaa cccggagacg	2220
gagctgatca acctgaaggc cgagccgatc ctgaacatca gcaacgccgg cccctggagc	2280
cggttcgcca ccaacaccac gttgacgaag gccaacagct acaacgtcga cctgtccaac	2340
agcaccggca ccctggagtt cgagctggtg tacgccgtca acaccacca gacgatctcc	2400
aagtccgtgt tcgcggacct ctccctctgg ttcaagggcc tggaggaccc cgaggagtac	2460
ctccgcatgg gcttcgaggt gtccgcgtcc tccttcttcc tggaccgcgg gaacagcaag	2520
gtgaagttcg tgaaggagaa cccctacttc accaaccgca tgagcgtgaa caaccagccc	2580
ttcaagagcg agaacgacct gtcctactac aagggtgtacg gcttgctgga ccagaacatc	2640
ctggagctgt acttcaacga cggcgacgtc gtgtccacca acacctactt catgaccacc	2700
gggaacgccc tgggctccgt gaacatgacg acgggggtgg acaacctgtt ctacatcgac	2760
aagttccagg tgcgcgaggt caagtgatta attaaactga ggcagcagca gctcggatag	2820
tatcgacaca ctctggacgc tggctgtgtg atggactgtt gccgccacac ttgctgcctt	2880
gacctgtgaa tatccctgcc gcttttatca aacagcctca gtgtgtttga tcttgtgtgt	2940
acgcgctttt gcgagttgct agctgcttgt gctatttgcg aataccaccc ccagcatccc	3000
cttccctcgt ttcatatcgc ttgcatccca accgcaactt atctacgctg tcctgctatc	3060
cctcagcgct gtcctgctc ctgctcactg cccctcgcac agccttggtt tgggctccgc	3120
ctgtattctc ctggtactgc aacctgtaaa ccagcactgc aatgctgatg cacgggaagt	3180
agtgggatgg gaacacaaat ggaaagcttg agctcggtac ccgtacccat cagcatccgg	3240
gtgaatcttg gcctccaaga tatggccaat cctcacatcc agcttggtgaa aatcgactag	3300
actgtctgca agtgggaatg tggagcaciaa ggttgcttgt agcgatcgac agactggtgg	3360
ggtacattga caggtgggca gcgccgcatc catcgtgcct gacgcgagcg ccgccggttg	3420
ctcgcccgtg cctgccgtca aagagcggca gagaaatcgg gaaccgaaaa cgtcacattg	3480
cctgatgttg ttacatgctg gactagactt tcttggcgtg ggtctgctcc tcgccaggtg	3540
cgcgacgcct cggggctggg tgcgaggag ccgtgcccgc acgcatttga caagacccaa	3600
agctcgcac tcagacggtc aaccgttcgt attatacatt caacatatgg tacatacgca	3660
aaaagcatg	3669

<210> 127

<211> 39

<212> PRT

<213> Prototheca moriformis

<400> 127

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

1 5 10 15
 Pro Arg Pro Arg Val Ala Val Arg Ala Gln Ser Ala Ser Gln Val Leu
 20 25 30

Glu Ser Gly Arg Ala Gln Leu
 35

<210> 128
 <211> 40
 <212> PRT
 <213> Prototheca moriformis

<400> 128
 Met Ala Ile Lys Thr Asn Arg Gln Pro Val Glu Lys Pro Pro Phe Thr
 1 5 10 15

Ile Gly Thr Leu Arg Lys Ala Ile Pro Ala His Cys Phe Glu Arg Ser
 20 25 30

Ala Leu Arg Gly Arg Ala Gln Leu
 35 40

<210> 129
 <211> 36
 <212> PRT
 <213> Prototheca moriformis

<400> 129
 Met Ala Ser Ala Ala Phe Thr Met Ser Ala Cys Pro Ala Met Thr Gly
 1 5 10 15

Arg Ala Pro Gly Ala Arg Arg Ser Gly Arg Pro Val Ala Thr Arg Leu
 20 25 30

Arg Gly Arg Ala
 35

<210> 130
 <211> 40
 <212> PRT
 <213> Chlorella protothecoides

<400> 130
 Met Ala Thr Ala Ser Thr Phe Ser Ala Phe Asn Ala Arg Cys Gly Asp
 1 5 10 15

