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(54) **ATOPY**

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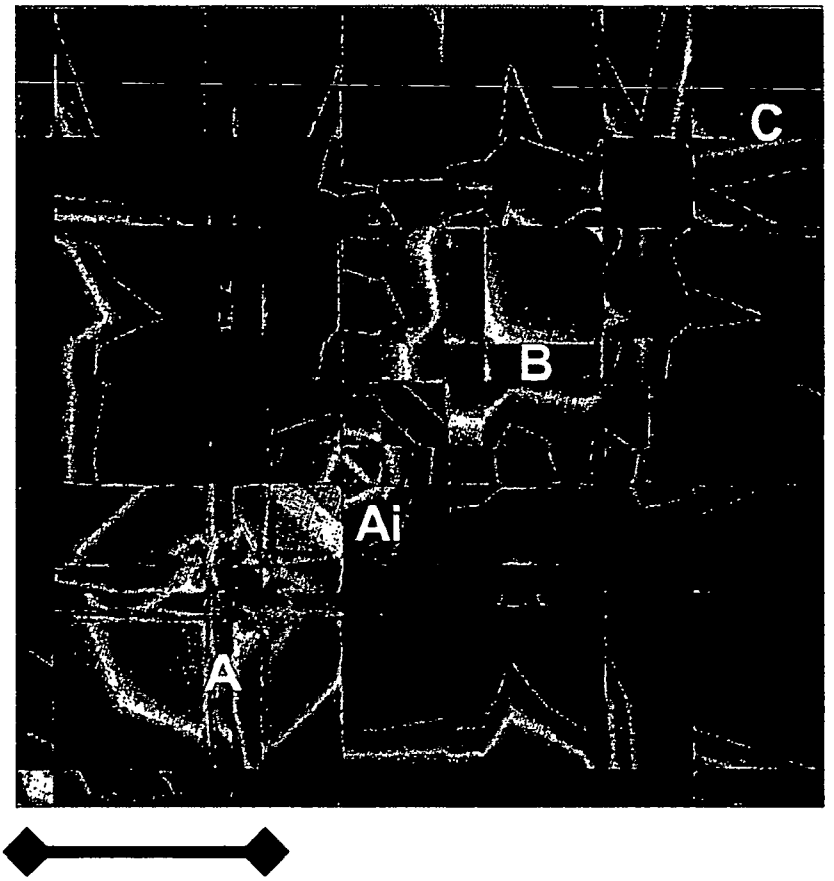
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(57) **ABSTRACT**

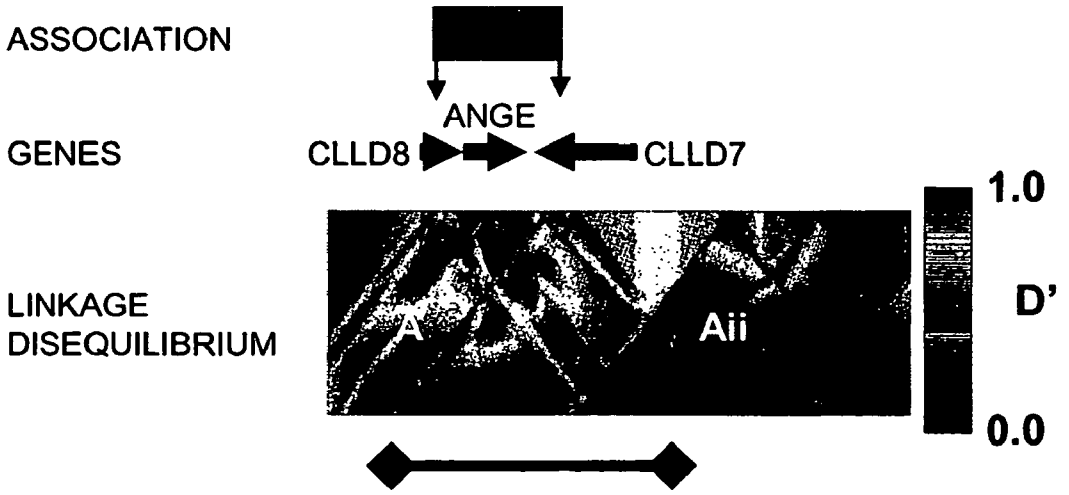
The present invention relates to isolated nucleic acid sequences of ANGE, CLLD8 and CLLD7 or sequences complementary or substantially homologous thereto or fragments thereof. Also provided are sequences comprising hybrid nucleic add sequences from two or more of the genes. Also provided are nucleic acid expression vectors, polypeptides, antibodies to the polypeptides, host cells, non-human transgenic animals and pharmaceutical compositions and agents. Also provided is the use of the nucleic acid sequence and/or protein in medicine and research, methods for diagnosing or determining predisposition to disease or severity of disease, methods for preventing or treating disease, and kits for use in the methods and the use of the nucleic acid sequence and protein in treating or preventing IgE mediated diseases and non-atopic asthma, and in screens for identifying new agents for use in the methods.

FIG. 1

a) Linkage disequilibrium map of the Atopy locus
The size bar indicates a region of 200Kb



b) Detail of LD around the ANGE (NY-REN-34) gene complex
The size bar indicates a region of 100Kb



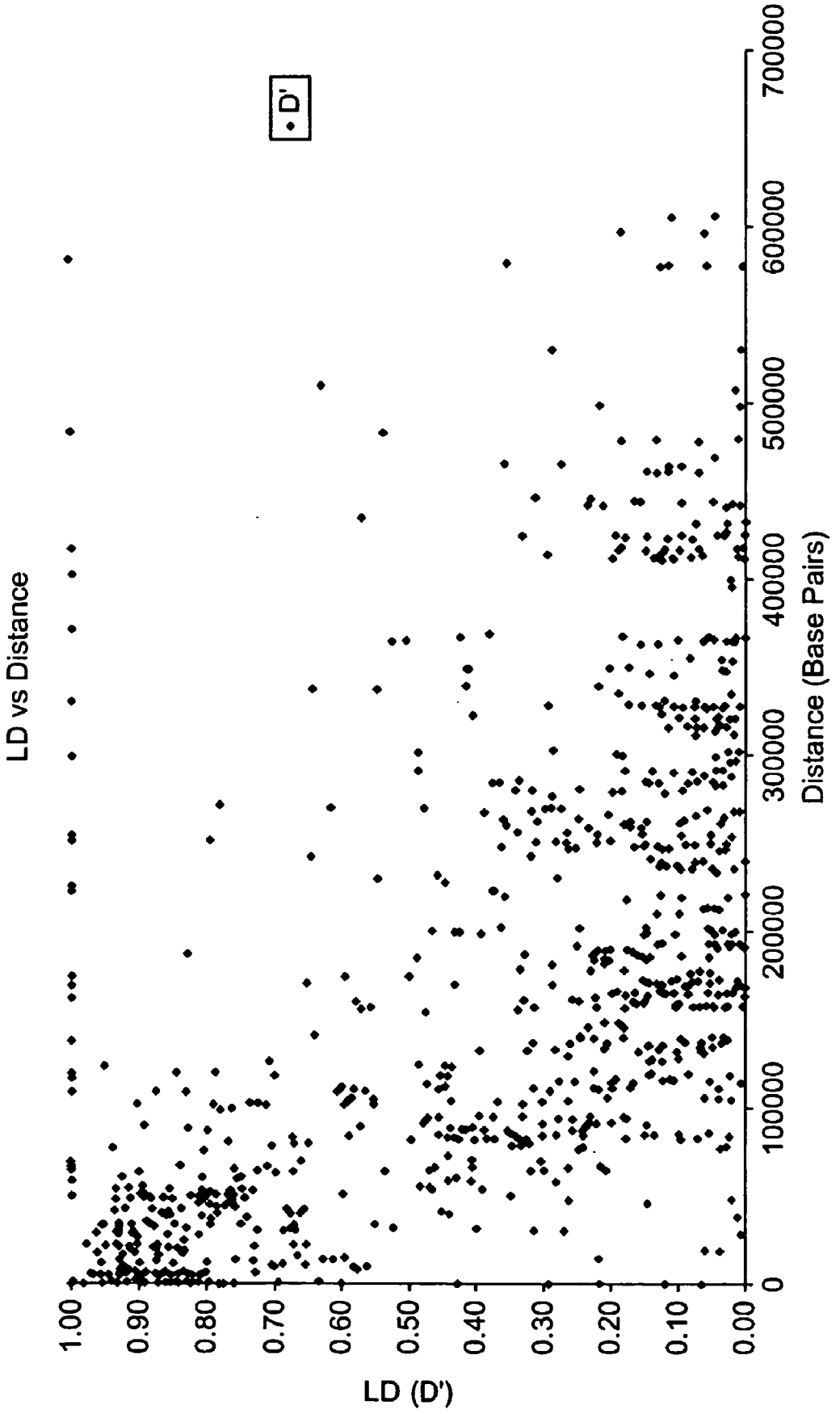

LD vs Distance
D'
LD (D')
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Distance (Base Pairs)
0
100000
200000
300000
400000
500000
600000
700000

FIG. 2

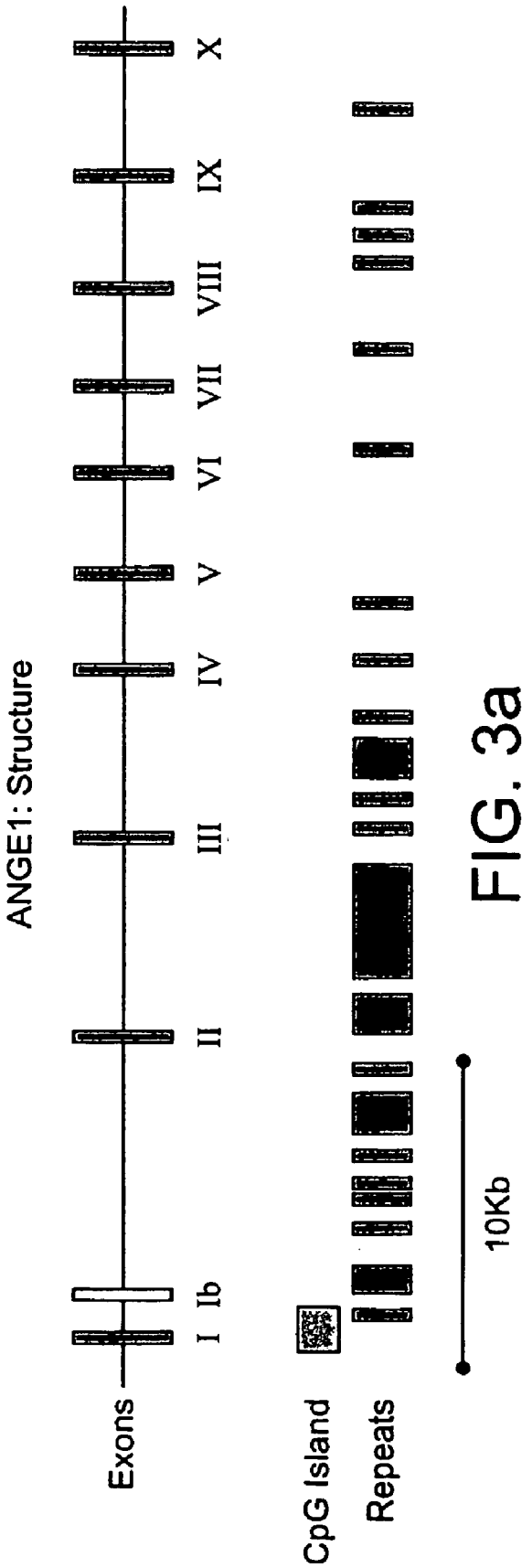

ANGE1: Structure
Exons
I Ib
II
III
IV
V
VI
VII
VIII
IX
X
CpG Island
Repeats
10Kb

FIG. 3a

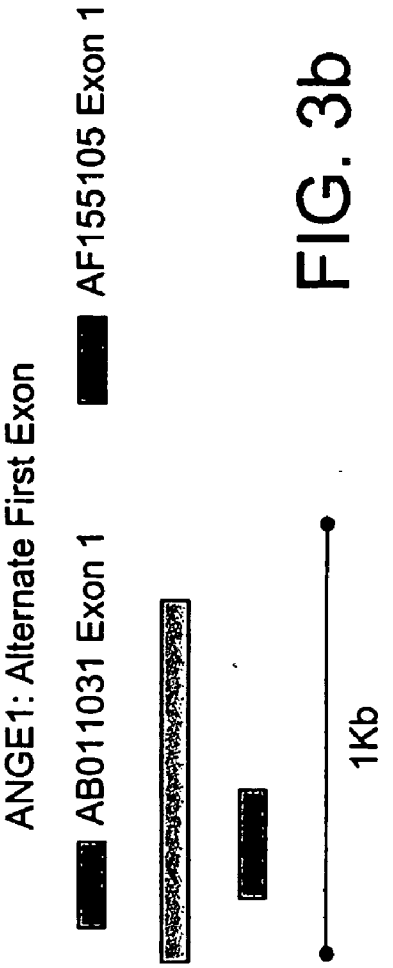

ANGE1: Alternate First Exon
AB011031 Exon 1
AF155105 Exon 1
CpG Island
Promoter
1Kb

FIG. 3b

Pile up of transcripts cloned by amplification between alternative exon I and exon III of ANGE. PCR primers mark the L and R extent of each transcript (so it can be seen that either of two primers were used for alternative exon I, whereas the same primer was always used for exon III). Multiple versions of alternative exon I are discernable, and skipping of exon II is observed in some transcripts. Variation is also observed in the length of exon II.

FIG. 3C/1	FIG. 3C/2
FIG. 3C/3	FIG. 3C/4

FIG. 3C

FIG. 3C/1

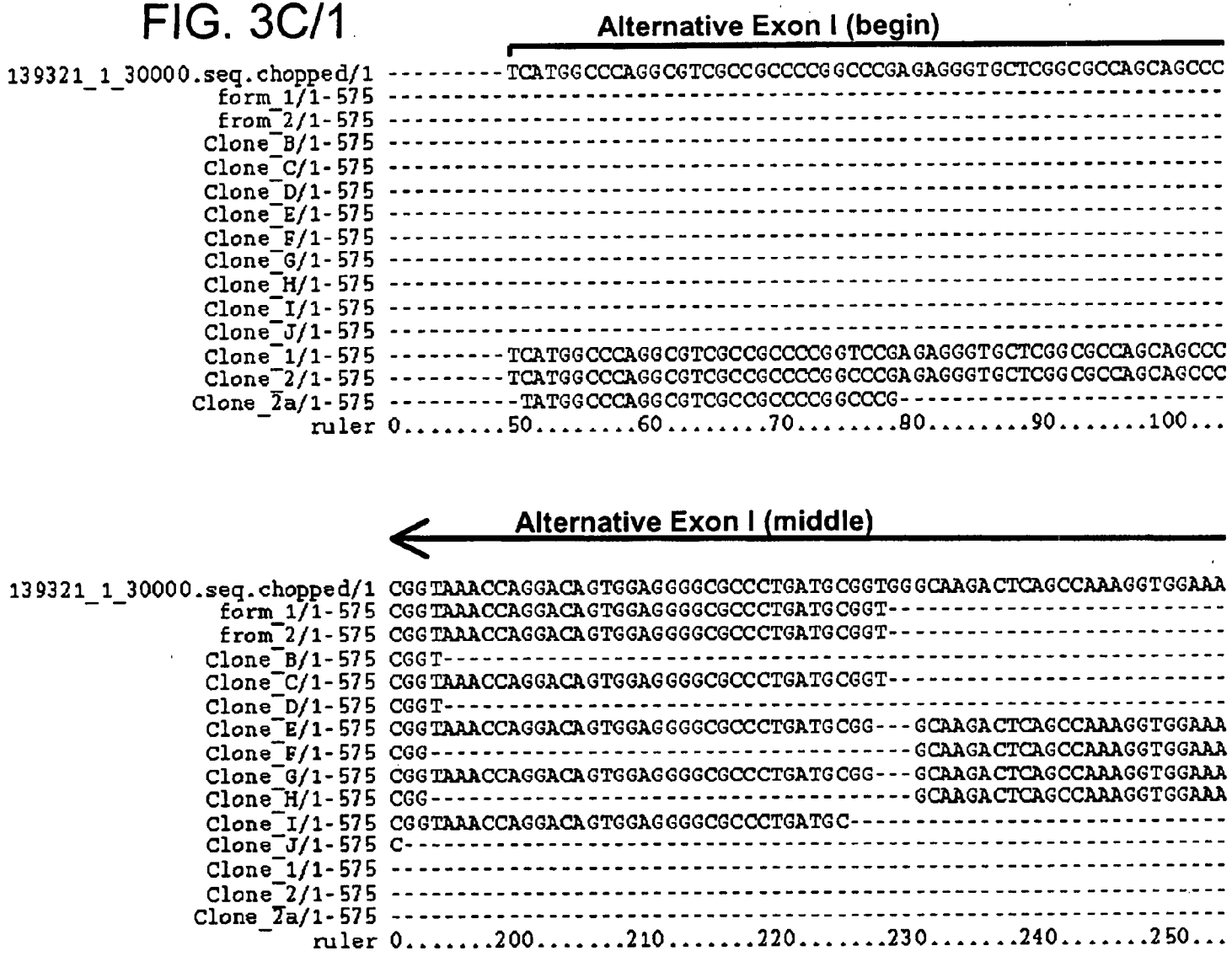

Alternative Exon I (begin)
139321_1_30000.seq.chopped/1 ---------TCATGGCCCAGGCGTCGCCGCCCCGGCCCGAGAGGGTGCTCGGCGCCAGCAGCCC
form_1/1-575 ----------
from_2/1-575 ----------
Clone_B/1-575 ----------
Clone_C/1-575 ----------
Clone_D/1-575 ----------
Clone_E/1-575 ----------
Clone_F/1-575 ----------
Clone_G/1-575 ----------
Clone_H/1-575 ----------
Clone_I/1-575 ----------
Clone_J/1-575 ----------
Clone_1/1-575 ---------TCATGGCCCAGGCGTCGCCGCCCCGGTCCGAGAGGGTGCTCGGCGCCAGCAGCCC
Clone_2/1-575 ---------TCATGGCCCAGGCGTCGCCGCCCCGGCCCGAGAGGGTGCTCGGCGCCAGCAGCCC
Clone_2a/1-575 ----------TATGGCCCAGGCGTCGCCGCCCCGGCCCG----------
ruler 0.....50.....60.....70.....80.....90.....100...
Alternative Exon I (middle)
139321_1_30000.seq.chopped/1 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGCGGTGGCAAGACTCAGCCAAAGGTGGAAA
form_1/1-575 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGCGGT----------
from_2/1-575 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGCGGT----------
Clone_B/1-575 CGGT----------
Clone_C/1-575 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGCGGT----------
Clone_D/1-575 CGGT----------
Clone_E/1-575 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGCGG---GCAAGACTCAGCCAAAGGTGGAAA
Clone_F/1-575 CGG----------GCAAGACTCAGCCAAAGGTGGAAA
Clone_G/1-575 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGCGG---GCAAGACTCAGCCAAAGGTGGAAA
Clone_H/1-575 CGG----------GCAAGACTCAGCCAAAGGTGGAAA
Clone_I/1-575 CGGTAAACCAGGACAGTGGAGGGGCGCCCTGATGC----------
Clone_J/1-575 C----------
Clone_1/1-575 ----------
Clone_2/1-575 ----------
Clone_2a/1-575 ----------
ruler 0.....200.....210.....220.....230.....240.....250...