Leu Arg Arg Ser Ala Gly Ser Gly Pro Arg Arg Pro Ala Arg Pro Leu
 20 25 30

Pro Val Arg Gly Arg Ala Gln Leu
 35 40

<210> 131
 <211> 87
 <212> PRT

<213> Cuphea hookeriana

<400> 131

Met Val Ala Ala Ala Ser Ser Ala Phe Phe Pro Val Pro Ala Pro
1 5 10 15Gly Ala Ser Pro Lys Pro Gly Lys Phe Gly Asn Trp Pro Ser Ser Leu
20 25 30Ser Pro Ser Phe Lys Pro Lys Ser Ile Pro Asn Gly Gly Phe Gln Val
35 40 45Lys Ala Asn Asp Ser Ala His Pro Lys Ala Asn Gly Ser Ala Val Ser
50 55 60Leu Lys Ser Gly Ser Leu Asn Thr Gln Glu Asp Thr Ser Ser Ser Pro
65 70 75 80Pro Pro Arg Thr Phe Leu His
85

<210> 132

<211> 60

<212> PRT

<213> Umbellularia californica

<400> 132

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

<210> 133

<211> 60

<212> PRT

<213> Cinnamomum camphora

<400> 133

Met Ala Thr Thr Ser Leu Ala Ser Ala Phe Cys Ser Met Lys Ala Val
1 5 10 15Met Leu Ala Arg Asp Gly Arg Gly Met Lys Pro Arg Ser Ser Asp Leu
20 25 30Gln Leu Arg Ala Gly Asn Ala Gln Thr Ser Leu Lys Met Ile Asn Gly
35 40 45Thr Lys Phe Ser Tyr Thr Glu Ser Leu Lys Lys Leu
Page 142

50

55

60

<210> 134

<211> 1104

<212> DNA

<213> Prototheca moriformis

<400> 134

```

atggcaccga ccagcctgct tgccagtact ggcgtctctt ccgcttctct gtggtcctct      60
gcgcgctcca gcgcgctgcgc ttttccggtg gatcatgcgg tccgtggcgc accgcagcgg      120
ccgctgcccc tgcagcgccg ctgcttccga acagtggcgg tcagggccgc acccgcggtg      180
gccgtccgtc cggaaccgcg ccaagagttt tgggagcagc ttgagccctg caagatggcg      240
gaggacaagc gcatcttcct ggaggagcac cgcattcggg gcaacgaggt gggcccctcg      300
cagcggctga cgatcacggc ggtggccaac atcctgcagg aggcggcggg caaccacgcg      360
gtggccatgt ggggcccggag ctcgaggagg ttccgcgacg acccgagagct gcaggaggcg      420
ggtctcatct ttgtgatgac gcgcatgcag atccaaatgt accgctaccc gcgctggggc      480
gacctgatgc aggtggagac ctggttccag acggcgggca agctaggcgc gcagcgcgag      540
tgggtgctgc gcgacaagct gaccggcgag gcgctggggc cggccacctc cagctgggtc      600
atgatcaaca tccgcacgcg ccggccgtgc cgcatgcccg agctcgtccg cgtcaagtgc      660
gccttcttcg cgcgcgagcc gccgcgcctg gcgctgccgc ccacggtcac gcgcgccaag      720
ctgccccaca tcgcgacgcc ggcgccgtg cgcgggcacc gccaggtcgc gcgccgcacc      780
gacatggaca tgaacgggca cgtgaacaac gtggcctacc tggcctgggt cctggaggcc      840
gtgcccagac acgtcttcag cgactaccac ctctaccaga tggagatcga cttcaaggcc      900
gagtgccacg cgggcgacgt catctcctcc caggccgagc agatccccgc ccaggaggcg      960
ctcacgcaca acggcgccgg ccgcaacccc tcctgcttcg tccatagcat tctgcgcgcc      1020
gagaccgagc tcgtccgcgc gcgaaccaca tggtcggccc ccacgcacgc gcccgccgcc      1080
aagccgcccc aggcgagcca ctga                                         1104

```

<210> 135

<211> 1104

<212> DNA

<213> Prototheca moriformis

<400> 135

```

atggcaccga ccagcctgct tgcccgtact ggcgtctctt ccgcttctct gtgctcctct      60
acgcgctccg gcgcgctgcgc ttttccggtg gatcatgcgg tccgtggcgc accgcagcgg      120
ccgctgcccc tgcagcgccg ctgcttccga acagtggctg tcagggccgc acccgcagta      180
gccgtccgtc cggaaccgcg ccaagagttt tgggagcagc ttgagccctg caagatggcg      240
gaggacaagc gcatcttcct ggaggagcac cgcattcgtg gcaacgaggt gggcccctcg      300
cagcggctga cgatcacggc ggtggccaac atcctgcagg aggcggcggg caaccacgcg      360
gtggccatgt ggggtcggag ctcgaggagg ttccgcgacg acccgagagct gcaggaggcg      420

```

026172-005010PC - Sequence Listing_1.TXT

```

ggcctcatct ttgtgatgac gcgcatgcag atccaaatgt accgctaccc gcgctggggc 480
gacctgatgc aggtggagac ctggttccag acggcgggca agctaggcgc gcagcgcgag 540
tgggtgctgc gcgacaagct gaccggcgag gcgctgggcg cggccacctc cagctgggtc 600
atgatcaaca tccgcacgcg ccggccgtgc cgcattgccc agctcgtccg cgtcaagtcg 660
gccttcttcg cgcgcgagcc gccgcgcctg gcgctgccgc ccgcggtcac gcgtgccaaag 720
ctgcccaca tgcgcagccc ggccgcgctg cgcgggcacc gccaggtcgc gcgccgcacc 780
gacatggaca tgaacggcca cgtgaacaac gttgcctacc tggcctggtg cctggaggcc 840
gtgcccagac acgtcttcag cgactaccac ctctaccaga tggagatcga cttcaaggcc 900
gagtgccacg cgggcgacgt catctctctc caggccgagc agatcccgcc ccaggaggcg 960
ctcacgcaca acggcgccgg ccgcaacccc tctgtcttcg tccatagcat tctgcgcgcc 1020
gagaccgagc tcgtccgcgc gcgaaccaca tggtcggccc ccatcgacgc gcccgcgcgc 1080
aagccgccc aagcgagcca ctga 1104