FIG. 3C/2

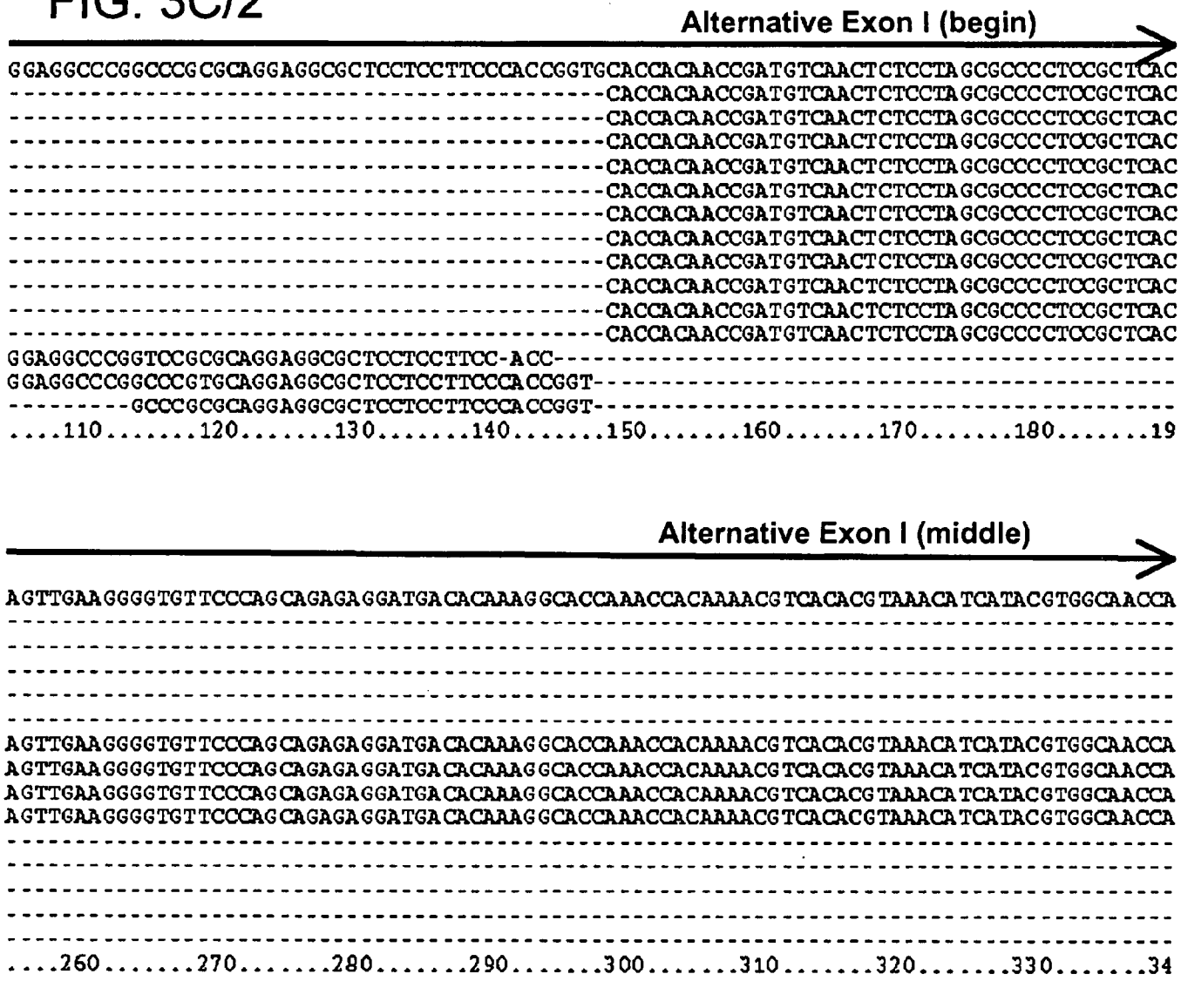

Alternative Exon I (begin)
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CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
CACCACAACCGATGTCAACTCTCCTAGCGCCCCTCCGCTCAC 42
GGAGGCCCGGTCCGCGCAGGAGGCGCTCCTCCTTCC-ACC 94
GGAGGCCCGGCCCGTGCAGGAGGCGCTCCTCCTTCCCACCGGT 98
GCCCGCGCAGGAGGCGCTCCTCCTTCCCACCGGT 63
....110.....120.....130.....140.....150.....160.....170.....180.....19
Alternative Exon I (middle)
AGTTGAAGGGGTGTTCCCAGCAGAGAGGATGACACAAAGGCACCAAACCACAAAACGTCACACGTAAACATCATACGTGGCAACCA 291
80
80
46
80
46
AGTTGAAGGGGTGTTCCCAGCAGAGAGGATGACACAAAGGCACCAAACCACAAAACGTCACACGTAAACATCATACGTGGCAACCA 189
AGTTGAAGGGGTGTTCCCAGCAGAGAGGATGACACAAAGGCACCAAACCACAAAACGTCACACGTAAACATCATACGTGGCAACCA 155
AGTTGAAGGGGTGTTCCCAGCAGAGAGGATGACACAAAGGCACCAAACCACAAAACGTCACACGTAAACATCATACGTGGCAACCA 189
AGTTGAAGGGGTGTTCCCAGCAGAGAGGATGACACAAAGGCACCAAACCACAAAACGTCACACGTAAACATCATACGTGGCAACCA 155
77
43
94
98
63
....260.....270.....280.....290.....300.....310.....320.....330.....34

FIG. 3C/3

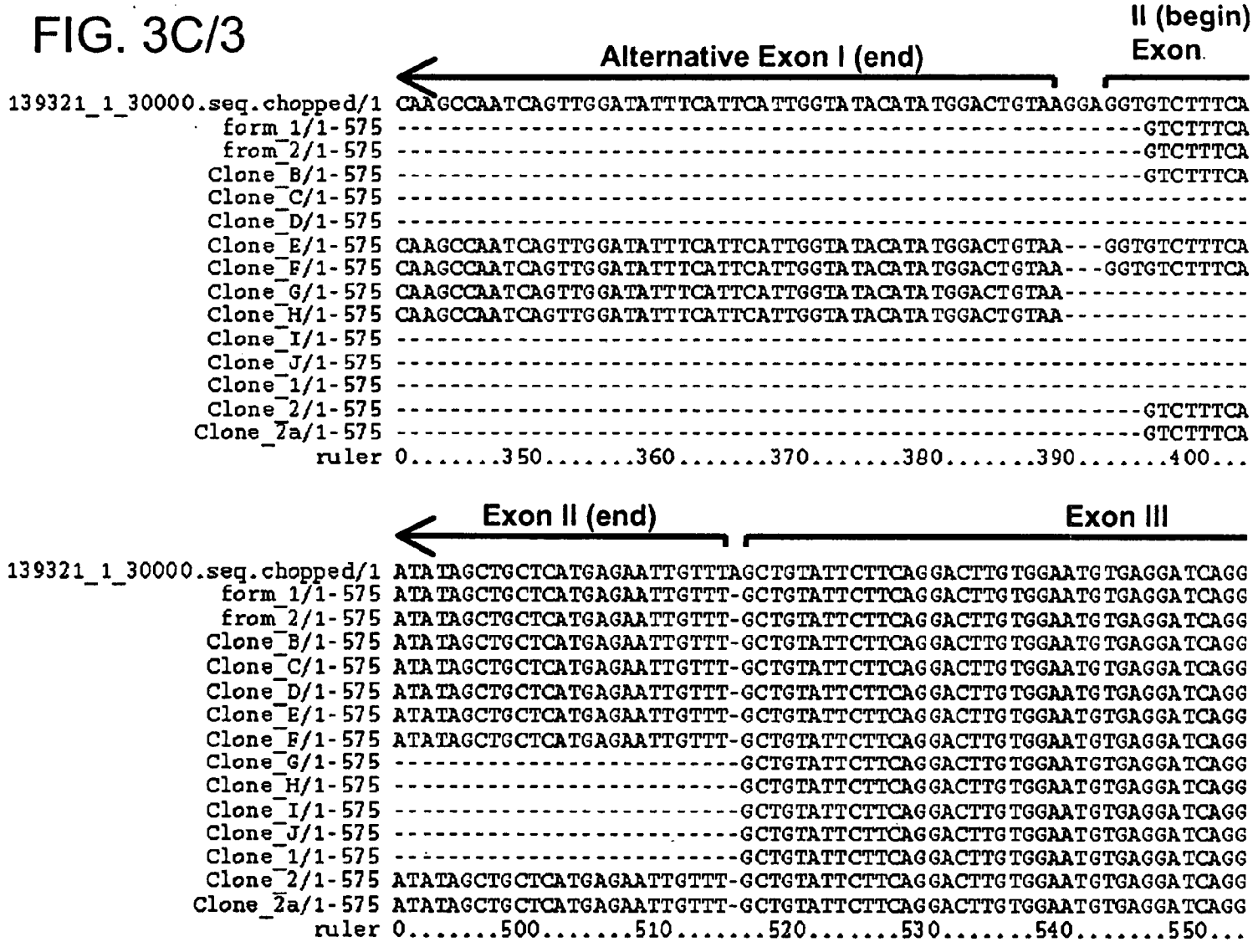

Alternative Exon I (end)
II (begin) Exon
139321_1_30000.seq.chopped/1 CAAGCCAATCAGTTGGATATTTCATTCATTGGTATACATATGGACTGTAAGGAGGTGTCTTTCA
form_1/1-575 ----------GTCTTTCA
from_2/1-575 ----------GTCTTTCA
Clone_B/1-575 ----------GTCTTTCA
Clone_C/1-575 ----------
Clone_D/1-575 ----------
Clone_E/1-575 CAAGCCAATCAGTTGGATATTTCATTCATTGGTATACATATGGACTGTAA---GGTGTCTTTCA
Clone_F/1-575 CAAGCCAATCAGTTGGATATTTCATTCATTGGTATACATATGGACTGTAA---GGTGTCTTTCA
Clone_G/1-575 CAAGCCAATCAGTTGGATATTTCATTCATTGGTATACATATGGACTGTAA----------
Clone_H/1-575 CAAGCCAATCAGTTGGATATTTCATTCATTGGTATACATATGGACTGTAA----------
Clone_I/1-575 ----------
Clone_J/1-575 ----------
Clone_1/1-575 ----------
Clone_2/1-575 ----------GTCTTTCA
Clone_2a/1-575 ----------GTCTTTCA
ruler 0.....350.....360.....370.....380.....390.....400...
Exon II (end)
Exon III
139321_1_30000.seq.chopped/1 ATATAGCTGCTCATGAGAATTGTTTAGCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
form_1/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
from_2/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_B/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_C/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_D/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_E/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_F/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_G/1-575 ----------GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_H/1-575 ----------GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_I/1-575 ----------GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_J/1-575 ----------GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_1/1-575 ----------GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_2/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
Clone_2a/1-575 ATATAGCTGCTCATGAGAATTGTTT-GCTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGG
ruler 0.....500.....510.....520.....530.....540.....550...

FIG. 3C/4

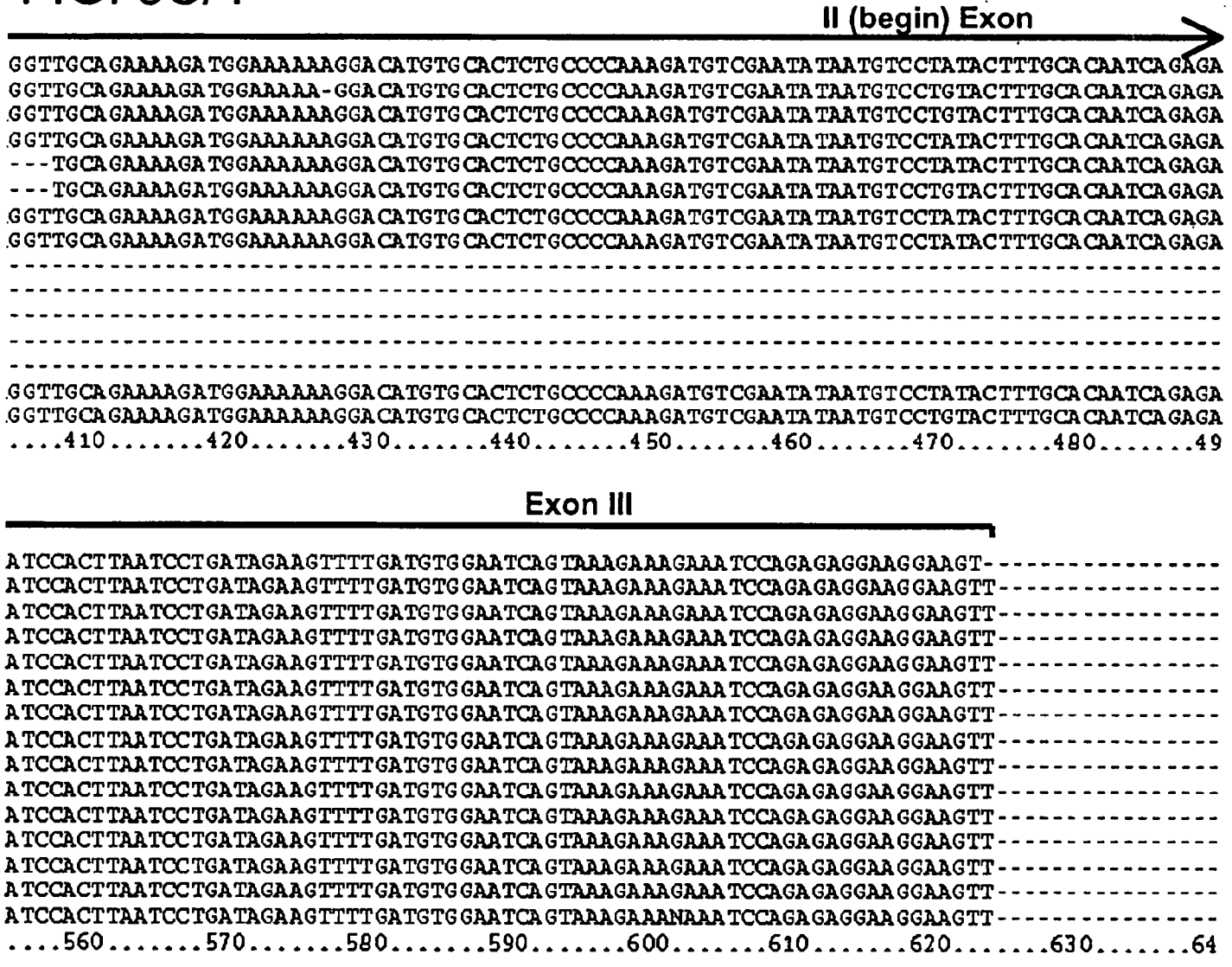

II (begin) Exon
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTATACTTTGCACAATCAGAGA 441
GGTTGCAGAAAAGATGGAAAAA-GGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTGTACTTTGCACAATCAGAGA 173
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTGTACTTTGCACAATCAGAGA 174
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTATACTTTGCACAATCAGAGA 140
---TGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTATACTTTGCACAATCAGAGA 163
---TGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTGTACTTTGCACAATCAGAGA 129
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTATACTTTGCACAATCAGAGA 336
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTATACTTTGCACAATCAGAGA 302
239
205
77
43
94
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTATACTTTGCACAATCAGAGA 192
GGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGATGTCGAATATAATGTCCTGTACTTTGCACAATCAGAGA 157
....410.....420.....430.....440.....450.....460.....470.....480.....49
Exon III
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGT---------- 574
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 306
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 307
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 273
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 296
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 262
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 469
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 435
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 347
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 313
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 185
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 151
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 202
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTT--------- 325
ATCCACTTAATCCTGATAGAAGTTTTGATGTGGAATCAGTAAAGAAANAAATCCAGAGAGGAAGGAAGTT--------- 290
....560.....570.....580.....590.....600.....610.....620.....630.....64

FIG. 3d

Transcription of ANGE to immune tissues from alternate exon 1

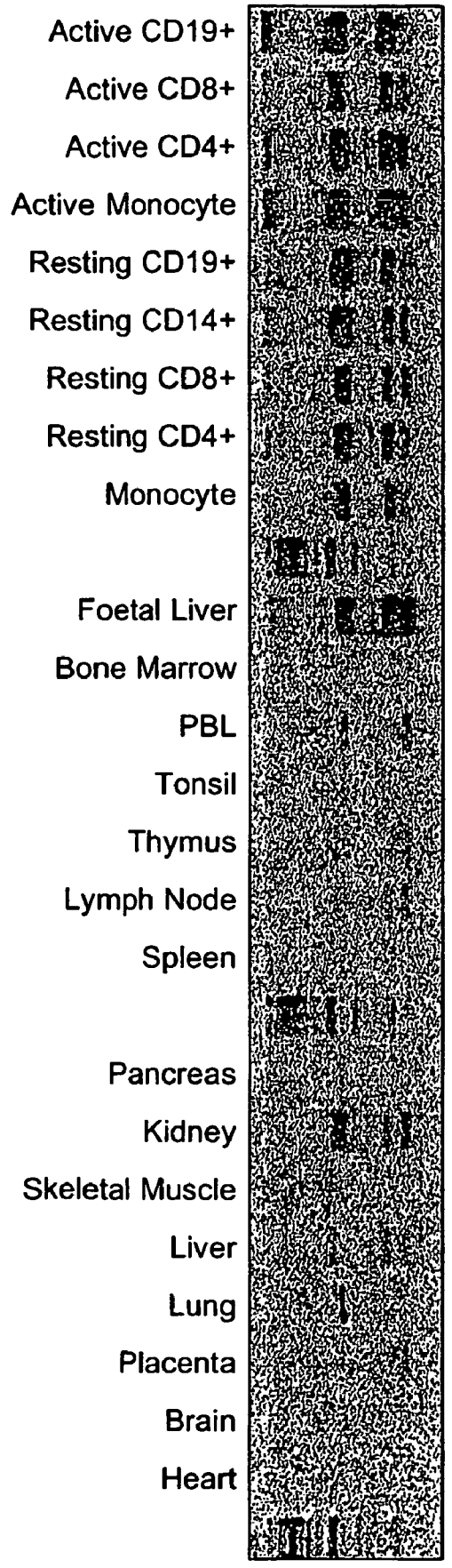
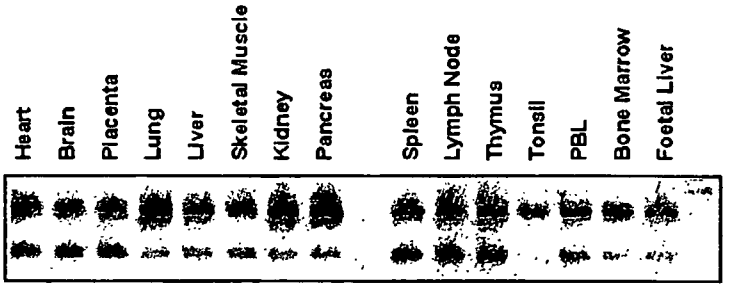


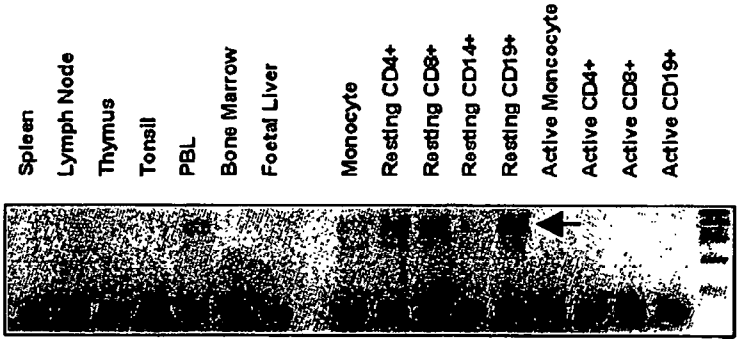
FIG. 4

Splice variation in ANGE in multiple tissue cDNA panels

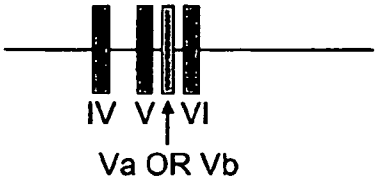
a) PCR amplifications of exons 1-3



b) PCR amplification of exon 4-6



Exon structure of alternatively spliced band



c) PCR amplification of exon 7-8

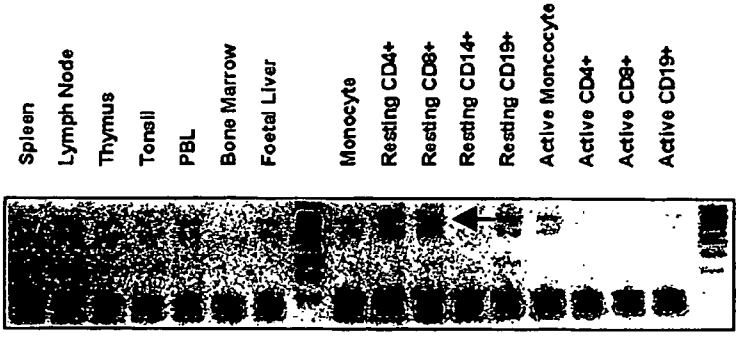


FIG. 5

bA103j18.03548

```
   1 gaattcttta aaattattta aaattaagag ttataagcaa ttctaatttc
  51 atctaatggt tcactgaagg ctgggctagg acctggtgtc taaatttttt
 101 tttaaacgat caaagccttc agagccgagt ggccagtcct ataatcctag
 151 gccactagaa aactgaattt cctgaatttt ctgaaaaagt ttttcaagta
 201 gaaagccttc tgggattttt ttttcttttt ttttttccag tccccacttt
 251 ggatgtagta aggcttctaa aggtcaagtt atcttgagct aagaaccttt
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 351 gtaaagagaa atcaaaaacag cttctatctg gctccgttaa ctacttttat
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1951 ccattagagg gttctgagct aagcagtgat aaaaagtccc tctggcttcg
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2551 tagataaggg cttagaaatg taaaggggct cagagggaaa ggtgggcagc
2601 acagagaaga gttgcagagc ataaggggga ggggggtggg cagcatggag
2651 aggtttgagg ggagcgtcag cagtaccaag atttttggg gcagtttgtc
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2751 tggggagaga aaaagagggg caggtttaga gaagaaaaaa tcatggtttg
```

```
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2901 atttctctat tgctttataa caaattatcc caaaatttag cagcttgaaa
2951 aaacaaactt atagtttctg tgggtcagga attgagaacc agcttaactg
3001 ggtaattctg atgcagggtc tctatgaggt tgtaatcaag atgtcaactg
3051 gggttgcagt catctcaagg ctctcctggg acttcactca ctttcaggtt
3101 cactcacatg gttgtctcca ggaaccctca gttcctcacc acatgagttt
3151 ttccataggg aagttacaca caccgtcatt tctgctgtat tctgtttgtt
3201 agagtgagtc attaagtata acacacacac aagggaaggg ggattagact
3251 tcacctttg aagaaaggag attcagagaa tgtgtggacc tctttctaaa
3301 ctcacaaaga atgttaaaag aagaaacaaa gcaagcctaa agcccatgaa
3351 gaatcaccag attatagctt gttcctctga ttcttattta gtatcaaaat
3401 attaggtttt acacttgtat tcccaggacg gactctaaaa ggggaagtac
3451 agttgcatac tcttcatata tgccaagtat ctattggaga caagcaattc
3501 tcaaagaaca agccattcca agctaaaaaa aatgtatttt atcatttggt
3551 tgaagctgtt tgtctcctat cactttgttt attaagccag tatcattagg
3601 tatcaagtgt attatttaat gtctttctgt tctcatcaca ggttattgct
3651 tacaactcag aaggtaaaag taatccaagt gaagtagtag aatttactac
3701 ttgccctgat aaaccaggca tacctgtaaa gccttcagtg aaaggaaaga
3751 tacattcaca cagttttaaa ataacctggg gtaagatatt atgcatgttt
3801 atacattatt acttttgcgt ttgattaaaa taatttgaat atgaagataa
3851 tttttaagat atttgagtaa atttgttatc tcaagccagt ccaaaaagaa
3901 atgtgagagt cattcattgg gtatgttttt tgtggaaaac cttatactct
3951 catacatgct aggttaagat atgataaaaa ggaacttgcg atccactgta
4001 agataatgag caggggtagc actgtgaaat gaaggattac tgaacttgca
4051 gctaaagtca cctgggtcat ctggctctcg taagaaatga aaaccattca
4101 tttaaaacaa acatttatcg agcacctacc tacataccta atggaaaaac
4151 aaagatccca taaacttgac ccttgcctga aaaattcaga ccaataaaaa
4201 tgcttcagtg atatttataa tattcaaaaa tttcaaacaa ccttaacatc
4251 taaagtaaat ggaggctggg catggtggct tacgcctgta atcccaacac
4301 tttgggaggc ccaggcgggc agatcacatg aggtcaggag ttcgagacca
4351 gcctggccaa catggtgaaa ccccgtctct actaaaacta caaaaattag
4401 ctgggcatgg tggcacatgc ctgtagtccc agctactcag gaggctgaag
4451 caggagaatc gcttgaaccc aggaggcaga ggttgcagtg agtcgagatt
4501 gtaccattgc attccagcct gggcaacaga gtgagactcc atctaaaaaa
4551 aataaataaa aataagtaaa tggaatatca tgcagccatt aaaaattgtt
4601 atagagagcc atattttaaa tatggtaaat taagtgaaaa gcagatgaca
4651 acagcatgga gtaattgggt actggtatta agtcattgca ggtgattttt
4701 ttttttaaa cctagtttgg tattctgttt attaggtttt ttttatcatt
4751 tttatgttgt tttgtacctt gcctaatact actttgcttc tttggataga
4801 tccaccaaaa gacaatggcg gagcaaccat caataaatat gtagtggaga
4851 tggcagaagg ttctaacggt atgaatggat attaaacact gatagattta
4901 ttccagccag tctctttcta ttctttatgg ctttacattt tatgtcatat
4951 cttttctttc ttcttgcttt tcataaggta caccataaaa agatgttcac
5001 ttcactttgg gttgtcctgg attttttttt tttaatgtca taagtttatt
5051 gacaaacata tctagtatgc catatgagtt caagtttgat ccacttccag
5101 aggctgtacc tcttaaaatg ctcttcatat ctgttaatgg atgaactgaa
5151 acatccttat gttttaagta gttgttgtct tactacaaga aagggtgtag
5201 caaatgcaga tccaaagtac aaacacatct tagctagtaa cgaccacttg
5251 ttttccactg aaaatggcaa attcttccca gggccctcct cacagtggct
5301 cctacggacc acagaggttg tgaacctccg gatgctctgg cccaacgtag
5351 cgctgctgga agctctgcga aaggcacaga aaccgaggac ggatgaaatg
5401 gcggcacctc accaagacct tttttttttc ctggattttt tttttctttg
5451 tttgtagcag ttaggatttt gcctgttatg atccacttta aattgtgatt
5501 tccagaaata cagtgaatca aatgtaagag tgctgaacaa ctgtatcgtt
5551 gcatttacat gttctttttg ttctcattta tttacattgc tcagcctcta
5601 tacacctaga ccaagtcatt agatactatg aatcttctga aggttagttt
5651 attcagttag atttatatac agatatatca gagaaggatt aacttctaaa
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FIG. 5 CONT'D

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5701 atttaactca catcatacta gttttagtag taagttttat gactagtgaa
5751 ctttattctt gaatcacaca tttagcagtg tttatttcta tgaaatgacc
5801 tatttcctgc caaaaagaaa aaaaagatgt cttttaatta ggactagact
5851 tcctctgata ctggtttttt gtactctttg tatgctataa cgttattact
5901 ggaccagtaa acacatttaa aatgcttaat taaaagtaaa ttatcaatct
5951 aggccaaagt ctgtacagag ttacagagat atttcacttc cacaaagcca
6001 tgcagacttg tctaggaagc tgcacacata aagaaaatta gatcatttcc
6051 aggaaaccga aacaaaccta aattgtttct gacaaattac acaaatactt
6101 actttgtgaa gctaggatac ctgatgtgtc catgatacca gaacgttaaa
6151 cattacctag tatctgattg aacacaattc ctcaccttac aggaaacaaa
6201 tgggaaatga tatacagtgg tgctaccagg gaacatcttt gtgatcgact
6251 gaatccaggc tgtttctatc gtttacgagt ttactgcatc agtgatggag
6301 gacagagtgc ggtaatactt atatgtagat tcttttgtgt tgttattaag
6351 tttggccaaa tggggtagga tcaccaggtg ccacttcaaa tattgaaaca
6401 tatccacaaa tggagaaaag taacttctgt aacctgttgg gttaatttga
6451 tagtgaccaa aatattctaa tgtggtactt agctcacagt aagtattcag
6501 tgtgtgtctg ttgtctggtt ggtattcagc tttggaaaaa caaatacatg
6551 aaaacattgg agaaaatttt ataaagataa atttgagaat gatgctcaat
6601 aaccatacta agcagagata gaaataaaat aattatagac cgatttactg
6651 ctccataaat tatgtgtgtg aggacacatc ataaaatagt atctgctgtt
6701 taatctactt tctaatattt acttacttca aaaaagttgg ccattatttt
6751 attattagag actcaataac caaaatgaac ttaaaatgta ccattgatat
6801 aaagacataa tgttctaggg atgtatgttt attaatgagt gatttttttt
6851 ttttttggga aacagtctca ctctgtcgcc caggctggag tgcagtggca
6901 cgattggggc tcactgcaac ctctgcctcc tgggttctgc aacctctgcc
6951 tcctgggttc aagaattctc ctgcttcagc ctccctagta gctgggacta
7001 caggcgcccc ccaccacaac tggctaattt ttgtattttt agtagagacg
7051 gggttttacc atgttggcca ggctggcctc gaactcctga cttcgtgatc
7101 caccggcctc agcctcccac agtgctggga ttacaggcat gagccaccgc
7151 acccggccaa gtgatttttt ttttttaaat gaattaaacc aagaatggtt
7201 tcttggatca ttcataattg ctgggttttt tttttgaaat gaaatttaat
7251 gcaatgaaag tattcttttt taaaaatgaa atataggcat tttgttgaaa
7301 atgaaactaa tgtgcaactg agtgtgagtc ctgcccaact ggcttgtgct
7351 ccagttgctt cattttatcc agtaagaaaa tctccctgga tttcagaaaa
7401 gcaacaacac atagacatgc acaaaatcct gttctactat agcattttac
7451 agcattttta catagatagc tttctgataa aaagatgacc aaatattttg
7501 tgtttaaaaa gaatgttaag tatgaacctt aatatgttgc aagtaagtaa
7551 tatgccactg agtttgtggc attgtttttt ttgagacaga gtctcactct
7601 gttgcccagg ctggagtgca gtggcacgat ctcggctcac tgccagctct
7651 gcctcttggg ttcacaccat tctcctgcct cagccttcca agtagctggg
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7751 agactgggtt tcaccatgtt aaccaggatg gtctcgatct tctgaccctg
7801 tgatccaccc gcctcagcct cccaaagcgc tgggattaca ggtgtgagcc
7851 accgcgcccg gcccagtgtg gcattgtttt taacagagtg tctttaaaaa
7901 taaaggcttt ttaaaatata aatatagcat agaaactaaa agcagtatca
7951 aatacctaga aagatgccaa gtaactggaa aagcttacct gattttagaa
8001 ttatttttag gtggaaagga tgaaggaaag ataatctttt aatgtataag
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8101 gggaggattg cttgagccta agaatttgag gctgtaatca tacctgtgaa
8151 tagcaactgc attccatcct gggcaacata ccaagacccc atctctaaaa
8201 ataaataaat aaatcagtgt ttaggttaaa aatacagtct acagtagtaa
8251 agtagccaaa atattctaaa cctccttaca acaatacaaa cagcatatac
8301 agtattttaa aacatccctc cttagaagag atttatggat ccttttggag
8351 aagatcaaaa atattgccca ttaaattgtg ttggaagttg tttttttctt
8401 tagttatgga aagaaaagga aaggaagggt tcattgaagt tctttttcag
8451 taacttgctt tgtatatagt agttgcacag tacatgtctt tctttgtcta
8501 tgaaaatttt gagtttttat ttaattgggt tttcattttt tttcagaact
8551 ttattccttt tttgttgaca atcaagtaca atttcaaatt atcagtgcaa
```

FIG. 5 CONT'D

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 8601 tatttgtgtt tatattattt ttccttacca aaagcaatct gattatttgg
 8651 ttttggggca tttttgtttt ctttttgctt ttgttttggc aggtctctga
 8701 atctttactt gtgcagactc cagctgtgcc tcctggccca tgcctccctc
 8751 ccagattaca gggtagaccc aaagcaaaag aaatacagtt acgatggggt
 8801 aatttccatt ttggtaataa attataatta agctagaaca ggaagtattc
 8851 gtcttgttaa attgcattaa tctttccatc ttttaggacc ccctctggtt
 8901 gatggtggat cacccatttc ctgttacagt gtggaaatgt ctcctataga
 8951 aaaagatgaa cctagagaag tttaccaagg ttctgaagta gaatgtacag
 9001 tgagcagcct tcttcctgga aagacataca gcttcagact acgtgcagct
 9051 aacaaaatgg gggtaagaag actgtgctgg tagaattata atcacaatgg
 9101 tgatatatgt ttcattttaa catatatcat catatccatt atttggccat
 9151 ttggctttaa catatgactc caaattttac aatttttaac aagcctacat
 9201 tgataaatac aagagaagtc ggtatattcc ataacttaat ttttatgaaa
 9251 tctcagtatt tttagatccc acttacagtt tgtgacactt tggacttcag
 9301 ctgggctaga gtttaccttt taggcagtgt taatagagtt tacttaatca
 9351 atttaagagt agaaataaaa tcataagtac tgaagttttt tgaggctgat
 9401 tgaagttttt gaggtttttg aggctgattg aagtttttg aggctaaagt
 9451 agcatttact ttcagttggc aactaattat gattcatttt ttttgcccaa
 9501 atgaaaaaaa acttatgctt gaaactattc tggttttgta tgtatttttt
 9551 gaaatattat ctatgtattt aatatataac tccaaaaagt ggacaaagta
 9601 ggtgatatct ccatttcaca actaaggaaa cgggttcagg aaagctaaat
 9651 attttgccca cagtcataca aactaataag tgatagaggt aagctacaaa
 9701 ccttagtttg tcagactcca gagccaaagc tctttccact cagctatgac
 9751 acctctcatc tctctgcaat aaagcaggtt ccctaaggac aaagcagtaa
 9801 tttcctatct cagctaaata acaatttctt tcaactattg tataattaaa
 9851 atttttatag aattaaactg acagttctct cctacccatt attttggtga
 9901 actatactat atttcaaatc ctgttttcca acagggttct gtatttacat
 9951 ctgtaaactt atttttcaat ttatttctgt ttgatttttt gaaacagggt
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10051 caacctccgc ctcctgggct caggtgaccc ttctacctca gcctcccaag
10101 tagctgggac cacaggtgta catcaccaca cctggataat tttttcatat
10151 ttttagtaga gagagggttt tgtcatgttg cccaggttag tctcaaactc
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10301 tacttaggct gctcttacac aagtcattcc tttctgtaag aagccatctt
10351 gtcagcctca caaggctgca gtacactagg atcgcatctt taatacttac
10401 gtcttaattt atattttcag gtttgtgata atttgtcaaa atcaccttaa
10451 gtaaatattt actttccgta tttccagaga acatacattt tagacctttc
10501 taaagctatt ccagatttta agataaaatt tatgcctacc agagagcagt
10551 actgataaat aatgtactat aagtacacta tttacagttt tattttaaat
10601 aaaatccatt cagcatgcta gaatggtgaa gctttgtcat tattttgttg
10651 ttgtcgacat gaattaacct tgttcaaaaa agggggggcaa aaaaatgaca
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10751 ccttacttca gttcttataa atagttgtgc taaacctcaa gtttctatca
10801 tttagtggcc ctttccatgc tctccatgaa ctaaactgaa ttatctgtgt
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10951 ctttttttttt gagacagggt atctgtcacc caggctggag agcaggggta
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11101 gctgattttt tacttttttta tagagatggg ggtcccctta tgtttcccag
11151 gttggtctca aactctcggg ctcaagtgat tcccccacct tagcctccca
11201 aagaggtggg attacaggca tgagcctctg cacctgacct tttatatata
11251 cttattattg taaatcattt gctgccacta gcagtctgta agtctatact
11301 attaaatgac atattggcca ggcatggtgg taaatgcatg taatcccagc
11351 actttgggag gccaaggtgg gtgggtcact tgaggtcagg agttcgagac
11401 cagcctgacc gacatggtga aacccccttct ctgctaaaaa tgcaaaactt
11451 agctgggcat agtggcgtgt gcctgtaatc ccagctgctc tggaggctga
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FIG. 5 CONT'D

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11501 ggcaggaaaa tcacttgaac ctgggaggcg gaggttacag tgagctgaaa
11551 tcatgccact acatccagcc tgggcgacag agtgagactc tgtctcaaaa
11601 aaaaaagcaa ttaaaaacaa aaaactatta aatgacagat ttatatttgg
11651 aattttggct aggcacagta gctcacacct gtaatcccaa tacttgggga
11701 ggccgaggct ggcagatcac ttcaggccag gagttcggga ccagcctggc
11751 caacatcggg aaaccccata tctactaaaa atacaaaaat tagctgggct
11801 tggtggtacc cacacctgta gtcccagcta ctcaggaggc tgaggcacaa
11851 gaatcgcttg aacccaggag gtggaggttg cagtgagctg agattgtgcc
11901 actgaactcc agcctgggca acaggctttt tctcaaaaaa ataataacat
11951 atttggaatt ttaaaattga ttgggttttc aaatttattg ttttaaatta
12001 ggaacttttg aactactaat aaaactatct gccatagttc attgattttt
12051 acatgaaata tttattttca agatggtttc aagattactt ttcacaaagc
12101 aggcgcatta tatcaccatt ttgctctgcc ttgtaaactt gccatctggg
12151 atttttgggt ggtattcatg tgagagtaaa gcatattctc tagcagtttc
12201 ctatagctac aggtttgttt gtttttttc attgcttcta acaggatata
12251 gttactatga gtccatgaaa tataatggaa atgtgaataa ggagtttact
12301 gaagacttta aacatttgat tttttttaa tcgtgaatat gatagaaact
12351 ggtagtgttg agcagtgcaa atatttgaag tggtgatttg tgaaatagcc
12401 cagcattgcc ttaaacaaaa tcacagtcta cttcttgttt tatacatatg
12451 atagtataaa aggtttcttt tttttcccat tttctgagat ttatagattg
12501 gtatatagct ttaaactata taaagtttta tggaaagatt ttttaaactt
12551 attaatataa attttaaagt tgatataatt aaagtgagcc tatcttctgt
12601 ttataaaatg caagattcct taacatttat aattatacag atgaaatagt
12651 ttctataagg aagttggagt tttgattttg ccctttatag atgttagatt
12701 gtgcagattt gtctgtattt tctcaccata tcaaataata cttttattat
12751 aagattggtt ttcaagagcc gtattagttg ttataattga ttagtatata
12801 gtttaacttt attcatcata tttatactgt agatttatgg ccagaggttg
12851 aggttatttc aggagagttg atgaccttca tttaaagtct agctaaaatc
12901 agtgctgtaa acaaaaggaa acatttacgt ttgtttctgt ttgccatata
12951 tagtagcctt gatttttac ttttttataa aacagttacg ttcacaatat
13001 tagcctgagg tattaatgac attgtgatga tacaaaatgg tgtatattcc
13051 ctgtgcaatc ggatttggag gaaaaatgaa ggacttaaca ttatctgaag
13101 tcactgatac tctgaataag tatggtcaag gagtgaacta ttttcttttg
13151 gaaaaacttt ttaaaatttt atttttaaag tattatactg ttatttttag
13201 ggcctaatgg ttacattgaa tagttggttt caccttctta aggtttttta
13251 ccaatattca tgaaacttga tatttttaaa atccctaccc tttggtaagt
13301 cgttatttat taacattttt attggtgatt aatacatgtt ttttcctaaa
13351 ttaaaaataa ataacttgga ataattttaa tattaaatat ttgttaacaa
13401 ctgaatgttt ccatagaatt ttctgagaag ttgagtttct tagagttttc
13451 gtagctggct gggcccagtg gctcatgcct gtaatcccag cactttggct
13501 caagcagtcc tccctctgag acaggaggac cacttgtgcc caggagtctg
13551 agaccagcct gggcaacatg gtgaaaccct gtctctgtaa aaagtagaaa
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13651 ctgaggtggg aggatggctt gagcccagga agtcgagggt gcagtgagcc
13701 atgtttgcac cactgcactc ctgcagtcta ggtgatggag ccagccagac
13751 cttgtctcaa aaaaaaaaaa aaaaaaaaaa aaagaagttg agctagctct
13801 taaagatggg catttggcaa aactgcctga tacagtgcag taacaagtag
13851 gtttacttct gaccattata atgatgcgcc actgttaagt gaaaatacca
13901 gtgtattggg gcttttcttt tgctaatgag ctttgaaaaa ttgatgacaa
13951 gaaatttctg taattgttct cctatgtgtc ggggaaggaa tttgccaata
14001 ctgaataaaa ttttttatat tccgggtaat gtatgttaaa agtaattatg
14051 agaaagtgag ctttttagca tggaacagaa aaatcaaatt ctgttacaaa
14101 ataaacaaat ttatagaaca gaatgttggt aaaatttgat atggaatatg
14151 cctaagaaag attcgtgaag tattaaaaaa ttaaaaataa taatttacac
14201 ctaccatctc ccgtaccttt aattagtatc aatttcttca ctccttatat
14251 ttctcctgaa ttattccacc gacctcattc cctaatgtcc tgcccttctt
14301 acaaaaacca tttcctgaag aaataagggg cagaagaaag tataggtaaa
14351 tgaaacttta aaatttctca caccttttact ttcatgattt ttaagtcttt
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FIG. 5 CONT'D