```

<210> 136

<211> 367

<212> PRT

<213> Prototheca moriformis

<400> 136

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

Leu Trp Ser Ser Ala Arg Ser Ser Ala Cys Ala Phe Pro Val Asp His
20 25 30

Ala Val Arg Gly Ala Pro Gln Arg Pro Leu Pro Met Gln Arg Arg Cys
35 40 45

Phe Arg Thr Val Ala Val Arg Ala Ala Pro Ala Val Ala Val Arg Pro
50 55 60

Glu Pro Ala Gln Glu Phe Trp Glu Gln Leu Glu Pro Cys Lys Met Ala
65 70 75 80

Glu Asp Lys Arg Ile Phe Leu Glu Glu His Arg Ile Arg Gly Asn Glu
85 90 95

Val Gly Pro Ser Gln Arg Leu Thr Ile Thr Ala Val Ala Asn Ile Leu
100 105 110

Gln Glu Ala Ala Gly Asn His Ala Val Ala Met Trp Gly Arg Ser Ser
115 120 125

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

Val Met Thr Arg Met Gln Ile Gln Met Tyr Arg Tyr Pro Arg Trp Gly
Page 144

026172-005010PC - Sequence Listing_1.TXT

```

145          150          155          160
Asp Leu Met Gln Val Glu Thr Trp Phe Gln Thr Ala Gly Lys Leu Gly
          165          170          175

Ala Gln Arg Glu Trp Val Leu Arg Asp Lys Leu Thr Gly Glu Ala Leu
          180          185          190

Gly Ala Ala Thr Ser Ser Trp Val Met Ile Asn Ile Arg Thr Arg Arg
          195          200          205

Pro Cys Arg Met Pro Glu Leu Val Arg Val Lys Ser Ala Phe Phe Ala
          210          215          220

Arg Glu Pro Pro Arg Leu Ala Leu Pro Pro Thr Val Thr Arg Ala Lys
          225          230          235          240

Leu Pro Asn Ile Ala Thr Pro Ala Pro Leu Arg Gly His Arg Gln Val
          245          250          255

Ala Arg Arg Thr Asp Met Asp Met Asn Gly His Val Asn Asn Val Ala
          260          265          270

Tyr Leu Ala Trp Cys Leu Glu Ala Val Pro Glu His Val Phe Ser Asp
          275          280          285

Tyr His Leu Tyr Gln Met Glu Ile Asp Phe Lys Ala Glu Cys His Ala
          290          295          300

Gly Asp Val Ile Ser Ser Gln Ala Glu Gln Ile Pro Pro Gln Glu Ala
          305          310          315          320

Leu Thr His Asn Gly Ala Gly Arg Asn Pro Ser Cys Phe Val His Ser
          325          330          335

Ile Leu Arg Ala Glu Thr Glu Leu Val Arg Ala Arg Thr Thr Trp Ser
          340          345          350

Ala Pro Ile Asp Ala Pro Ala Ala Lys Pro Pro Lys Ala Ser His
          355          360          365

<210> 137
<211> 367
<212> PRT
<213> Prototheca moriformis

<400> 137
Met Ala Pro Thr Ser Leu Leu Ala Arg Thr Gly Val Ser Ser Ala Ser
1          5          10          15

Leu Cys Ser Ser Thr Arg Ser Gly Ala Cys Ala Phe Pro Val Asp His
          20          25          30

```

026172-005010PC - Sequence Listing_1.TXT

Ala Val Arg Gly Ala Pro Gln Arg Pro Leu Pro Met Gln Arg Arg Cys
 35 40 45
 Phe Arg Thr Val Ala Val Arg Ala Ala Pro Ala Val Ala Val Arg Pro
 50 55 60
 Glu Pro Ala Gln Glu Phe Trp Glu Gln Leu Glu Pro Cys Lys Met Ala
 65 70 75 80
 Glu Asp Lys Arg Ile Phe Leu Glu Glu His Arg Ile Arg Gly Asn Glu
 85 90 95
 Val Gly Pro Ser Gln Arg Leu Thr Ile Thr Ala Val Ala Asn Ile Leu
 100 105 110
 Gln Glu Ala Ala Gly Asn His Ala Val Ala Met Trp Gly Arg Ser Ser
 115 120 125
 Glu Gly Phe Ala Thr Asp Pro Glu Leu Gln Glu Ala Gly Leu Ile Phe
 130 135 140
 Val Met Thr Arg Met Gln Ile Gln Met Tyr Arg Tyr Pro Arg Trp Gly
 145 150 155 160
 Asp Leu Met Gln Val Glu Thr Trp Phe Gln Thr Ala Gly Lys Leu Gly
 165 170 175
 Ala Gln Arg Glu Trp Val Leu Arg Asp Lys Leu Thr Gly Glu Ala Leu
 180 185 190
 Gly Ala Ala Thr Ser Ser Trp Val Met Ile Asn Ile Arg Thr Arg Arg
 195 200 205
 Pro Cys Arg Met Pro Glu Leu Val Arg Val Lys Ser Ala Phe Phe Ala
 210 215 220
 Arg Glu Pro Pro Arg Leu Ala Leu Pro Pro Ala Val Thr Arg Ala Lys
 225 230 235 240
 Leu Pro Asn Ile Ala Thr Pro Ala Pro Leu Arg Gly His Arg Gln Val
 245 250 255
 Ala Arg Arg Thr Asp Met Asp Met Asn Gly His Val Asn Asn Val Ala
 260 265 270
 Tyr Leu Ala Trp Cys Leu Glu Ala Val Pro Glu His Val Phe Ser Asp
 275 280 285
 Tyr His Leu Tyr Gln Met Glu Ile Asp Phe Lys Ala Glu Cys His Ala
 290 295 300