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14401 ttagttaatg tgaatactta tagaattatg accaaattaa tcttgaaaca
14451 cagggaaaag actttattaa tgaatcttta aatatgcagt tctgtgcaat
14501 cagtggacat ttaagggtga aaaataaaaa cactagttac atttgttttt
14551 ctagtttgga ccattttcag aaaaatgtga tattactaca gcccctgggc
14601 caccagatca gtgcaagccc cctcaagtga catgtagatc tgcaacttgt
14651 gcacaagtga attgggaggt attgtaattt ccattgactt gtatctactt
14701 tcttaagtga atagaatagt ttatataaaa gaataaagat actgttcatt
14751 tttaccgcct atattataca gagtaagccc tagtttaatt cacatgaaaa
14801 acagtgactt ctttttcctc tttgaagaat ttgagtaagg tatatttgca
14851 ttacaaatat ttagattcct gttcattatg tgctttgtat ttttatgaat
14901 ggctttgtct cagtactgag atatttcagc cactgtaagt ttaatgttca
14951 gaatagacat acacaggaat tagtaaattc tatttctctt atatttatcc
15001 agtacacatc tccagtgtac ttattgtgga tagtaataat cagtgatgat
15051 aattattata ttttcagttc cctttgaaat ttaacaaaat gtgtgtatgc
15101 ttttaacatt tcatattaat agaattatct tgaaacatat ttaccttaaa
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15201 gttatatatt tgaccaatct taaattcaga taatcttaat gaataaaaaa
15251 tgtaaaattg aacagttttg attgtgctta aaagttttaa agaaactcaa
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15401 aggttccttt gagtaatgga acagatgtca ctgaatatcg actggagtgg
15451 ggaggagttg aaggaagtat gcagatatgt tactgtgggc ctggtctcag
15501 ttatgaaata aaaggacttt caccagcaac tacctattat tgcagggtcc
15551 aggtaaagat gatcagtacc ttgtcactta actctatcca gagttttata
15601 tttcattggc attttcatgg tcatgacttt gttaactcgg aggctctgtt
15651 aatttgtagg ctctgagtgt tgtgggtgca ggccctttca gtgaagtagt
15701 agcctgtgtg actccaccat cagttcctgg cattgtgacc tgtcttcaag
15751 aaataagcga tgatgagata gaaaatcccc attattcacc ttctacatgc
15801 cttgcaataa gctgggaaaa gccttgtgat catggttcgg aaatccttgc
15851 ctacagcata gactttggag ataaacaatc cctaacagtg ggaaaggtta
15901 caagctatat tatcaacaat ttgcaaccag atacaacata caggtatact
15951 ctaaaaatta tgttgatttt tgcctagacc agagagacgc tttaaataaa
16001 acaatcataa ccaaactttt tttcttatgt ggcacttaga atacgaattc
16051 aagccttgaa tagccttgga gctggtcctt tcagccatat gataaaatta
16101 aaaactaagc ctctccctcc tgatccacct cgtctggaat gtgttgcctt
16151 tagccaccag aaccttaagc tgaaatgggg agaaggaact ccaaagacat
16201 tgtcaaccga ttctattcag taccaccttc agatggagga taagaatgga
16251 cggtaggttt ttttaattgc ttctttatat agtttcttag gtcttaagta
16301 tatacatttc tgtaactatt agaagtaggc caggtgtggt ggctgacacc
16351 tgtaatctca gcactttggg aggctgaggc aggcgaattg cttgagccca
16401 ggagtgcaag accagcctgg gcaagacagt gagaccttgt ctctaaaaaa
16451 aatttatttt aatgaagtaa gttttcaaaa acgaagtcaa gattgtcata
16501 caaaagtgtg ctgtttttaa aacgttagaa aacacaatgt acatttcctg
16551 tttataattt gtgagtggaa taccaagaga aaaaaataag tgggctactg
16601 tttggttgtt ttctgtaatc catttactgt tttcatgata gtaaaagaca
16651 cctaatctta gatacaaaat aaactcttca gtgtttattt ctagcaggac
16701 acaatttttt ttttttaaga caaggtcttg ctctgtcacc caggctggcc
16751 tccagtggca ctatcttggc tcattgcaac ctctgcctcc agggctggag
16801 ccatcctccc acctcagctc cccaagtatc tgtgaccaca ggcgtgggcc
16851 actacacctg gctaattttt gtatttttag tagagatggg gtttcaccat
16901 gtcgctcaca ctggtctcga actcctgggc tcaagtggtc ctccccgctc
16951 agcctcactg agtgctgaga ttacaactca tgagccactg tgcctgaccg
17001 aaacaatttt ttttttttt tttttgaga cggagtctca ctctcaccag
17051 gctggagtgc agtgacgcga tctcggctca ctgcaatctc cgcctctcag
17101 gttcaaacaa ttcccctgcc tcagcctccc aagtagctgg gactacaggt
17151 gcgcaccacc acgcccggct aatttttgt attttagtag aggcggagtt
17201 tcaccatgtt ggccaggatg gtctccatct cctgacctcc cgatccacct
17251 gcctcgacct cccaaagtgc tgggattaca ggcgtgagcc actgcacccg
```

FIG. 5 CONT'D

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17301 gccctgaaac aattttatag taaatgatta tgatcgttcc tggcctctga
17351 gatccttgag ggcagagatt atgtttcagt cttttccaga ttcctgacac
17401 agggcctgca cgctaaatga atacagttca gtttttcact gtgtgatctc
17451 agttagattc tgtgattaat tatctagtcc ctttgctaat cactgttgct
17501 aatctttgct aatctttgaa ttagaaagaa cctaatttca ttcaggttct
17551 ttctgtgcct ctttcacatc ttcatgtaca tgttgtacta ttcctatata
17601 atgtgccata tactgccaca ctaaatcatg tattttaatt acagtgttaa
17651 ctctgaatat ttgtaacagt cattctaatg ccaactaggg ctatttattc
17701 acattatatt ccatataagc aatgccacat acctcccaca gctgttaatc
17751 ctttaatatt ttaagaattt tgaattttgc ttttctactt ttcactgaat
17801 atattagaaa caatttccaa atctgatgga ctcagaatac tagtaacagt
17851 ttttcccaag atttactttt ctgtgttgtt tgtatcttag ccaggtattc
17901 aacaatgaaa tattcatggt gcttgtacat aaccactctc tatcagaaat
17951 acttatacat ttaaaataac atatggaata attttgtata ctagtatatc
18001 accagtaaga acattacaca gaacaaacgt gatcatttcc taaaatctgt
18051 atcgatgaat gttagccttt gttcttggca gaattttatg taatctttgt
18101 agccttatct ctacaaagag attatttgcc ttgtacaggt ttttggtata
18151 gccatttatc tttaatatat gttattatta ctggacaaat taattgttta
18201 aatttttttc ctccccttc tagcatacat ttggggtagt gcaagaaggc
18251 ttactggaaa caggtctaat tagtgtttgg ttgaaagata atagaataaa
18301 gattctatta gatataaatt ctattataga acttccaact taatattcag
18351 ctagcatcta gagaattgtt atggggtatg aatatggctc atggcctttg
18401 gttgtggaaa ataaagaaat taaaaccttt tatgatactg ttaagtttaa
18451 tgcacacatt taataaatta aatcaattta atatctttga ttactttcat
18501 tccctttgat tttcacaact atatacactt gctgtgggat ggtatcataa
18551 tgatacttta gttgttccct gatccagatt ttgtcattgt tcagcttttt
18601 taaacagtgg tattaccact attttttttt cctgtcatta aaaaaaaatt
18651 tagaggttga aaaggcaagg cttatccaat tactgcttat tggaagtact
18701 gtttcttcct gtcattaaat atttctttat ttttaacttg gctacaattt
18751 tcagactgtt agcattgaat aagcattcat tattcattct ctaatttcca
18801 aaaattttag aaacatccaa tcaaaaataa tgggatgcat tcaacttata
18851 gataacatat taggagaaat atgtatgata ttcaacttca ttgaacagtt
18901 caagtgggta atgtattgga aattttatat tatcatactg cttttgtaaa
18951 tctctaaaaa aacgtcacca agtcaactaa aaatctgcct gggaattgag
19001 aattctcttt tttccagata aagacaagga agattaaaat agaaacttaa
19051 tctcatagct caggtctcta tgccatactt ggcaaatttt atcaatatga
19101 ctttagttag aaataatttg taatgaaaat tgtgatgttc tgagcatctt
19151 ttaaaatgta cattaacaaa acagtattca gaaacaaagc taaaccggaa
19201 gcctgagaag aaacagttat ggtcggacat gaaatttagt aacagacttt
19251 tggtaaatca tgtcaaattg ggaaatttac caaatatcct atttttctta
19301 atctgatgaa aaacagattt attttaagtg acatagagtt cctggcatca
19351 aacttttggg gtaacttatc actcctaaat aatgttcata actgtgtttt
19401 tatactagtt tgtaaaacac tttaataagg tatcataagg tagtataagg
19451 tttatctaat agttatttcc attttaggtt tgtatcccta tacagaggac
19501 catgtcatac atacaaagta caaagactta atgagtcaac atcctataaa
19551 ttctgtattc aagcttgtaa tgaagctggg gaaggtcccc tctcccaaga
19601 atatattttc actactccaa aatctgtccc agctgccttg aaaggtaagt
19651 tatacatcct gaacttattt tctttataat aaattacttt ttaatgtatt
19701 ttcataaatg ctttgtttac tgatattaaa atttagcatc cagtatatgt
19751 ccaccagtta tacaaaatcg tataggcaag cccaactcta ctgagagttc
19801 cactcaataa taaaagctgt tttatctggc acgctcatat tcagacaagt
19851 actggctttt gtcactgatg tttttaataa tgtagcataa aaatactaaa
19901 ttgaatagga aggctggttt tctaatgagg tcatttgctt aaagaaaaaa
19951 atcacaaact ctggttgttt aaacgttttg agttattgat attacattca
20001 tttggatttc agaaggaaag cttggtcatc tgttaagcaa aacaaattct
20051 tcattaatgt gggtttttca attagtttta cacacacatg tacacatatt
20101 tacacacatt tgtatataca tttatctttt aattttagag gggttcttat
20151 tttaaagtga ctctggcaag ggctacactc tatttttagc tgaaaagtct
```

FIG. 5 CONT'D

20201 ataaagttaa ttgctctgaa gactaatcac agagacttct agaaccatat
20251 cctagatcat gtacttaaac ctatcatttg ttaaacagca gaactcttct
20301 tgactagtct ttctaataat attgagtttc actgagtcat ttttctgttt
20351 gctcatcaag tttagtgtct cttagcttta agaagagtgc tgactataag
20401 cagggcacag tggctcacac ctataagccc agtgctttgg gagactgaag
20451 tgggaggctc acttaaggcc aggagtattg agaccaacgt gggcaacata
20501 ctgagacctg cctctctaca aaagaaattt tgaatcagct gggcatggca
20551 gcatatgcct gtgtgtgtag ctgcacagga ggctgaggct gcattgagct
20601 atgatcgcac cactgttgtc caggctgggt gacagagtga gatcccatat
20651 cttagaatac aagagtgctg attttaacct ctttggatgc aaatttcaaa
20701 aattcactga tacttatttc aagtttataa gtggatttta aatatttgtt
20751 gatttttatt aagacaagtg tctgcatgat gtaccaaatt aaaaatcaag
20801 tggaacagat attatttata tttgtttcct acagccccca aaatagagaa
20851 agtaaatgat cacatttgtg aaattacatg ggagtgttta cagccaatga
20901 aaggtgatcc agttatttac agtcttcaag ttatgttggg aaaagattca
20951 gaattcaaac aggtatgtac caagatatta atgtgtggat gcatattttt
21001 acccttttt aatttttatg tattttcagt gtaagatttg gccatcttta
21051 ccttttaatt cataaatatt tattcagtat atattatgtt ccagagatct
21101 caagattcca aatcttttca gtatgaacta cacttgaaca gattattcat
21151 ttatctgata agtattcatt gaattctgtg ccaggcactc aggatatagc
21201 actgaacaaa aagtcccttg cctccatgga gcttacttac attctggtgg
21251 aaaagaagac actataagca agtaaacatg acaatatatt gtcagatata
21301 agtgtaatgg agaaaaaaca aaattggata aaagaaatag ggagtggagg
21351 gggagggcac tgagtgttat ttcatttggg gcactcagct gacatttcag
21401 catggcccag aggagatgac tatggagaga agagtgttcc aagaagatac
21451 gctgaggcag gaacatgcct attaaatctg atgaacataa aggagccaat
21501 atgactggat ggagagagca aagggaagag ttgataaggt cggatagtta
21551 atcctaaggg gcctataggt ggtatggagt gacgtaaggc ataataggcc
21601 atactgtggc ttttactcca cgtgaaatga gaagacagtg gaggattttg
21651 accagggtat tcacgtgatc agacacaacg ttgttttgac tatagtgttg
21701 aaactacagt aggacaaggg cagaactaga aagactaata aggaggcttt
21751 tacaataata gtattaataa tagtcataat gcagtgctgt aaatatgaca
21801 ttaggcatga agttataatg gaaacctaga ggaattgtca ccttcctagc
21851 caagaggttt caaagatagc tttctgataa agcaagaata gcagtgagat
21901 agagtggagt gttgccaatg tttgttacaa cttttaaaaa gaataagctt
21951 ttataccact ccaaagacta attaaatacc tatacatttc acctgatttt
22001 ccctttttcc tgtaacctta attttgaggg cttttaagct gggttgtttt
22051 cattgtgtct tatattttcc tcttccacta aaaaaaagat ccttcatttg
22101 ttttattcca gtattgtgct attgtaacca ctctatgtaa tatcttaact
22151 gaaattacaa aagatccaaa gagtcagatt aaatctggca tgcaattgtt
22201 tttctttatt aagccatctg caaattgaca ggataattag atttgaaatg
22251 taatttacag ataagtaggt ttccttctaa ggaggaagca aaattaatat
22301 taaagaaaat ataattgtat tacacgttta aaggaaatag ggattccaca
22351 tttgagtagt atatgaataa ccttaaggct tgtttgaatg acttttcttg
22401 ggtgtataaa ccttctgaaa ttagcttgag caggttaatc tgtttttcttc
22451 agtcctgtat ttacagttac ctgtgtctct tcctgcttag aggtcttccc
22501 acatctgaaa tacaaaattg aaaacttgat cccatcatct tccctcccag
22551 tatctcctct ccaacatctt tacttcatca gtgtcataga caccaatatc
22601 atcttggtct ccaagcttta aattcttaga tgaatttttt tttcctatca
22651 actcttaatc agaatttgtt tctaaatcca taaaactaca tcagggcctc
22701 atcacttttt acatgtacat caagagtccc tgtcctactc agctcccttc
22751 agtccttcac acagcctcac gattaggatt ccataaacac tgttttaatg
22801 tcacacacct acagtggtcc cttttgaatt aacctaaatt tccaactagt
22851 gtaattaatg tattcttcct ctttgtacca gatctcttat caccctcatg
22901 ccatttgttg aggtttttct ttcttaacct aatactgcca ggctcatgga
22951 atggtatatg aagacacatg gaaagtataa agacaaaaat catctattat
23001 atccataaga caaatacata tttttaattt ttactcaatt tacttcagtg
23051 ttatgtatac aattttacac tactttatca tacaacattc tgttttaagt

FIG. 5 CONT'D

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23101 gaatcctttt acaggttgaa gcatcccaaa taaagtccaa aattcaaaat
23151 gttccaccca aaatctgaaa ctttttgagg atcgatatga cactcaaagg
23201 aaatgctcat tggagcattt ccaatttcag atttttgggt ttggaatgct
23251 caactagtaa atatgcaact attccaaaat caaaaaaatt gaaatgcttc
23301 tggttccaag catttcttat aagggatacc caacctgtac catctcccaa
23351 acatggatca tttctacatt ctattccctg aaacattatg catccttaga
23401 actaatgtat agtcaccatt ttctttcaga tttatcttaa agcttctttc
23451 agtaagttcc tttatatatt gttatcagca tccacatttt tatttattgc
23501 caataattca ctaatttaat gtccttttat taagtaccta ctatatgcta
23551 gattctggag acagaaaaat gagacagaga tcttacttta ctttgagagc
23601 aaagcaatat gtaaaaattt agatttacat cacaggtaca attgaggcag
23651 ctaaaagtac ttgaaagccc ccatgtgttg gttcttctga cttgtagccc
23701 accaactaac tggagaaact caactgacaa gtcatttaac cctatgaacc
23751 ttggttttct caattacaga atgagtggtg ggaggttgct cattattgga
23801 aatgatagct cctacagatt gagcagtgac tgcatgctga gcactgcgct
23851 aagtgcttta acaagcatta gttcatttca tcctcataat tatcatacat
23901 gttaactact agtatgtctg ttatactaag gtagttggtc taaaatcaca
23951 tctggagtgt gaagtggtag agcagacctt ggatgccagg ggtgaacagt
24001 tctagtatat agcttcttat ttatgcctag tgttccatta ttggaacact
24051 aagcttgtgg tagttattta tatctcactg atcaaggtta ttgccaaggt
24101 ctgatttttc acaaaaaaaa aatttgcaac ctctggcata aatgggttaa
24151 ttactagcac attcctctga aaatccgtgg aatttcattc tttttatttc
24201 ccttgtgagg catggcagag gaggtcctat tttctgattc taagtgatct
24251 cccctctctg gtttatacag tgatttgcca taggcaccta tagaaagctc
24301 cccttattca ttttccattt cattgtacag atatgtttga aattatatgg
24351 aaatttatca gttatacaaa gacataatgg gggaagcaaa agtagacact
24401 atcccttctt tgatggaatg attgcattga aaaatgactt cttacatttg
24451 agaaaagcaa gaaaatgctt gaggaccgat tttgcttgtt ctctagctgc
24501 cctggggcac atctgcactc cttaattcat ctgtgaaccg tataagggta
24551 gatcctcgct tttgaaattt ctcttgcccc tatgcaacaa acagataagt
24601 actttaatgg acaggtattt ttaacatgtc atttaaaaga taaaatcaat
24651 ggcattcact ggctttcaca tgaaaaacaa ttctaacact agccagtttt
24701 aacacatttt ctgtccagcc ttcacacgta attcttcctt ctaatatttt
24751 attaacagat ttacaagggt cccgactctt ccttccggta ttccagcctt
24801 cagctgaact gtgaatatcg cttccgtgta tgtgccattc gccagtgcca
24851 agactctctg ggacaccagg acctcgtagg tccctacagc accacagtgc
24901 tcttcatctc tcagaggact gaaccaccag ccagcaccaa cagagacact
24951 gtggaaagca caaggacccg acgggcactg agtgacgagc agtgtgctgc
25001 cgtcatcctt gtgctgtttg ctttcttttc cattttgatt gcctttatca
25051 ttcagtactt tgtaatcaag tgaaaatata actttatttt ttaactctat
25101 tacattttat tttgtcatgt actaaaatta tttctgtatt gcttttataa
25151 aaaacagtgg catttagcac tggcattgag actatagcac atcatttttg
25201 ccattttcag tgcttatatt gttaggtaga ggctggcact ttattagaat
25251 gcaagccaca aaaatatcaa ttttgttttt tttgttaggg tgggtcttct
25301 ttttttcttt ccctctctct ttttttaaca aatgccttct tatagaaaaa
25351 ctttctaaga ggcaacaatt tagaatggat attttgacga atcggcatga
25401 gtgtaacagt gataacctga tctgtttgtt ttaaagatta ttaccaagtg
25451 aaaaattcag aatgaataga atttacacta acatgctata taaaatgtta
25501 aagtctgatg ctgtgaaagc aatctagtgc tatatttcta cctcctcatt
25551 tgtcttaatt atttggtaag tgggattatg atgagtaact ggaggggctt
25601 agaaacaaaa actggatgaa agagtatgca tgaagaaaag cttctttgat
25651 aaatgtggag ttcttcatta taaatatata ttcatgaatt cacagataag
25701 tacttaaaga acagacagtt tacttggcct aaaaatattt tgatgtttac
25751 tcaaaaagta cctcttcagg tcttgagaac atggaaaaga attgagtgct
25801 tttaaatact ttttagaaag taatcataaa agtaaattga atttcaaacc
25851 tatttggctt ctgttttgtg aacctttgaa ctatatgtat gtgtataagg
25901 gtatacacat acatatatgg catataacaa gtgtacacat atacacataa
25951 caagtgtaga agtatatatt acatacatac actcactctg tctggtatag
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FIG. 5 CONT'D

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26001 gctaattttg aagaactccc ataagtttct gctgcttctc ccataactgc
26051 tgccaccacc atcagaattc ataatcaaac ctaacctttt tgtttggggc
26101 accaaatctg aagacaaaat taatttgcac cagtaaactt caagctgctt
26151 tctttcttga aaactaaacg tttaacgtat aatgtctgtt tggatactgt
26201 tccaaattgt tgattgcatg tggttaatgt tgcattagag cactttgcaa
26251 ttgcataatt cattaatgtt ttgtgagctt gcatttgtga gttattggat
26301 gatcagactg aattttgtca agtatcacat tgtacatctt gcctagatgt
26351 cgatgactgc aagtaataat acagtttata atgaaactat ctacaattct
26401 tgttttagca catctgttat ccgtaaaaca cctgtaacta gctttttaa
26451 tttattattt gaattttagg atagcgaatc actaattttt agttgctgag
26501 gttggcattt tagtgattat taagcacttc tgtcagtctt tgaaaaaaga
26551 acgtattttt tgtgctttga agatctctga agaatttctt ttataataga
26601 atgggcatgt attgtaacag ttttatgtca aatgatctgt gctgtagaaa
26651 aacattaacc cttgttcaaa aaagaaatgg ataaacttgg cctttctaag
26701 tggtaagaat gacctgtcac tataatatac tgtatgttta cattttattt
26751 aaatttaatc tcttatgtat agggtgataa ccttccccag aaacaacagt
26801 gattgcgatt gttttctaga aacttcttta aagtgccaca tttggcagta
26851 caaatgagtc tgagtgtaat agcccagaga tttatatata gttgaatgtc
26901 taaaatggta aaatgtgcca ctgtgtcaag ttacagtggc ttatgttttt
26951 catagtaatt caaatgaact tcctattttt gatagtaaat gtcatttaat
27001 agtatacttg ccatttgagc ctcactgcaa aattagtgca gaggagaaaa
27051 caatttttaa tgtaatcttg attttacctc atatactgta cattccaaaa
27101 actctaaact ttttaaagat tatagataca ctaccaaaca tatcacctta
27151 aaattgtata aggctgaatg aacttcatac aaatgaaaaa aatctcataa
27201 aaatacataa actatgtagc aaaagtatct gtaaaatcca tggaaaataa
27251 aagttgtatc attctttttg agatacgttt attgtattca tatatattca
27301 ttatttgcta cctgtttaag aaagtgaaat gttatggtct ccccctcttcc
27351 aatgagctta aaacattttt cccaacagta tataaatctt caacatgaga
27401 ggatgtatat ttattatata aagcccagta aagaataaaa ttagaagttt
27451 tatcctagtg acttgatttt gtgcaactca tgaaatatct tacttccttt
27501 ccacatataa agaatacagt gagtctaagg taaacttccc agtgggaaga
27551 aaatccctaa cctctccttg cctttcccac atccctattt tctagtacct
27601 tctttcgccc accaccagag gcccagaacc ttcctggtag tggcactgct
27651 gggtctgcct tccaccagaa aatccaacat tctctcactc atcccccatt
27701 aaaatttcca tcccaagaac ttcctcctgg ggatggacac tcagtgcctt
27751 tttttttttc ttttttaat gggtaagcta gtaaatttta tgttataaat
27801 attttaccac ataaaaaaa tcattgaaaa attcactgaa gaagccaata
27851 tggaaagagg agaactcaat gtttaaaata aagccaactt tttttttta
27901 ttcaagaggt aagtacatag cttcaagctc aaggtctagg ttgaggacaa
27951 tcatgagtcc tattaaagga caaccagttt aaagaacact gtcaggcaag
28001 ctaccacgta gctctccttc actccaggct tagctgttcc agacttccca
28051 gtactgatga aggatcatgt ttttgttcag ctttgcccag tgctgtcatt
28101 cataatagat aaatgaaaag tcccagaaac ctgttgtgtt tgggaaggtt
28151 ttcttttgtt ccaggcttca gtggttaata tgcttgacaa atttcagagt
28201 ctctatctct gtagaccaat gccaaagaat tgctttctgg attcactgtt
28251 agcagctctt cgtcttcatc tttggcaatg taagaaaacc accatattct
28301 ggccccccagc cttcacagcc acagtggaga attaagtcta gggcaaaatc
28351 agccttgcca tggtcacgaa ttaaaagtgt ggtgaccagt cttccaacgc
28401 ctcagttccc tttggcatgt gggaacacct gattcattct ttgtttcatt
28451 ttcctctgac tcggtctgtc tgctcatggc tctgttggcc gttgatgctg
28501 atggctgcct gattattctc tggctcagga gggctatggc cagtcccttc
28551 ctcagttcta tcagcagcag aggctgctgc ttcctctttt ttgtcatcca
28601 tctcatcttc cgaaggggcc aagaagtgaa gcttcaggcc tgtgaagttg
28651 gagagcagca agaatagtgc ctcagagcaa aataacttca tgcactcctt
28701 caatatatca ggaagcttac tctcctcagc tttctcatag aatcatcttt
28751 tgttggccag gcacggtggc tcatgcctat aatcttagta ctttggaagg
28801 ccgaggtaga caggtcacct gaggtcagta gttcaagacc agcctggtca
28851 atatggtgaa acccctgtct ctactaaaat agaaaaatta gctaggcatg
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FIG. 5 CONT'D

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28901 atgccaggtg cctgtaatcc tagctactcg ggaggctgag acgggagaat
28951 tgcttgaacc caggaaacgg tggttgcagt gagccgagat ttaaaattta
29001 aaaaatgata ataaaaaaaa aaaaaccttt tcttaggggg acctcagctg
29051 ctctcttcca catctccatt ctccaaggcc tcacagacct ttgcaaattt
29101 ctcaggctta agaaatttct taggagaatt tcagaacttt cttcaaactc
29151 ttcttgagtt tgaatttggt aatccatgtc cagataagta aggttgatcc
29201 aatcaaacaa tttcatgttc ttgtggggtg tgagggctcc aagatatgag
29251 ggggttcaaa gtagttggga ggcctagtca gtgaaggacc atgaaaccag
29301 ccacttatag acaaatgtga cttcagacag gactttggac acctggtgaa
29351 aggacactgc agatacttca aagaaaacca gtttgttcca taaaggggta
29401 agagacgaca atctgcttcg gttgaaagtg ttcatcaatg ttgtacaggt
29451 ccaggatacc ctccaggctc ctgtcccagg aaagaaccag gtacaggata
29501 aaggcgatcc agcgcccttc tagctcatca tcatggcaca gcagggcatc
29551 agtgaattca tatttagcac aggacacatc gatggttggt tccagtaaat
29601 tttagaaatg ccagaaagcc aggaccagaa atcttcaaac agaattttcc
29651 ttaaagcaga gatgtgaggc cctcttcttt aaatcatcag actgctggaa
29701 cttacataaa tcattatact tgtcatggaa atctaagttc ataagttcct
29751 tctgaagccc ttccaagaag tcgtctttgg atgaagtttg ggatcatgca
29801 gtgaagaaag gggtccatgt ccctgacaat ggcttcgtag ctccaggcct
29851 caaccacctg ctttttcaag gtttcctcca tgacggcatc tgaaaattcc
29901 gccatcacct ccttctttcc ctttttttccc acccgggtcc ggccgggctc
29951 cactggccgt ttcatctcct cacaaggtac agagccacgc catatgactc
30001 agtgctttta aaatccatgt agatctctta attgccacaa ctccaaggac
30051 cgtgatagag tttaaaatgt tgggctgggg aaggagagtc cggaaatagg
30101 aacatcacag aagcagctaa gcatgagtcc aggtttgagt ggggtatgat
30151 actgatttga cagtatgatt gcacgtcacc tctttttttt ctgtagattg
30201 gaaataggag tcttttgcat cctgtttgag cattccatgg gttggtttcc
30251 aacacaaatc ccttgcttct caccattata agattatttc tgcaggaaga
30301 ttccattgac gtggtggctc aaggaggcaa acaggcttca aaagaaaata
30351 ggccgggtgt ggtggctcac gcctgtaatc tcagcacttt ggaaggccaa
30401 ggtgggcaga tcacaaggtc aggagtttga gaccagtctg gctaacatgg
30451 tgaaaccccg tctctaccga aaatacaaaa attagctggg cgtggtggtg
30501 cacacctgta attccagcta ctcaggaggc tgaagcagga gaatcgtttg
30551 aacctgggag gcggagcttg cagtgagcca agatcgtgcc actgcactcc
30601 agcctgggtg acagagcgag actccatctc aaaaaaaaaa aaaaaagaaa
30651 atattccccc aaacttaagc agtgattctg taacctaact cccatcatca
30701 aaagagatga tgcctcatgt ttttagagag tttttaagtg ttctattttc
30751 atatacattt tgtaagtata tgccgttgag aatgtgtatc ccttttgttt
30801 atttatcatt ttctctctga tgctcctaag gcgggagaaa aaacttggag
30851 gaaaaaaaga aaatcaacca aagaaccaag atttcaacaa ggtggtcatc
30901 aaattctgtg tccagagtgg tgccttcaaa tgtttagatg ctgtaatggc
30951 tatttttgt ctcataaacg gggctattgt gccatttcca cttactacgg
31001 gaaatttgcc aagagaaaag ggtttcaaaa ctgaacagat tttgaagcca
31051 catggcccat tcaaatcatt atggctagga tctgtcaacc atttaatgtg
31101 ttgtaagcat tatgttcagt tctttacctt gggcatctca tacagtcctc
31151 ttaattgctc tagtaagcat tatctgcagc acagagaagt cgagctctct
31201 gccacaggtc tcatggctaa taaatgatga agctggggtt tgatccaggt
31251 ctggggctcc cacacttgac cactatcctc tgctgtctgg cccaaaattt
31301 acaaactcta ggaaatcaaa attaatatga attgacttta atagtgcgtt
31351 tatgatagca tttattgatt gagtaccacc tgtttgctag gcaatgtgct
31401 aagcacttcc tcatatgcaa aacaagccac agccctctaa ggactgaaca
31451 gaaagaaatc agatgagaag aatctggtat aagcataaca gactaaatga
31501 gaaaccctaa tttctttcct cttgaatttc atcccctgat acttttacta
31551 ccattttgag cccacactca atccttaagg ctagcccatc ttaaatatta
31601 atccaaggat gaaaacgcca tttttgccac ttaccgcaac taagacaagc
31651 tgacattttc aaaaatgaat atagctacca tgtggaccaa cctcaaaaac
31701 acactacaat gaaggaagcc agacacagaa agtcacatat tatacaattc
31751 catttgtatt aaatatccag aatgagtaaa tccatagaga cagattagtg
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FIG. 5 CONT'D

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31801 gatgccaggg ctggagggag gaggaaatgg ggagtaactg cccagtgggt
31851 gctgggttga tggaaatgct taggagccag acagaggtag tggttgcaca
31901 actctgaggg cactaaatgc cagtaagttt gtcacttcag aatggttaat
31951 tttatgtgaa tttcacctga attgcttaag aagggaatat aaaacctata
32001 aactgataca caggtaacat aagactagag aatcctgggc atcaagtcca
32051 taaaactgac gtagtcagta agttcatttt gctaaggaca gaggccaact
32101 tgtctctttt ttctcaaact cccacacctc ccaggatgct accactcctt
32151 tcagcctgtg acatgtgcct ggcttacaac tgaatatttt atggatgtcc
32201 ttgagtgtga ttaaacaatt tcgcctgccc acacccaagt tatcagctct
32251 atctcattct taatccttct aggatgacac agaggtctta aagaagaaat
32301 taccttttca gtttcacagt taatcaatgg cagcagctgc acagtaagaa
32351 tgctcgtatg cagtagtgta aggcctataa cctcttccca cccacgcttc
32401 caagggcttg ctccctctcc accatccccc ttggtaattg ttgccacgct
32451 gagcctgtct gtctctcagg agaaactggg actaacagaa aaactgctaa
32501 agcaacagcc acagagtaac aggaatctgc actccacaaa agtcttgcct
32551 gaatttgccc tgccgtgtcc ctgctgtgta aaaagaaaac ctaggaaaga
32601 ctgagcccct ggtcaatgtg gcggtcaggt cctggcggtg agattgggaa
32651 atagctggcc ttgaacttct ctgccagggg ctcccttcca gggccagctt
32701 tgctatctct gcattttact aaagatacca tttcctggtg cctggggtct
32751 agaggaccca gtgggtcatg tgaatgagga aggggctgag tgtgaagcca
32801 cagatgccct gtgtgtggtg acagctgtga ggtgcctgca gagtggcacc
32851 agcctacagg ctgcaggtgg cagtctttgg ggaacatgag ctcagagctg
32901 ccacagcttc cggttttgca agacaatgct tccttctcaa actcccacac
32951 ctccccggat gttaccactc ctctcagcct gcggcacgtg cctggtttac
33001 aacaatattt tatggatgtc cttgggagct attaaagaat ttggtctgcc
33051 taggcccaag atatcatgct gacaatctgg aactttacct gaaatttccc
33101 aattgtaaaa ggttggttca aaacattatg aaatggccag gctccgtggc
33151 tcacatctgt attcccagca ctttgggagg cagaggaggg tggatcactt
33201 gagcccagga gttcaagagc agcctgggca atctagggag acccccatct
33251 ctacaaactt catgccttgc tcttatgtgg ggaaaagagt gtaaagcctg
33301 tggagtgttt acaagtttac ataagtaaac tattgtacaa gttacggatg
33351 tatttttttt ttttttttt tttgagacgg agtctcgctc tgtcgcccag
33401 gctggagtgc agtggcggga tctcggctca ctgcaagctc cgcctcccgg
33451 gttcacgcca ttctcctgcc tcagcctccc aagtagctgg gactacaggc
33501 gcccgccact acgcctggct aatttttttgt atttttagta gagacggggt
33551 ttcaccgttt tagccgggat ggtctcgatc tcctgacctc gtgatccgcc
33601 cgcctcggcc tcccaaagtg ctgggattac aggcgtgagc caccgcgccc
33651 ggccgttacg gaggtatttt aatgctcctc acaactttcc agattcttca
33701 atttgcccat aaaatctggt ttctgagaaa gacactggaa gacactttcc
33751 tagcagaatc cagatcataa cctagcattc tctgcagctg gtggtgctat
33801 ggtctgtata gcaagaggcc acccagcaca gtagttatgc ccatggactc
33851 tggaagtgga cagcaccacc cttactggct gtcccagtga cctggggtca
33901 cttctctgtg ctttgctctt ctcatctcta acatagagat actaaaagaa
33951 cctgctgcct tggactgctg tggaggatta aatgcattca gatatgaaag
34001 tacttggaac agtgccttgc acacagcaag cattagcttt atattcatcc
34051 agaccatccc tttatattca tcaaaagcca acaagtgagg cctccagccc
34101 ggggccaaga gcctattgat gacaccaacc tcttgcctct ggggacgcag
34151 gccgtagctg ggccaaacct agacccaccc ttgccccaca tgagttacag
34201 gtggagaggt actcaaagag taaagaagag agacgcccat gctcccggtc
34251 tactgagaac ttcctcttcc tctcgctaga ttaactatga agtcaggaag
34301 ctggtgaatg tctacagaaa cacaaagtag aaaacagatc tggtcccatt
34351 ccttcctaaa acattgaatg ccaacccatc ataagagctc agatatgtcc
34401 taagggccaa gttatgtttg aacctcagca tagcaatgtt atcaaaaaag
34451 cccgctgggt ctccacctct ccatatcagt attctgtctt aagctgaagt
34501 atcagtgact acttactgag cacccactac aatcagagca ctgttttaac
34551 ggctaggaat tgtaaagaaa acaatggtac ctggttctac agaagctcat
34601 tcattctcca agttaacaaa tatttattaa attctcactt tgtgccaggc
34651 actaaggaaa cagcagtgaa cacagcagat taaagccctg ccttctggtg
```

FIG. 5 CONT'D

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34701 cacataatgt tgggagatag agatagataa taaacaaata gctaggtaaa
34751 ttaaatagta tgtcagttga taataagcaa tatggagaaa ataccataga
34801 gagggagtgc ctgaatggag gtgagtaatt cacaacagcc aggatgctga
34851 ctgcagactc agtgagcctg cctcagcgcc accatggtgg gtggggaagg
34901 gaataaggga ggcttcagca gaggctgggg tagtccatca ggccaaggag
34951 caaatgggaa aaaccaaaga gactcaggga ttcgcagccc atgagagcca
35001 tggggaagat gtcaagtgct cctgatagca tcacctgagt ccaagaaaga
35051 agctacctct tcactagcca caggcccatg cgcccaaggc tagcagagcc
35101 actggtgacc aggcaggaag ggaacatgga actggagtct agcaaatgcc
35151 agcccctgac accccaggag ccggcgtgaa gcttcataag gacctctccc
35201 tctagcttta agccactgac ccctctcccc gtacacctgg gccaccttga
35251 ggaaaggcat gatgtctgag agaagggaac actgcccaga ggggctgctt
35301 aactgatccg cctggatcat gccttaccta ggctagagca ttcatttctc
35351 ttgttgagag cacaggggaa aatcaaatca actataaatg aagaaattac
35401 attttctctg cctaggggga ggagacaggg aggaagaaaa agtggaaact
35451 gtgagtacag aaactatttt gaggagtttt gcatgaaaat gatccaggag
35501 agaaaaactg atgacaagag agagagaaag agaattgacg cagtgatgtc
35551 tggaggagga gaaaggagca cttaaggggc agagctgact tcagctgcaa
35601 gtaccaccaa ctgtcccagg ggagcacgag cagaggtggg ggtgtggtag
35651 ttatcttcag agaaacaggg tgcaaggaaa cctcccaaag gaaggggtgg
35701 tgggtgttgg gtctaaggag agaggagggg gtataaacca gcagcctggt
35751 ggtgggagag tgaatgaggt caggtgagag ttgggaaggc cgggggaacg
35801 aagcaccccg ctagaggttg tgctttcaag tgaaacaacg ccatgtgaga
35851 gcaggcaagg agtaggcagg gaattcggct tcaccagggt tgtggtgctc
35901 ttggtggatg gacgaggctg acaatggaga aaagagcaag ggagtcgagg
35951 gcgtctgtgt gggagtgatg gcgactgccc gtggaattta cgttgggtaa
36001 aggaagaaag tgaagacctg gggcaggcaa gggaccggga aaaggaagga
36051 ggagccagcg atggaggtcg cagtgggttg aaggattacc ggaactgagg
36101 tgctagggga agagagctaa aaagagagcg ggcggaggtc agaaagaggg
36151 ctgactgaag tggaggtgga ggaaggctgg caggcaaccg tgaggtgtaa
36201 gttccgtcga caggcgcggc tgagatcggg tggagagcaa ggtcataggt
36251 ggaaaggagg tcaacaaact agaggccaag gcattccaag actcggcatg
36301 ggtgtgaacg gccgcagatg cagtgcttca aagagagcgc aggcacctgt
36351 ccctcaggga ctacgggtga ccacggagga aagcgctagg gagggcggtt
36401 ttaggaccgc tggaaacagc agcgatgagg gaggcgacag gtgtccctcc
36451 tccaagctca cagtctgcat gtgagagaga actgcaggag aagcttgccc
36501 taggcaaagc caggtgtcag gtccagaatc gagactccag agaagaggtt
36551 gaggatttaa gccactgagg gggtggagct gggcagtgag taggacgtca
36601 ggcttgcaag ctctgggatt aggccgacca gagcccatat cccagtcccg
36651 cctcttactg cctgcttgat ctcaagcaag accgctttgt tcatgggcga
36701 aaggagcgcc ccgggccatg aggattaaat ggagagcaca gggccagatc
36751 catctaaatt ctcagtaagt gttagctatt gttattaaga ccacaccgaa
36801 cagactgaac atccgtttta gccccttcc ccaattttcg ttctttccgg
36851 tgttgacaaa tcctctagtt ttttaagttt ataaaacatg ttgtacataa
36901 gaatgacata tcacatgtga aagtactcta gtgtccacgt aaatatttgt
36951 cttgttcttt ataataagta aacatgctca cggatccttg aaattatctg
37001 gtcactgccg ggcgcggtgg ctcacgcctg taatcccagc actttgggag
37051 gtcgaggcgg gtggaccacc tggggtcagg agttcgagac caggctggcc
37101 aacatggcga aaccctgact acacaaaaaa cacaaaattt agccggggct
37151 tgggcgctcc tgtgctccca gctactcagg aggctgaggt gggaggactg
37201 cttgagcctg ggaggtcgag gctgcagtga gctgtgatcg cgccacttaa
37251 actccagcct ggacgacagt gagaccctgt ctcaagaaga aaaaaagaaa
37301 gaaagaaaga aaaaaagaaa aaaaagaaat tatttggtca attatatggt
37351 cagctccctc caccactcgc gaatttacag aagaggagaa ctgggctggg
37401 cgagaccagg actagcccaa gattacacaa gttactcggt tgtagagcca
37451 ggattagaca ggagaggctc tagattctgg tctagactcc cctcctatta
37501 tttagcatta tggcttcctg aggattacca tgagccctcc tccaccgtca
37551 agcggcagct accagccacc agaccagatc ccttcgaagg tgcccggagt
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FIG. 5 CONT'D

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37601 accagactga caaaagcgcc cgtacagtgc tcagtcctgt aaccaaagct
37651 gtctagggtg cagacatcgc tcaccggacc gggtagggct cgtgcgctaa
37701 gggcgccggg tattccagtt agtggagagg gaagcgccct ggaactgcat
37751 gggcccggga gagggcgcgg gagcggagca gggccgggcc ggggcgggcc
37801 gcggccgtgg gcggagactg cgcgcagcta gctcgggagc gcctcggagc
37851 ccaccccgca gagccgcttc tcgcgccccg cagcgcagcg cagcgctccg
37901 ccgtctgacc tgccgcgccc gcagcgtgcg ggctgggaaa ggaggcgctc
37951 accgagaggg accacgcgcc aggctcccag cccgacccgg gacgcggcgg
38001 ccgcgcggag cacccatggg cagcccctgg aacggcagcg acggccccga
38051 gggggcgcgg gagccgccgt ggcccgcgct gccgccttgc gacgagcgcc
38101 gctgctcgcc ctttcccctg ggggcgctgg tgccggtgac cgctgtgtgc
38151 ctgtgcctgt tcgtcgtcgg ggtgagcggc aacgtggtga ccgtgatgct
38201 gatcgggcgc taccgggaca tgcggaccac caccaacttg tacctgggca
38251 gcatggccgt gtccgaccta ctcatcctgc tcgggctgcc gttcgacctg
38301 taccgcctct ggcgctcgcg gccctgggtg ttcgggccgc tgctctgccg
38351 cctgtccctc tacgtgggcg agggctgcac ctacgccacg ctgctgcaca
38401 tgaccgcgct cagcgtcgag cgctacctgg ccatctgccg cccgctccgc
38451 gcccgcgtct tggtcacccg gcgccgcgtc cgcgcgctca tcgctgtgct
38501 ctgggccgtg gcgctgctct ctgccggtcc cttcttgttc ctggtgggcg
38551 tcgagcagga ccccggcatc tccgtagtcc cgggcctcaa tggcaccgcg
38601 cggatcgcct cctcgcctct cgcctcgtcg ccgcctctct ggctctcgcg
38651 ggcgccaccg ccgtccccgc cgtcggggcc cgagaccgcg gaggccgcgg
38701 cgctgttcag ccgcgaatgc cggccgagcc ccgcgcagct gggcgcgctg
38751 cgtgtcatgc tgtgggtcac caccgcctac ttcttcctgc cctttctgtg
38801 cctcagcatc ctctacgggc tcatcgggcg ggagctgtgg agcagccggc
38851 ggccgctgcg aggcccggcc gcctcggggc gggagagagg ccaccggcag
38901 accgtccgcg tcctgcgtaa gtggagccgc cgtggttcca aagacgcctg
38951 cctgcagtcc gccccgccgg ggaccgcgca aacgctgggt ccccttcccc
39001 tgctcgccca gctctgggcg ccgcttccag ctccctttcc tatttcgatt
39051 ccagcctcca cccgccggta cttcccatcc cccgagaaaa ccatgtcctg
39101 tcccccagga gctctggggg accccagggc gctttgaggg tgggatcccc
39151 ggatccgatt cagtaaccag cagtgctttt ccagagcctc tgagaccaga
39201 aaggagagtt ggtaattctt aatccaacca cctgttagat gccacagatg
39251 aggagtcctc acagtgctct tgagaagacg agggagattt cattaagcta
39301 aaatttttta tttaatgtta agtgatgctg aaggctaaag taaaccttgc
39351 tcgtatcaaa aagtaaagat tgtgcagacc tgttgtagaa ttcttttcaa
39401 cagagaacag aaaacttgtc tccgaagtgg gtttgtggaa ggaagcctgc
39451 caaggcggct tgttcagaga aattgctcct tctggtttat gtccagcctt
39501 gataacacat atgggagcct actatgcagt tttaaagcaa gtatccatgc
39551 agcctgcagc ctggtcattt tttctggggt gaggatctgc ctaggtagaa
39601 gttttctcta atttattttg ctgttacttg ttattgcaga tggttccttg
39651 tcggggtggg gggtttattt gcttcccaat gcttttgtta atcccggtgc
39701 tgtgtcttat gttgcagtgg tggtggttct ggcatttata atttgctggt
39751 tgcccttcca cgttggcaga atcatttaca taaacacgga agattcgcgg
39801 atgatgtact tctctcagta ctttaacatc gtcgctctgc aacttttcta
39851 tctgagcgca tctatcaacc caatcctcta caacctcatt tcaaagaagt
39901 acagagcggc ggcctttaaa ctgctgctcg caaggaagtc caggccgaga
39951 ggcttccaca gaagcaggga cactgcgggg gaagttgcag gggacactgg
40001 aggagacacg gtgggctaca ccgagacaag cgctaacgtg aagacgatgg
40051 gataaccagc acggccaagc caggctcctc ttgcagttct aagactttgg
40101 ggaaaacagg tgtgtagaga aataaagact gcaaatgagg aacagatcct
40151 gttaagaaga atggaaagag ggttgcagtt gtgccagttg gttaagaaat
40201 agaccgcatg atttatttaa ccaaggtatg aaatgtaact gcgccaacct
40251 ttctagtttc cttcccacgt acctcctaag gaaggtcgat tttaccatca
40301 tgaaatccca catctcaaag tgtgctcttg tgtgatggtt tcatgaagtc
40351 ctcattctcc tactcttcgg aaagatgatt gttcatttta cagttaaatg
40401 atacacaaag atgctgcccc aaaactgcca cctctgagat catgagtgta
40451 ttttatgttt tggatgtaaa tgtaacagta catctacaag gaaccaggat
```