026172-005010PC - Sequence Listing_1.TXT

Gly Asp Val Ile Ser Ser Gln Ala Glu Gln Ile Pro Pro Gln Glu Ala
305 310 315 320

Leu Thr His Asn Gly Ala Gly Arg Asn Pro Ser Cys Phe Val His Ser
325 330 335

Ile Leu Arg Ala Glu Thr Glu Leu Val Arg Ala Arg Thr Thr Trp Ser
340 345 350

Ala Pro Ile Asp Ala Pro Ala Ala Lys Pro Pro Lys Ala Ser His
355 360 365

<210> 138

<211> 328

<212> PRT

<213> Cuphea hookeriana

<400> 138

Gln Leu Pro Asp Trp Ser Arg Leu Leu Thr Ala Ile Thr Thr Val Phe
1 5 10 15

Val Lys Ser Lys Arg Pro Asp Met His Asp Arg Lys Ser Lys Arg Pro
20 25 30

Asp Met Leu Val Asp Ser Phe Gly Leu Glu Ser Thr Val Gln Asp Gly
35 40 45

Leu Val Phe Arg Gln Ser Phe Ser Ile Arg Ser Tyr Glu Ile Gly Thr
50 55 60

Asp Arg Thr Ala Ser Ile Glu Thr Leu Met Asn His Leu Gln Glu Thr
65 70 75 80

Ser Leu Asn His Cys Lys Ser Thr Gly Ile Leu Leu Asp Gly Phe Gly
85 90 95

Arg Thr Leu Glu Met Cys Lys Arg Asp Leu Ile Trp Val Val Ile Lys
100 105 110

Met Gln Ile Lys Val Asn Arg Tyr Pro Ala Trp Gly Asp Thr Val Glu
115 120 125

Ile Asn Thr Arg Phe Ser Arg Leu Gly Lys Ile Gly Met Gly Arg Asp
130 135 140

Trp Leu Ile Ser Asp Cys Asn Thr Gly Glu Ile Leu Val Arg Ala Thr
145 150 155 160

Ser Ala Tyr Ala Met Met Asn Gln Lys Thr Arg Arg Leu Ser Lys Leu
165 170 175

Pro Tyr Glu Val His Gln Glu Ile Val Pro Leu Phe Val Asp Ser Pro
Page 147

026172-005010PC - Sequence Listing_1.TXT

180

185

190

Val Ile Glu Asp Ser Asp Leu Lys Val His Lys Phe Lys Val Lys Thr
 195 200 205

Gly Asp Ser Ile Gln Lys Gly Leu Thr Pro Gly Trp Asn Asp Leu Asp
 210 215 220

Val Asn Gln His Val Ser Asn Val Lys Tyr Ile Gly Trp Ile Leu Glu
 225 230 235 240

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

Leu Glu Tyr Arg Arg Glu Cys Gly Arg Asp Ser Val Leu Glu Ser Val
 260 265 270

Thr Ala Met Asp Pro Ser Lys Val Gly Val Arg Ser Gln Tyr Gln His
 275 280 285

Leu Leu Arg Leu Glu Asp Gly Thr Ala Ile Val Asn Gly Ala Thr Glu
 290 295 300

Trp Arg Pro Lys Asn Ala Gly Ala Asn Gly Ala Ile Ser Thr Gly Lys
 305 310 315 320

Thr Ser Asn Gly Asn Ser Val Ser
 325

<210> 139

<211> 322

<212> PRT

<213> Umbellularia californica

<400> 139

Pro Asp Trp Ser Met Leu Phe Ala Val Ile Thr Thr Ile Phe Ser Ala
 1 5 10 15

Ala Glu Lys Gln Trp Thr Asn Leu Glu Trp Lys Pro Lys Pro Lys Leu
 20 25 30

Pro Gln Leu Leu Asp Asp His Phe Gly Leu His Gly Leu Val Phe Arg
 35 40 45

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

Ser Ile Leu Ala Val Met Asn His Met Gln Glu Ala Thr Leu Asn His
 65 70 75 80

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

026172-005010PC - Sequence Listing_1.TXT

Met Ser Lys Arg Asp Leu Met Trp Val Val Arg Arg Thr His Val Ala
100 105 110

Val Glu Arg Tyr Pro Thr Trp Gly Asp Thr Val Glu Val Glu Cys Trp
115 120 125

Ile Gly Ala Ser Gly Asn Asn Gly Met Arg Arg Asp Phe Leu Val Arg
130 135 140

Asp Cys Lys Thr Gly Glu Ile Leu Thr Arg Cys Thr Ser Leu Ser Val
145 150 155 160

Leu Met Asn Thr Arg Thr Arg Arg Leu Ser Thr Ile Pro Asp Glu Val
165 170 175

Arg Gly Glu Ile Gly Pro Ala Phe Ile Asp Asn Val Ala Val Lys Asp
180 185 190

Asp Glu Ile Lys Lys Leu Gln Lys Leu Asn Asp Ser Thr Ala Asp Tyr