FIG. 5 CONT'D

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40501 aatgatagtt ttgatccaag aaatgattta atacctatgt atggctgcaa
40551 aaacttttag aagtaaaagg aattctgggt agactccagt gttcaggggt
40601 cccacctctc tccagatcac agcaaatcat aaagtttagg caaaataata
40651 gcctctttca gaagtattaa gcaattgtgt tgcaacccac ttctccttga
40701 cactgcccat gggaccttcc cagtgccact ggccatgggg tggcaaactt
40751 tgggcatcaa catttgagag tagagagctc agcaggacat ggctttctcc
40801 agtgactaca aatgacgttt gtaaagagct atttaatatg ctttatctca
40851 cctcagcttg gtggggtgag tactgttgtc aacattcctg ttttggaagt
40901 gagtcttgga ttgcccaaac aggagctggt gagctggagt ctgaatccag
40951 tgtttaagtt gctcacccaa tcccaagcca agatgctgtc cttactgaaa
41001 aacgccagcc aatggattta gtcaagagtg aaagagaact cactggacat
41051 tctgatcaac aactctgtaa ctttgttttg ttttttagag tttaaaacac
41101 aaatattttt agagggttac tgctgtcact cagctccaaa gggcttcact
41151 tatgccacct tctgtatgaa tggcaccccc aagatgtggg cagggtacag
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41251 tcaaacctaa attacaatag gatcttgatt tgtatgagga atttgtcctg
41301 agaccttcat gaatcttcac atctacaaat accagaaaaa tgacaaatgc
41351 tataacttca gagttataaa gacagataga cataaagtca cattgagact
41401 tggaggctag agaggcagct ccgttgattc actgacttga tgtctctgct
41451 tcacagccca cagtttgggt ggctttggta aatgtctaaa ttactttccg
41501 ccacaggcca ccatagtctc ttttgaatag ttaaaactac aaaagatgaa
41551 tacataaata acaagggtct gcccgacatg cattcaaagt tctgttgctt
41601 tctcattttc ttagccaaag ccctagctca gtccccagcc cggtccacaa
41651 ttggcacagg aatgaagtct ctcgtttgct ttttctccta gctagtggaa
41701 gaagcagatt gcagtcactt caggaagcat tccctaaact gtgttctgca
41751 gatttccagg gattattgga aaaaatggtt ctggggttaa atatggcagg
41801 aaaataccac attgtgttcc ccctaccaca ccctaaacat ttcacacaca
41851 taacacaata tagcatgtca gaggctctga gaagttgtct caaccaacat
41901 ttccttgact tattttatca cagaaccaac tctccatctt ccctcccaag
41951 aacacttagt aaaatctcat ggagtgagaa atactttggg gagcactgat
42001 gtaggggttc tgacagtgga ggtgtcagcc tggagcctcc ataactctct
42051 gcttggtagc actgagtaca gcagctgcca cagtccttct gctcatggga
42101 gctcctctct ggagcagtca ggagtggcca cctccctagg gaaagtcaca
42151 gcaaagaacc ttattaagat gtatataata ttttatttta ttttttaga
42201 gacaggatct caccctgttg cccaggctgg agtgcagtgg cacaatcata
42251 gctcactgta accttaaatt cctggattca aaccatcctc ccacctcagc
42301 ctccccagta ggcaggacta caggcacaca ccaccatgcc tggctaattt
42351 tttagttttt tgtaaagttg gggtcttgct gtgttgccca ggctggtctc
42401 aaactcctgg cctcaagcaa tcctcctgcc tcagcttccc aaagtgctgg
42451 gattacaggc atgagccacc acacctggct catgtataat attctaaatg
42501 tagaagcaaa gacctctctt ttgagctttc tcgttcagaa tctagaaaac
42551 aaggatttac atgacacttt cctgggactt aagcatgttt ccaggtgtgg
42601 gcatagggag gattatcctt cccttcccag atggtacctg agatggaggg
42651 cctgaaggcc atcccttcct tcaggattct tgtgtggtct cagcctacta
42701 gtggactgtg aaatcagtaa gtgtgtcata tttttcttta atggaacagt
42751 gtggacaaga atagagtcca ttgtgtatca catgtactaa ggtaactatt
42801 gtgctgtgaa acttttgttt caattatgtt ttggttggtg tctttcccgg
42851 ttcacaaaat aaaatacatt ctaactgtgg gtcatggtgg aaaatgttta
42901 aaaagttgtt ctaagatcta aagtttttct ctgttcttac actgacaact
42951 ggctatgaaa agggaggcca agtcagcgaa tcactggagc aggagaatca
43001 ctgagctctg gtttccagtc cagggctccc tacccaccca acccagggtg
43051 gtaatcatgg aggctatggg ccagccactc cctccacccc aacagagacc
43101 cgtgctggca ttccagccac ttctctttga gccccctctc ccttctgcag
43151 gcagaaccac ttttgttagg tgagctgcca accttggaag agagtttgta
43201 tttcattcat tcccatggca aatatttacc aagcaactgc taagtgccag
43251 acgtgtataa tacaatacac tagaaaaact agtccatgtg atgatgtaaa
43301 aatcaatcaa ctttctaatg gcattctctg tttgaaatgt gtattgtgtc
43351 atctagacta acatggattc accatttaga tcagatggaa gtgcagaaca
```

FIG. 5 CONT'D

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43401 tcaggtttgc actatctgtc tggatgttcc tcctcttttg tatgtgagac
43451 atttccactt ctgaaggaaa tgttcaaaga gctattgcac aacatccact
43501 gggatccaag agttccctgt gccaggttct caaagagaca caggcaacgt
43551 gctaatggtg ttgaaaattc aaacacgccc tctcctgacc ctttctactc
43601 atgtcataat gacatttgcc agtatatgga agcaaatttt agtggttgca
43651 caggtctagt gtgttttgtt ttgttttaga gacagggtct tcctctgtca
43701 cccaggctgg agtgcagtgg cttgatcaca gctcacttta gcctcaactt
43751 gctgggctca agcaatcctc ccacctcagc ctctcaagta gctaggacta
43801 taggcacaca tcatcttcac acctagctaa ttaaaaaaaa atttttttta
43851 agagataggg ttttattatg ttgcccaggc tggtctccaa gtcctggcct
43901 caatcgatcc tcacacctca gcctcccagg gtactgggat tataggcata
43951 agccaccacg cccagcttag gtttagtgtt ttaaaagtgg ctttacttaa
44001 acatagatgg gatgcaatat ttaattatga gcccaatttc taaggattcc
44051 aaaccctatt acagagcccc tagtcttcta cgaggagcct ttgaattcag
44101 cgtttcctct tctgagcgca cagggcacag gctccaaagg aatgctctgt
44151 ggaagtcact caacctgtcc ctggtgtaca ctatgtctct ggtgtacact
44201 acagaggagg ggactcgacc ggccccctta ggaaaacact acacactttt
44251 taaatagtgc acacctgtgt actaagggtt aaaaggcttt ttattcccca
44301 cactaattct ctgggtcagt ggttctcaaa cttcagcctg catcagaatc
44351 acctggagga cgtggtaaga cacagattgc tgggcttccc ccagagggtt
44401 ttggagttag taggtctggg gtggggccca agaatctgta tttctattga
44451 attcccaggt attgctggtt tatgtcccag gtgaaacaca gcgggatggc
44501 ataagatttc atcacactac tcagggcacg ctcgactgaa aacctaacaa
44551 ctgtttaatt ctgaaatttt ccatttaata gttttggacc atggttgacc
44601 acaggtaact gaaacctcag aaagcgaaac tatggataag ggggactact
44651 ttgtggttcc aaagaagcca tccagctgga aaagttctgt tgttgcattt
44701 tccacaggct cctgcaaata ggtcctgatg gtcaaatact ctttttttt
44751 ttttttttt ttttgatata gggtctcact ctgtcaccca tgctggagtg
44801 cagtggcaca atcacggctc actgcagcct cagcctcccg gactcagatg
44851 atcctctcac ctcagcctcc tgagtagctg ggactacagg tgcacaccac
44901 cacacccaga taatttttta attttttgt agagacaagg tttcaccatg
44951 ttgctcagac tattctcaaa ctcctaagct caagcaatct gccctccttg
45001 gcctcccaaa atgttgggat tataggcgtg agccaccatg cctcagcact
45051 taaatacttt taagaaatgt tgcaatacta tataaactct ttttggccat
45101 acagcttttt ttttcctctc atatattaac attccccaaa atactccacc
45151 ttgaaattct agagagaagt ttgggtatga agtcagggct caccataaag
45201 atttgggagg caacagcatg gaaatgatca tcttatccag tgcctcaaaa
45251 acttttgctt gcatcagaaa cactagaggg cttcttaaaa cacggatttc
45301 tgggcccact ccagaagttc tgattctgta agtctgagaa tttgcatttc
45351 tgtgtagttt gcaggtggtg ctgctgctgc aactccagga tcacactttg
45401 agaaccactg atttaagtga tagaaataga tggccccgac taggagaaag
45451 cttaccaaga tcaaagcaga ggtgcaggga tgcactctaa tgatccccac
45501 gctggctgga agtcaccaaa gcaggcagaa gagcagaaaa gaaaaagcat
45551 gtgatgcatg tgatacaacc caaaggaaga gcgtttcaca gagggtcgga
45601 ggtcaagggg tcacgcacca cagggaacac aaagagaatg aagtagggtt
45651 gccagacgaa attcagagcc tgaaactaaa tttgaatttc tgataaacaa
45701 catatatttt atgtataagt ttaaatatta ttagcatgac acactaaggg
45751 ccaggcgtgg tggcaaacac cgggagtccc agcacttttg gaggccgagg
45801 caggagggtt acttgagacc aataattcaa caccagcctg gcaatatagc
45851 aagatctcat ttccacaaaa aaatgcattt cttcattagc tgggcatggt
45901 ggcgtgcccc tgttgtccta gttacttgaa aggctgaggt gggaggatag
45951 cttgagctca ggagtttgag actgcagtga gctctgatca cgctaccgca
46001 ctttaaaaat atagcatacc tattacttac attttaaaat catttattat
46051 ttatctgaaa tccacattta aatgggcact ctatttttat ttttaaatct
46101 ggtaacccta ggatactggc aatggaaaga ccacagagtc tggcaaaagg
46151 aaggaatcta gaaagtgcct ttcaagagag tgctggggca ggagccggaa
46201 gatggtaagt tgaaaggaaa tggccactga gcaacagtgg gttagatggt
46251 cccagccttg gggccctctt tgtgcaggga gctcagcagc tgattaagca
```

FIG. 5 CONT'D

```
46301 actttgccgc tagtcctgta ctgtactgac ttgtaccccc acccaagagc
46351 cagcctctcc tgctgtggct tgtatcccag caccccagtt aggaaagcac
46401 ctaccgccct tgtgttaggc atctgcactg cacagtcagt aattattttg
46451 atttttttaa atcacaaaac tgaagaatgt gtctgattca gaacttcctg
46501 gaatataatg tgtcatgaca atctgtcaaa ctgaagaagc ttcgtttgta
46551 tctaacctgt tcctaggtgt ttatgtacac ttaggcattt ttttaaggct
46601 taattttctc tttctgcaaa aggggttgaa tgaaataaaa ttttgttaaa
46651 tgaataatta atttacaatg aggggtggtt cttttcttct tttttgagac
46701 agggtctcac tctgtctccc aggctggaga gcagtggcgt gatcagagct
46751 cacttgcagc ctccacctcc caggctcatg caatcctccc acctcagcct
46801 cccaagtagc ttggactata ggcacacacc accacaccca gctaatttttt
46851 gaatttttttg tagagactga gtctcaccat gttgcccaag ctggtcttga
46901 actcctgggc tcaagtaatc cgcctgcctc agcctcccaa agtgctggga
46951 ttctaggcat gagccactgc tccaagctgg gtggttcttc ttctaaaaaa
47001 aatgtaactc tgtgtgatga ctgagaccat aaaggataat gaagtaatat
47051 ttaaatctgt gtaaagcaac tagcattgtg ccgggtagta atagatttga
47101 taaatactac ttaaatgtaa atggaggata gcaacatttt ggacagggaa
47151 aaatatcgat ttcttaaaaa ctaagttcat tgcagtatta taatacatta
47201 taatggagtg tttagttata taactattgc aatgtacgta taacatataa
47251 taatacaagg tacttggtat gccatctgga atgcagtaat tctcagtaaa
47301 tgtgagctag cattttgtc ctcagttcat atcctattaa ctatcacttg
47351 ttgggtcttt ttgtttgttt ttaaaaacat gaaacaaaag tactgaacat
47401 ttattttcta aaaatccaac aactcataag aggcatattc acttcattac
47451 ttagcttttt aagggacacc attggcattt tactcccaaa ggatgctatc
47501 tttcactgaa agtcttcagt tatttttgt atttataata accccattca
47551 tatgattctg agttatcctc cagcatgcat ctttaaaaac tggattcttg
47601 tgcctaatgc aagcatctgg ctttcttaaa taaagatgaa aatggccagg
47651 tgcaatggat tgagccttat agtccgagct acgcaagagg ctgaggtggg
47701 gactactctc ttaagcccag gggttgaaac ctgcagtgag ctatgatcga
47751 gccaccgcac tccagcctag gcaacagagc aagacctcac ctctaaaaat
47801 aaataaaaat aaaaatgcat ttcataaaca catttcccag tagcagttcc
47851 taagttggat tctttaaatg ttcctttact aatttccata tacattttga
47901 tttccttcga caaggaaaaa atacaaagta tattttatgt ttaagttgtt
47951 gggctatata taaaaatgaa taggcctgta atcccagcac tttgggaggc
48001 agaggtgggt ggatcacttg aggtcaggag tttgagaaca gcctggccaa
48051 catggtaaaa ccctgtctct actaaaaata caaaaaaaaa aaaaaaacca
48101 actagctgga cgtggtggca catccctgta atctcagcta ctcgggaggc
48151 tgaggcatga gaatcacttg aacacaggag gtagaggttg cagtgagccg
48201 ggattgtgcc attgcactcc agcctgggca acagagtgag actgtctcaa
48251 aataataata ataataatag gaccaggacc cttaacctca agattctgtg
48301 acttgtcagg atgggggaaa aaaagtatgt aaataagtat agatgtgatt
48351 aaataagttt taataaagag caggggaatt tagagaaact gtaccaagca
48401 ttaaatgtat tacttttagt aaccagaaat tccttccatg gatgtagtta
48451 agattttata gtatttggga ggccaaggca ggaggaccat ttgaagccag
48501 gagttcaaga ccagcctggg caacatagca agaccctgtc tctacaaaaa
48551 aaactaaaaa gttagccagg tgtgggagtg cacacctgta gtcccaagct
48601 gctagagagg ctgaggcagg agaatcactt gagcccagga gttcaaggct
48651 gcagtgagtt atgcttgcac cactgcactc tagcctgggt gacagagtga
48701 gaccctgtct caaaaaataa taataataaa ataaaagatg ttatagtgat
48751 tgttggctca aaccatgcaa actctgctga acatagttta ttaacaataa
48801 ctctccatct gaggagtcat taaatctttc tgagctcagt ttgctcacat
48851 gtaaagtaag aaggttagaa ccaaattatt tgtcatctct tctacataaa
48901 ttattctgtg aatccctcac ttccctcagc cttgtaggtt tgggtatatt
48951 ttagaaattt gctagaatta ggccaggtac agtagctctc acctgtaatc
49001 ccaacacttt gggaagccaa aacaggagga tcgcttaagc ccaggagttc
49051 aagaccagcc taggcaacat gacgaaatct catctctaca aaaactacaa
49101 aaacatccag gtgtggcggt gcatgtctgt agtcccagct actcgggagg
49151 ctgaggtggg aggatcactt gagcccagga ggtcaaggct gcagtgagct
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FIG. 5 CONT'D

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49201 gtgattgtac cactgcactc agcctgggt aagagagcaa gaccctgcct
49251 caaaaaaaaa aaaaaaaaaa aagtactaga attaaacaaa agagacttgt
49301 tgcacctaaa atagcttttt ataaagcttt caagtccatg aggttgattt
49351 tcatttaaaa tacagttgct aacaagttgg gtcatctgct gtgcccacca
49401 atagcatgtt aaaagcattc aataggatgg cacaagagag gaagggctat
49451 tagcaacaga acagtgatgt tgggagatgg ggtaactaga ctgacaggaa
49501 agaatgagga aaagtgggac atccaatggt gaggtccatc acactgatcc
49551 tgagcccccg acggcaacac caaactatgc tcagcacttt ttaaagaaat
49601 tatttaaact gacaaataaa aattgtatat gtttattgta tgcaacatga
49651 tgttttgata gatatatgtt gtatacattg tggaatggct aaatcaagct
49701 aattagcata tctgatacct cacatacttt tttggtaaga atatttaaaa
49751 tctactgtct tcgcaatttt tagatataca atttatttt gttaaccata
49801 gtcaccatga tgtacaatag atttgctttc ttttcttttc ttgtttgaca
49851 cagggtcttg ttctgtcgcc caggatggag tgcagtggca tgatcatggc
49901 tcaatgcagc ctcgacttca ggggctcaag tgatcctgct gcctcagcct
49951 cctgagtaac tgtgactaca ggtgtgcgcc accatacctg actaattttt
50001 aaatttttt tgtagagata gcgtatcact ttgttgccca ttctggcccc
50051 aagcaatcct cctgtctcga cctcacaaaa tgctgggatt acaggcatgt
50101 ggcaccacac tcagccatga ttgcttgaat ttattccctc tgactaactg
50151 aaattttgaa tcctttgacc aacacctccc caatctctcc ctgcttccgt
50201 ttcctggtaa ctgttttact ctctgctttt tatgagttca attttttag
50251 attccacata tgagtgagat tatgtggtat ttgcctttct gtgcctggct
50301 tatttcccat aacataatgt ccttcaagtt catctgtgtt gttgcaaatg
50351 gcaggatttc cttctgtttt aaggctgaat agtattccaa tgtatgcata
50401 tatgtatgta tgtatgtata aaccacattt tcctatacac tcatccattg
50451 atgggcacct aggttgattc catatcttgg ctattgactt gttcattttt
50501 aagaatcagt ctttctgccc acaatgtgtg gtgtcttccg tacacacatg
50551 gtgggggctg atcagggagt agtggtgtgg tcaggtatat ttgtgtccac
50601 caggtttcct tccaaaatga atgtccaggc tactgggctt ttagagaaat
50651 agtcccaagg tatctacgca ctctgctgtt cttggaaagt caggatttgt
50701 cgtaagcaca tctgtcgcat tggaagcatc tgaagaaaac tgttcttttt
50751 cttaacggtc attgcaactg cttttaggat tccacagtgt taaatctgcc
50801 ctttctttag agcagtcaag aaagatgtaa taactgaagg aaatgggcct
50851 tcctccactg ataggcatga tgcttttgaa atttaagtgg agctcttgca
50901 tttgtttttt gtatggacgg tataaggaat ggcacaaacg ctagatggaa
50951 tagctttata gctgttgagc atttgtgctc ttttgtgcat caatagattt
51001 ctatttcatt ggtttcattt gttcttaaaa atgccctatt tttattttat
51051 ttatttattt ttttgagatg gagtctcgct ctgtcaccag gctagagtgc
51101 attggcacga tctcggctca ctgcaacctc tgcctcctgg gttcaagcaa
51151 ttctcctgct tcagcctcct gagtagctgg gactacaggc acctgccacc
51201 aagcctggct aatttttgta tttttagtag agattgggtt tcaccatgtt
51251 ggctaggatg gtctcaatct cttgacctca tgatccaccc gcctcaaaaa
51301 atgccctatc ttaacaagag cctttggggg gaaaattcca gtggcaaact
51351 tctggcatct tcttgacagg cagcagctta actacagtta tcacattcac
51401 aaatgaagtg gtaaaaaata ttgaatttta ttatactttt tggtttgagg
51451 aagccactaa tgtggccact aaacatgatg ttcaaatgaa accttctggg
51501 aagtttttca gggattacca ggataaccta gaatctcaac tagcctttga
51551 cattattaga aacagtgtcc caatggtaga gcacattatt cagaaactta
51601 gattttctca gatcagcacc tcaaagtact tatactaaga cacaggacat
51651 ctccagctca acatgtcaga gtaacacact gctgacatgt acagagtgac
51701 tcaccaatct agacgcactt ctatggagct ccattgctgg aagatcaagt
51751 ggaaatacac acggaaaggc aaagaacttc tatctgttca caatttatga
51801 tgctcgctat ctgcctgaca tctatgtctc tttcttaatg tttacatatc
51851 atttcaggtc ctgtgttccc aggatggaga ctgagagtga gcacagatgg
51901 atgtaagcat cacaaaatat gcccaaaaaa acactgacca gaggtcaggt
51951 catgtcactt ggttaacata actcttaata caaaacatgg tttgcattta
52001 atgatagaca cataaagcaa actctataca aatgagtcag agcctccaaa
52051 agtaactcgg aaattactga caatacctga gataatattt taagatgctt
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FIG. 5 CONT'D

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52101 tgtttttcac tattaggaag taaaactatg atttgcatta ggccacttag
52151 tcactaaagg taaatttggc tacaggcctc ccaccaaatc cattagccat
52201 ctatgtccta catgttgaat aatcacagcc tgaacttgca tgctttgaaa
52251 acttctctgt ctccaagaag atggtattca aagtgtcaag tttcatttct
52301 gtgcgatgcc cgccagtggc gtgatgaagg gattaaagtc attttgggaa
52351 ttacatttat aatctaccaa tctaatgacc aggatttgag ttatcagctt
52401 ttggaagaaa taaatgttga ggaagtgagg gagggagaaa aaaatttata
52451 caaaagaacg aagcttccaa ctcaaataca ttgtgtttta agtgcactat
52501 taaaactatt ccataaggaa tagtttagga agttaccaga aagtgataga
52551 aactgtgtgc tcacctgaac aggatttcag ggtaaacttt gtcttcatca
52601 aagaatggac agtagccagg tccagtggct caggctgtaa tccagcactt
52651 tgagaggtgg agttgggaag atcccttgag gcccggagtt acagaccagc
52701 ctggtcaata tagtgggacc ccatctctta aaaaaaaaat aaagaaagag
52751 aaaggaagga ggggagggga gtggagggga ggggagggga ggcgaaaggg
52801 aaggggggaag tgtggaggga tggaggggga agggggaggg agggaggaag
52851 gaagaaagga aggagttaca gttacagttt gaatggaggg atgcctcact
52901 gttgccccac atgtgttgct ggggcttgca ccccttttgtt gtatctctac
52951 cctaactggg ccatcagctt tttagcggac cacacatgaa ccctctgttt
53001 tacaagcaag acagaacatg agttcacaga cactgacaac tgatttgtct
53051 ctctttggtt attctttggt ttttttttcat tgcctcatct tgatttatat
53101 gcataagcat cttgatttat ttttgcaaaa aaaaacttcc aaaaataaaa
53151 gttttgtagt ttacctagga ataatacaca aaatattgca tttttgtgag
53201 gaaaagctat ttgtatagtt tatttcaatc taataatatt tgaaatttgt
53251 ttgaaaagca aaataaaaag aagcactgca gagtaactgt gtgattgcct
53301 gatgggttgt cctgcctgct acacagacaa aaccaattca ctgggaacac
53351 ggtactatag taaagaataa gtttaattaa ctaaggccag ccaagtggaa
53401 gaactggagt tattactaaa atcagttttg ctgagaactc agaagccaga
53451 gtttttatgg ataatttggt gggcaggggg ctagggaatg gatgctgctg
53501 cttggttggg gatgaaatca taggggtgtg gaaaacagtc ttcatgcatt
53551 gagtcggcct ctgggtgtgc gccacaggac cagctgagtt atgcatcatg
53601 ggtccgggta ggatcagttg gttaccagaa tgcaaaagtc tgaaaaatac
53651 atcaaaagat caatcttaga ttctacaata gtgatgttat ctataggagc
53701 aatgactcct gggcagtaag agagtatgaa aactatgccc atatttagca
53751 gaattcaggc cgtcccataa tcctaacctc gtggcctttc attagactta
53801 caaaggcagt tttagttcct ggacaaggag agggtcattt tagggagaga
53851 ctactgcttt caagttaaac tataaactaa attcttccca tggttagctt
53901 ggcctatgac caggaatgag tgaggacagc cagcctgtga acctagaagc
53951 aagacggggt cagccatgct agatttttct gactgtcata atctttgcaa
54001 aggcagtttc aactgtccag attatttagg tcactcaggt gaaatgtata
54051 tgatgcacat gtaaactaac aacattcagc ttttgtcata tgagtgacta
54101 tgtaaatgtg aataaattac attttagctg ttgataagac atatgtgcat
54151 tattgcataa gtatgcaaat actaactccc tcttcttcct caaggcactt
54201 tgaactaaag agtcctcaaa tctgaacatt ctttttatta aaataaattt
54251 gtgctccaaa aagcatataa agcaatttat aaaagcatct aaaataaaac
54301 acacatgaag taaatgggga aagtagaaac taacaaaaaa ttaggatagg
54351 caaaataaga ttataccagg aggaaaatga ggacataaaa ttcatatcct
54401 ggtgtatggt taagaagttt acgtgattca tgggagacag gagaatcgat
54451 ccttcaagta ttccaagatg acatcttaaa agctagaaaa ctatgtcctc
54501 aacaacaatc tttaaggcaa gcatagtaat gaatgtccta gagctttttc
54551 ttataaagcc aatgagaaaa attgtcccac atttggaaaa tgattaaata
54601 gtgactactt aaatttttttt gctatgcatt tttttttttt tttgagatag
54651 agtcttgctc tgtcacccag gctagagtgc agtgacacaa tctcggctca
54701 ctgcaacctc cacttcctag gttcaagcaa ttctcctgcc tcagtctccc
54751 aagtagctgt gattacaagt gtatgatacc accacaccgg ctaattttag
54801 tatttagtag agatagggtt ttgccatgtt agccaggctg gtctcaaact
54851 cctgacttcg tgatccacct gccttggctt cccaaagtgg tgggattaca
54901 ggcgtgagcc attgtgccca gtcacatttt ctagtattag aaaataacat
54951 gactgcttga ataaaagcag gacattgtta aagggaactc tcatttgata
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FIG. 5 CONT'D

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55001 ttcgggggga atgcaagttt gttgtcacat tttttaaatt aatagcacac
55051 aattcataga agcatagccc tctaaaaaga gattaccttg ctgaaactga
55101 aaaagtgtta ggattttata gccttttttaa ataagtaaat taaccccaaa
55151 caagatacca ctatatacct attacaatgg ccaaattcca gaacactgac
55201 aataacaaat gcaggtgagg aagtggagca accagagctc tcatttgtca
55251 atgaaaagag tcaaattcta aaaaaatctt tgaagagatt tactttgagc
55301 taaatatgag agaccaatga cccgtgacac agccctcagg agatcctgag
55351 aacatgtgtc caaggtggtc agggtacaag ttggttttat acaatttagg
55401 gagatataag acatcaatta atacatgtaa gatgtatact ggttaggtct
55451 ggaaaggcag gaaaaccgga agtggggact tccaggtcat agttggattc
55501 acaggttttc tgactggcaa ttgtttgaaa gagttattat ctaaagacct
55551 ggaatcaata gaaaggaatg tctgggttaa gataggcagt tgtagagacc
55601 aaagttttat catgcaggcg aagcctccag gtagcaggct tcagagagaa
55651 tagattgtaa aggtttctta tcagacttaa agactctatt ctatcagtaa
55701 ttccaaaatg gaggagggca taatgaggca ggtccagctc ctccttccca
55751 tcatggcctg aaagttgacc tgaactagtt tttcaggtta actttggaat
55801 gcccttggtc gagaggaggg gtccaatcag atggttgggg ggcttagaat
55851 tttatttttg gtttatacat tcatttctgt tagaaaggaa aaaaaggtac
55901 agttactttg gaagatagtt tggcagtttc ttacaaaact aaacatactc
55951 ttaccatatg atctaacaaa catactcctt ggtatttacc caaaggagtt
56001 gaaaatatgt ccacagaaaa acctgcacat gggtgtttgc agaagcttct
56051 ttttttttttt tttttaattt tatcattgtc caaacttgga agcaaccaag
56101 atgttgttcg gtaagtgaat agataaataa ctatgctaca accaagcaat
56151 ggaatattat ttggcactaa aaataaatga gctatcaagc ccgaaaagat
56201 atggaggaaa cttaaataat gcatattgct aagagagaag ccagtctgaa
56251 aagactactg ttctgcaatg ggcaggtcta tggaaatcta cccctaaagt
56301 ctgcggaagc taagaggcca agaaagaggc tgacacattt ggtttctcag
56351 gaaaaaacaa acaaacaaac aaacaaaaac atttaatagg gacttaggaa
56401 gagaagccac aatgtcctgg gcagctgcca gacaaggtgt tggattccca
56451 cactatgacc cccacagacc cagggcttcc atgtcatagg gaaggaatgt
56501 gtaggacaat tatagggaaa ggcaagatgc tatgtgaatc tgcctagagc
56551 agaatttatg gtcaagggag ttttgaccta agggcaggat ttacagtaag
56601 tacaagctct tacacaagga acagtagata aaatggaaga tagcagcctt
56651 ccctaaattg aggttaatca agaagtcaac agggcggatt ggcatccaag
56701 atggagttgc gttagcctcc acaactacat acaatgattc caactatatg
56751 acattctaga aaaggcaaaa ctatggagac agtaaaaaag aagactagtg
56801 ttgccaggag ttagggtgca gggatgaata aagcaaagca cggaggattt
56851 ttaaggcagt gaaactactc tgtatgatat actacaatgg tggacacatg
56901 tccctacaca tttgcccaaa cccagagaat gtacaacacc aagagtgaat
56951 tccaatgtaa actgtggact ttgggtgatg atgacatgtc agtgtaggtt
57001 catcaactgt aacaaatgca ccactctggt gggggatgtt aatagttggg
57051 gaggctgtgc atgtgtgtgg caggggccat atgggaaatc tctattttcc
57101 accccatttt gctgtgaacc taaaactgct ctaaaaaaat aaaatctttt
57151 ttaaaaagtt aacccaaaag tatatggttt tattgcccta aagaaagtta
57201 accaggcata ttgtacctaa cttagctatt ttagagaatc cttttctctt
57251 caagtattta aatcctgttc ctcaaataca ctctgaacta ggtctcattg
57301 ctgccaccaa cggttcactc attttaggag ttaaatgagg gggagttaat
57351 tgagttttat tggaaaacgg ccacactcag tcgttttcat atcatctatg
57401 gctgcttttg tagcagaatg gaatagttgt gacacagact aaatggtctg
57451 aaaaacctaa aatatttgct atctgggcct ttccaaaaaa gtttgtaaac
57501 tccgggccaa ataaaacttt gacacttgct cgaatctggt atgaaaattt
57551 tgcttgtagc atcagttaac atcagcagat gatatgatac caaaaagtac
57601 ttggtatcat cagttaacat cagcagatga tacgatacca aaaagtactt
57651 ggtatcagtt gcttttggta aaagcaattc tacagagggc caaaatactt
57701 tagctaaaaa ccactgattc agaatctcta aggctgggac ccagaaatct
57751 gggttttaac atagtctctg agggactctt atgcatactc cagttggaga
57801 atcgctggag cccactggcc tagcccagtg gtggatgtac agattctgac
57851 tcagaaagtc tgaagtgcag cccaagattc tgcttttctc acaagctccc
```

FIG. 5 CONT'D

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57901 acatgatggc gatgttgctg gtctgagggc cttagtttcc tcacctgcgt
57951 aatggagatg ataaaaatct atttcatagg gttgttgtgg gtagtaaatg
58001 aagtcataat gtccatttat atcctgcccc cacccctttc aagctatgtc
58051 tattggggca agttaccgaa tgtcttggtt cctataagtg gagctaaata
58101 atattgccca catcacaagg ttgctggaag gagcaaatga gataataaac
58151 ataaagtacc tagaacagag cctggaacac tgtaaaggct caataatgta
58201 agatactatt attactatta tcattatcgt tacatagggt gtctgatcat
58251 agcagatatt ccatcagtgt tagtttcctc cctactccct ctcctatcca
58301 tcctctcatc cctacccctc cctctagtgt cttctgttga tttctttttt
58351 atttttgttt agagatgctg tctcactctg ttgcccaggc tggcatacag
58401 tggtgcaatc atagctcact gcagcctcaa actcttgggc tcaagcgatc
58451 ctctcacctt agcctctgga gtggctgtgg ctacaggtgc acattaccac
58501 aactggctaa ttttaaaaag tgttttgtag agatggagtc tcgctatgtt
58551 gcccaggctg gtcttgaact cctggcctca agtgattctc tggctttggc
58601 ctcccaaagg gatgggacta tgggcacaag ccactgcacc cagccctcct
58651 tctgttgatt tctaatgtgt ctaattagat aacttctata ggaatgctga
58701 ttcagaaata cctgaaccca ggtggcccta cctgacagtc cagaggtgcc
58751 acacaaacag ggacccaaaa tgagcttgga cattgactgt gctgcccagg
58801 cccctctgcc caccccctct caggcaggct tttggtagag agtttgggag
58851 aacaagggaa agtgggcttg ccagtccttc ccacctcagg ggagcaccat
58901 ttccagggct gcctgaacat tcttactctg cagcacatta atctacgtgg
58951 caccaagttt atttttctga gaagattatt tgggacaata tatggaaaat
59001 ctgagaagtc atttctcttt ggcagcactg ccctccataa caaagcacat
59051 attcctgaag ggcatctgga ttttgtttca ggtttctttt tgcttcctca
59101 gggtttaagt gctgccagga atggccttct aagaattgct tagcaaacct
59151 taatctccag actcagggtg gtggggataa tcacattttt tgcccgaaat
59201 gaccaaattg aaaccatccc cacagggttg acaagaatgg catgctgggt
59251 tctggacaga aatatagtta taattaagaa tgaatcagcc gggcgcggtg
59301 gctcacgcct gtaatcctag cactttggga ggccaaggcc ggcagagtgc
59351 ctgagctcag gagttcgaga ccagcctagg caacacggtg aaaccccatc
59401 tctgctaaaa tacaaaagaa attagctggg catggcagca tgtgcctgta
59451 gtcccagcta ctcgggaggc tgaggcagga gaaatgcttg aacctgggag
59501 gcagaggttg cagtgagccg agatcgtgcc actgcactcc agcctggggc
59551 gacagagcaa gactccgtat ctacaaaaaa aaaaagaact aatcagacag
59601 gcacggtagc tcacacgtct aatcccagca ctttgggagg ccaaggtggg
59651 tggatcgctt gagttcagga gttcgagacc agcctggcca acacggtaaa
59701 acctggtctc tactaaaaat acaaaaatta gccaggcttg gtggcatgtg
59751 tctgtaatcc ttgctattca ggaggcagag gcatgagaat cacttgaacc
59801 taggaggcag aggttgcatt gagccagtat tgtgccacta cactccagcc
59851 tacctgggca acagaatgag actctgtctt aaaaaaaaaa aaaaaaagaa
59901 ctaatcaggc cacaattcag cacacttcct tgttgccaaa agtcactaga
59951 tcctgaccat ttgcatcccc attgttccta aagataggat ttctgacatt
60001 aagattataa tgatggagac aggaggcaga gaaattctag gcagacaggg
60051 gcaggtccct ggcaaagtcc catcctcaag ccaaaaagcc tgagactgca
60101 gcccaaagtg agaacttaca tccctgttct cccgctcaaa tgttgccttt
60151 tccaaaacca cccatggccc gccctgcccc ctatcctgtg cttataaaaa
60201 ccccagactc agccggcaaa aaggagaagc agctggacat cagagactat
60251 ggctcaacgt ctgagagaag tggcttgact tcagagagac agcttgacag
60301 cataacttca gagaagaatc tggccagaga cagccggact tcaggggaag
60351 attaccttcc caccccatcc ccttttcagc tccccttcct gctgagggcc
60401 acttttatca gcgataaaat cctgttttta ccatctttca attccttcgt
60451 ccaaactcat ttctcctgga tgccaaacaa gagcctagga gccacaagtg
60501 cagatgcaaa aggctgtcac actggccctt tgccctcact ggtggaagac
60551 agctccctca catgaaaagg cagagggagg ctctgcagag ctgctaacac
60601 ttaagctgtc tgcaaatggc agagctaaaa gaccactgta acactccctc
60651 tggggcttca ggggttgcag gaaccccacc agatactgcc ttgggggcat
60701 gcatggagtt tgctcctgct ggtgctcaaa agtgctcacc tggctcctgc
60751 acctgctcac ctgtgtgctc cctcccataa ggggtggaga gcagtgagtc
```

FIG. 5 CONT'D