195 200 205

Ile Gln Gly Gly Leu Thr Pro Arg Trp Asn Asp Leu Asp Val Asn Gln
210 215 220

His Val Asn Asn Leu Lys Tyr Val Ala Trp Val Phe Glu Thr Val Pro
225 230 235 240

Asp Ser Ile Phe Glu Ser His His Ile Ser Ser Phe Thr Leu Glu Tyr
245 250 255

Arg Arg Glu Cys Thr Arg Asp Ser Val Leu Arg Ser Leu Thr Thr Val
260 265 270

Ser Gly Gly Ser Ser Glu Ala Gly Leu Val Cys Asp His Leu Leu Gln
275 280 285

Leu Glu Gly Gly Ser Glu Val Leu Arg Ala Arg Thr Glu Trp Arg Pro
290 295 300

Lys Leu Thr Asp Ser Phe Arg Gly Ile Ser Val Ile Pro Ala Glu Pro
305 310 315 320

Arg Val

<210> 140

<211> 345

<212> PRT

<213> Cinnamomum camphora

<400> 140

Pro Asp Trp Ser Met Leu Phe Ala Val Ile Thr Thr Ile Phe Ser Ala
Page 149

```

1           5           10           15
Ala Glu Lys Gln Trp Thr Asn Leu Glu Trp Lys Pro Lys Pro Asn Pro
20           25           30
Pro Gln Leu Leu Asp Asp His Phe Gly Pro His Gly Leu Val Phe Arg
35           40           45
Arg Thr Phe Ala Ile Arg Ser Tyr Glu Val Gly Pro Asp Arg Ser Thr
50           55           60
Ser Ile Val Ala Val Met Asn His Leu Gln Glu Ala Ala Leu Asn His
65           70           75           80
Ala Lys Ser Val Gly Ile Leu Gly Asp Gly Phe Gly Thr Thr Leu Glu
85           90           95
Met Ser Lys Arg Asp Leu Ile Trp Val Val Lys Arg Thr His Val Ala
100          105          110
Val Glu Arg Tyr Pro Ala Trp Gly Asp Thr Val Glu Val Glu Cys Trp
115          120          125
Val Gly Ala Ser Gly Asn Asn Gly Arg Arg His Asp Phe Leu Val Arg
130          135          140
Asp Cys Lys Thr Gly Glu Ile Leu Thr Arg Cys Thr Ser Leu Ser Val
145          150          155          160
Met Met Asn Thr Arg Thr Arg Arg Leu Ser Lys Ile Pro Glu Glu Val
165          170          175
Arg Gly Glu Ile Gly Pro Ala Phe Ile Asp Asn Val Ala Val Lys Asp
180          185          190
Glu Glu Ile Lys Lys Pro Gln Lys Leu Asn Asp Ser Thr Ala Asp Tyr
195          200          205
Ile Gln Gly Gly Leu Thr Pro Arg Trp Asn Asp Leu Asp Ile Asn Gln
210          215          220
His Val Asn Asn Ile Lys Tyr Val Asp Trp Ile Leu Glu Thr Val Pro
225          230          235          240
Asp Ser Ile Phe Glu Ser His His Ile Ser Ser Phe Thr Ile Glu Tyr
245          250          255
Arg Arg Glu Cys Thr Met Asp Ser Val Leu Gln Ser Leu Thr Thr Val
260          265          270
Ser Gly Gly Ser Ser Glu Ala Gly Leu Val Cys Glu His Leu Leu Gln

```

275

280

285

Leu Glu Gly Gly Ser Glu Val Leu Arg Ala Lys Thr Glu Trp Arg Pro
 290 295 300

Lys Leu Thr Asp Ser Phe Arg Gly Ile Ser Val Ile Pro Ala Glu Ser
 305 310 315 320

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

Ile Asp Tyr Lys Asp Asp Asp Asp Lys
 340 345

<210> 141

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 141

Lys Asp Glu Leu

1

<210> 142

<211> 6

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown: Higher plant fatty acyl-ACP thioesterase sequence

<400> 142

Leu Asp Met Asn Gln His

1

5

<210> 143

<211> 6

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown: Algal fatty acyl-ACP thioesterase sequence

<400> 143

Met Asp Met Asn Gly His

1

5