```
60801 cgaatgagtg gagttcactc ctgctggtga cgaagtggcc agctgattcc
60851 agtggttgtg tactccagtt cctgccttat ttgctcatgc gctccctccc
60901 gcaaggagtt gagagctgtg ggctgagtaa atggggcacc cctattgcga
60951 gtcctgcaaa gcggtcaggg aaatatccta cttcaataag actgtttaaa
61001 aatggatttg catccctgtt gttcctatag agatgatctc tgacggaatc
61051 ataaggcttt tgtttaagga ttgcttaaga tgttctcaga tccaaatttc
61101 agcgaccagt ttggagaccc tcacagaaga acgggatgag cataagaaca
61151 cagcttcttc atctccctgt cccatgactt caccctgtgc tcttcgacca
61201 gtgaacactc tccacacttg ggcccactcc aaaaccctaa agactgtagc
61251 cccaaactcc tcagacagat ggatttaaga ttccctccca tctcctcctt
61301 tggtgaccct ataggtaaat gctttatctg ctaaaaccca gtgtctctgg
61351 cactggtcat ggagtgcctt ctcacaagag caaaattgag tgtaaggtac
61401 attttcttcc acaagccagg tattccataa gcaccaccag catcagcaga
61451 tccagctaca gattcagtga ctatgatcaa ctccacagac catcagcttg
61501 ctttgttgag aggattctgt cctaataaac acactgctaa gactaacatt
61551 cccaatccac aggacctaga ataaaagaaa attcaggcta cttagagaat
61601 aggtaaatga aagatgaaaa agggagggac aatcaacagt attgagcacc
61651 tgtgctttgc caagcaccat actacttggg atcatgtagc ccttcatgaa
61701 aatttgtgat aaatgtttta ccatcatcct ttccttcctt ctttccctgg
61751 gctattcctt cctcccttcc ttcttccctg agtaagtcag tcaaaaaggc
61801 atttgataac ctcccctccc ctcccccttca agggagaaga ggctattaca
61851 gcagaggaag aggaaggggc tggaaagcca aagaagcaac tagcatgcta
61901 ggaaggtgag tcacatacag gggaactgag ggtggaaaaa agaaagaaag
61951 gacagaggct gctcctttag cctggatccc agagccaatt cacaggagca
62001 gcagcatgta acatgagtaa aaattaacct ttgtgggggc aagccactga
62051 gatttcatgg tcatttgtgt gaaaggaaaa tgaatcttgg ggccccaaaa
62101 tcactaagct aaagggaaaa gtcaagctgg gaactgctta ggacaaacct
62151 gactcccttc tattcaagtc atccctctgc tcactgagat aaatgtatat
62201 ctgattgcct cctttagaaa gggtaatcag aagctcaaaa gaatgctagc
62251 atttgtttct tatctaccta agacctggaa gccccctccc aacttcgaga
62301 tgtcccacct ttccagacca aaccaatgtt catcttacat atgttgatgg
62351 atgtttcata tctccctaaa atgtacaaaa ccaagctgtg ctctgaccac
62401 cttgggcaca tgtcgtcaag acctcctgag gctgtcacag gcgcatatcc
62451 ttaactttgg caaaataaac tttctaaatt aactgagacc cgtcttagat
62501 tttgggggtt cacatttgtt acccacagca agccgggtct aagccaactg
62551 atacagtaac tggtaaataa cttctgttct tagagtgtga atacagcttg
62601 tctctctcat atcaaagccc atggtccttc cacttgatat atagaattgt
62651 ttattgattt aaaaaccatt ttattgatta aactggcctt tgtagaactc
62701 agctgctctg agcttgtcca cttctcagca cttagggaaa atttcatttt
62751 ataatccttt ttagtcctct tattcctctg cagcagaaca attattccac
62801 caatactgtg gaaaagttag cctagtctga aaaatatttc agctacaaat
62851 acctaaaaat gcaggataaa atatggctga gctagcaaga aagtaagaga
62901 aatagtccaa gtatttaaac tgctctgaaa tactaaagga ctgaaaatgg
62951 aatgagacca ggagtccaaa gagaggttaa tgagcaataa agctaatgat
63001 tgtttgaagg gcagggcaga tctagactgc tggggattaa agatacacac
63051 acaaacacac atataacata tataggtgtg tatgtatata tatatacata
63101 tagttatttt gagagtttaa gacttaaaga aagttgcaaa aataatacag
63151 agttcctgtg ttacccttca cccagcttct gcaataataa tgtcttacct
63201 attcacagca ctttggtaaa agcaggaaac tgatactggt aaaatactgt
63251 taatacaggt atagatctta tttgtgtttt actagttttg aatgtaccac
63301 tttgcatttt tggtgtatag ctctatgaat tttatcacat gtatagatat
63351 gagtaactgt caacacaaag aaactctgtc gtgttacctc ttaacagtca
63401 gacccttgtc ccaaccataa catttggcaa tcatggattt gttcttcaat
63451 gctataattt ttctttggct atgagaatgg tatctagatg gaatcataca
63501 gtatacaaca ctttaagact ggcttttaaa aactcaccac aatgcccttg
63551 agattcattc aagttgtacg tatcaatagc tcattacttt ttatggctga
63601 gtagtgtccc atggcatgga tatactccag tttgctttct attcattcac
63651 taaggactgt ttggcttgtt tacagttttt ttgtttttttt gtttttgaga
```

FIG. 5 CONT'D

```
63701 tggagtctca ctctgtcgcc caggctggag tgcagtggtg caatcttggc
63751 tcactgcaac ctctgcctcc cgggttcaag tgattctcct gcctaagcct
63801 cctgagtagg tgggactaca ggtacatgcc accacgcctg gctaattttt
63851 tgtattttta gtagagacgg ggtttcgcca tgttgcccag gctgatctca
63901 aactcctgac ctcatgatcc gcccgccttg gcctcccaaa gtgctgggat
63951 tacaggtgtg agccaccatg cctggcctgt tttcagtttt tgactattaa
64001 aaataaagcc accatgacat tcatgtacag agttttgttt gaacataagt
64051 tttggtttgt ctaggataaa tacccaggag tgtgattgct gggtgatatg
64101 ataagcatat gtgcaacttt ataagaaact gtcaaactgt tttctagagt
64151 ggttatgcca ttttatagtc ctaccagcaa tgtttgagag atccggttgc
64201 tctgcatcct cactagcatt tagtgctgtc agtacttgtt attttagcca
64251 tttaaatagg tgtgtagtag aatctcattg tggttttaat atacatttcc
64301 ctaatggcca atgacactga acactgtttt acatgtttat ttgccatctg
64351 tatatcttct ttggtgaaat gactattcaa gtctttgatc cattttctaa
64401 ctggactgtt tacttactct gagtttatat ggttctttat atattctgga
64451 tatgagtcct ttgttggata catgctttgc aaatattttc tcctagtcca
64501 tggcctgtct ttaaacctta gtgttaattg ccatgaaggc actgtcaaca
64551 aagtctacac ttcaggaaag gtgcagaatg gagttctctg gatatagtca
64601 aatcacctga agagctttac cctcagaaca ggcgaactag aaaaaattct
64651 acaagccaaa gaaataaata gcaagctgaa agatagatct gaagaaatta
64701 gccagaatgt ggctcagaga aacaaaatga tgcaatattt taaaaataat
64751 aatttagaac ctcagaaggt ttaacctatg cctaatagga attccaggag
64801 gagagtctag agtaatgttg tccaatacag tagtagccaa tagccacatg
64851 tcactactta aaatgtaaat taattaaaac taaatgaagt taaaaatgca
64901 gttccttggt tgtactggcc acatttcaga tgctcaatag ccacatgtgg
64951 ctggtggcta ccatattgga cagtgcagat atagaatact acaggaaatc
65001 ctactggaca gtgctgatct aggtcataaa acaagtctga acaaatttca
65051 aagaactggt atgatacaga tgttttgtgg aaataaacta gacattagaa
65101 attaaaaaca aaataactcc tactgcctcc tctcaccttt ttccccatta
65151 caattccacc tcttaatgtc ttcatgttct tgatgagaag cagaacgtcc
65201 ctactgtgtt ccatggcacc aagttcccca gaacccgcca gtctctgatg
65251 acagaacatc ctggaccgcc cagctccaca ccccaaccca agaagttctc
65301 taaaacactg accatgacag cctggggtag gtttccactt taacattctg
65351 accaaaattc tcaactcgat gcagtcagag tctgcgcaac ctgggacctc
65401 gagccaagaa atcctcaagt gaccttactt ggcaaaacca acaaaacaac
65451 caaatacagg tctcaagcga tttacagctc ggtgcttaac tcggtcaccg
65501 gccgaggggc agccctctgg cgccaaagcc ccgcctctct atgacgtcac
65551 acgaggagcc ctgaagtggc ggtcaagctt gaggcgtcat ctggctgcgc
65601 ctagtgggcc gttgccttac agttgctgag aggaggcgag aggcgggggc
65651 gctagggccg agatcatgtc tgactgggag aggtttcctt ggcagcagag
65701 gacgctaggt ttgggatgaa agaagctggg cagatgcaaa atctggagag
65751 cgcgagggcc gggcggtcag tcagcaccca gactggcagc atgaccggtg
65801 agtgtccggg accctgctcc cgccacccta cctttcgctc tgccctgtgc
65851 gtctcccgtc attgaactcc agattccttg tctgagcctc tttgcctccc
65901 ctgctgcttt tggatgtctc ctgcccgccc tctgcgtgtc ccctccgcgg
65951 tcgccaggac caatcggctc ggtcgcactg gcttttgaag tctcgctttt
66001 taccctgtt agctacttct cacaggacct agagctgggg cctctgaggt
66051 caaagagcct gaacatttcc aaacggcgct tttgccttga tttccaaatt
66101 aaccgcacgt gacgctttcc tgtatttcga ctgctttacc gtcgaaggtc
66151 agcgcatttt tcgggttgtg ttctaatcgc tttccttta gcaacgcccc
66201 atcacagtcc aaagaaaagc ttgcaccacg acgacgtcag atgcgaagac
66251 ttttcacagc ttgctttggg ttgtcccct cagctatgtg tattagctgt
66301 accgtttttt cctgcagggt gagggctgga gaaagaaggc tcaacttttt
66351 aagtggagaa ggaggtagcc acgactaagg ctgaagcgtc tactgctaag
66401 atacctctga ctctcttgtc ccctatcttt ttctgtgcct cttgcgaaag
66451 cagctgggct taggctgcag cacctaagtg gcattgagat tggctccctt
66501 tttcaccatt agtaacaaag tttaaagtgt ttgtcgtctc ttttgtaggt
66551 cagataccaa ggctttctaa agtcaacctt ttcactctgc tcagcctctg
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FIG. 5 CONT'D

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66601 gatggagctc tttccagcag aagcccagcg gcaaaaatct caggtataat
66651 ttgtttcata gtttttcccc ttagaaaagc agtggtttaa aatctgagtt
66701 tattgctcca gtttctgtca tacctaaaac caaacttaac aaggcttaag
66751 atttaaaaaa tatctttatt gattaacatg acactttata attcccagcc
66801 gtaataagtc atcttccatt ctaaaaatac tttctgagaa taccatgttt
66851 atcgggtact aatggtattc atatgtcagt tcggctaata agattattgt
66901 ctataccaca taatttcccc caattatata tactgttggt gttttatcta
66951 ggtagtttac tcctctgcca cagaaatata taaattgcct ggagatagag
67001 accatgtctt attttaccta gcatataccc tttagagtct agcattatat
67051 gagtgctaat tgattaatgt tggatggaag tagtctcttt ttggatcttg
67101 aaagacagga tcaaaacaga ttagaaatgg gctgtgtgca gtggctcacg
67151 cctgtaatcc tagcactttg tgaggctgag gtgggtggat cacctgaggt
67201 caggagttca aaaccagcct gggcaacata gtgaaacccc atctctatta
67251 aacatacaaa aattagccag gagtggtggt atccgcctgt agtcccagtt
67301 acgcgggagg ctgaggcatg agaatcgctt gaacgaatcg ttggaggtta
67351 cagtgagctg agattgcacc actgcactcc agcctgggtg acagagcaag
67401 actccatctc aaaaaaaaaa tcagaaatgt atagtaagaa taatcataaa
67451 agccaatata ttggaattgg aagtataaac atcctgcgtc ttttctttct
67501 cctacccttg gggcaacaag gggctaggtt ctcattttcc tccatgcttg
67551 gaatggcatg atgctaggtt ctcatcattt ctgtttgata attttggaag
67601 cttagggtgt tggcattaat ttttataggg ggccacggcc attggaaaat
67651 agtattaggt taagttgagc atttaagact ttttttaaaa cagaggtaaa
67701 atgaggggggg tggggcagaa aattacacat ggcttctcac cactctaaca
67751 acattactgt taatattttg gtgcttccaa tcttaagcat gaggtttttt
67801 atttttactc ttacaaagtt gtagttatat tctgcatgta ctcgctgagg
67851 tttccaactt gcccataatt ctgctgaaag gttgctttag attttccaga
67901 gaaagactat aaatccttaa attcccacag tactcttagg agaccaccta
67951 ctcttttcat tttactgtgg atgaggtttt gtgcttggca ctggagacac
68001 aaagcagaaa aaacatggtc tttattttct aatgagtaga aacactaggc
68051 atttaaacaa ttaaaacaga attggtggag tgagtacata gtataagcag
68101 agatgttggc aagactggga gccaggctct atatggggaa gtgaaggaag
68151 gattcacaga gaaggtcgta tttgcactga gacatgaagg attagtggac
68201 ttttgcccaa gccaaggaac tctacatgga aaagcttgga gcaatgagag
68251 aatttgtggt cctcaggcca gaaagtgaag ttaggtagag ggaagagact
68301 ggaaaggagc ttgacaatgt agacaggaat catatcataa aaagcattgt
68351 atgccttgca aaggagttta gattttatct tatcaatata ggaattgcat
68401 tgaggaattt taacaggatg tgaggatatt cgcttctcat aataaaatga
68451 tatctcttgg tgtagtttcc tcccccaatt cctatgtgaa gtgttttata
68501 gatagtaaaa cattatttaa aatattatac atcgttattc catatttctc
68551 accctcatcc ccccactctg gctctacatg ttattaacgg ctgagaaagc
68601 tcttcatttc cttcattaat tttgaaattc ctttattcct tctacttgtt
68651 aatagtttag tattatttta tgaaagtaga tttccaagct gttagggatt
68701 ttatgtagtg ttgtgttttt tttgttttgt tttgttttgt tttcagataa
68751 aatttatttt gaagagccag attagaaaca aatatttaga ggtttaagac
68801 ttttaggccg ggtgcagtgg ctcatgcctg taatcccagc actttgggag
68851 gccgaggcag gcagatcaca aggtcaagag atcgagacca tcttggccaa
68901 catggtgaaa ccccgtctct gccaaaaata caaaaagtag ctgggcgtgg
68951 tggtgcgtgc ctgtagtccc agctacttag gaggctgagg caggagaaac
69001 acttgaaccc aggaggcaga gattgcattg agctgagatc acgccactgc
69051 actccagcct ggcgacagaa aaaaaaagaa aaaaaaaaga aaaaaaaacg
69101 tataaaaact ggacatatta gagattgaat acaaattttg aaaaggcgtt
69151 ctttttttg taaatatcca gatgtgatct cgttttagtt ctgttttttt
69201 atatacacac cacatcctgt gctgaaatta agtttttttt ttcaacaggc
69251 acaagttgta tttaattagt gagaaatgac atttatgttt ctattaggaa
69301 ggaattgatt ggccaactaa ttgttgaagt ttatttgcaa ataatacaca
69351 ccctactgtt tcctcatact atatagagaa agctgtggat ctgagaaaac
69401 tgagatgaag ctttcagtta gcattttgtt aaaaaaaata ctaccaagga
69451 aatttcaaaa ctatattagc aacaaaattt tatacaactt tatatcatgt
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FIG. 5 CONT'D

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69501 ttaacaaaag atcaaggtta tgactctcat tttctcccaa gccaacaact
69551 cttaagtttt cctggcatct cattccttca tctggtgggc accatggaag
69601 ttttctaaat gaaaataaat aagtcttttg tttcagatat tttatttggg
69651 atcttattta gaaatctgac tcatacgcat gtctatttaa ggcttttaaa
69701 tggaaagtta taacacatag aaatgagtac agaaggcatc aaaacaaaga
69751 acatccatgt cttcagaaag ccaggcaacc tggaactagg attgacttgg
69801 ctatatgaaa ggttatcact cttagctcct ggtcctggag catgcccagc
69851 tcctattcac tgcattggtg tctttccagc tgtgctccca tacccatgtg
69901 tcctaggact acaaccctct caccatggtc ttgggtaggc ctttacttct
69951 gttcttacct acagggcttg ggactccaag gcacttgggg agggagagcc
70001 tcaggattac tctggcagtg atctgggtga aagaggcttt tgcatgttaa
70051 cttgggaact tgactatcat ttttaacatt gtttatatga gaaaaatgtg
70101 ttttaaattc cgaaaaggga gatttaccaa gtatttagaa catgattgta
70151 ggttgtcaat tacttgtata tttaatgtca ataaagcaga agtatataat
70201 ttcattagtt cttctgatat catggccatt gcaaaaaagc aagaccaatg
70251 atagtgtggg ggaagaatac agaatgaaag ggagcatatt gtactccact
70301 tttatagtgt tatttattgt acaaacatta tcattgaaac tgaatttata
70351 gctgcaacat ttttaaaaac tatttttttc tcttggattt ccttttgta
70401 ctagttaata tccacataat tttgcaggta gttgcagtca tagcaggaac
70451 acaattttgt atttgacagt tttggtactg ttacagggtt gataagttat
70501 taattttaaa ttatacagta agaatacatc taaatttcat atgcatgtag
70551 tatatgctgc cattgtgttt atacttgtgg aaatattaaa tttctcaaaa
70601 tgttgcccaa ttttgtgcct aatatttctt taccatttac tatagtatat
70651 tttttccagt attatttgca catggtattc ttagagttga gtacaaactt
70701 tttccaatta agagaaaaaa agtcttcttt aagctaaagt aataagattg
70751 tttcacttaa attctttagt ctgcttttgt tgtacagagt aaatcacaga
70801 aataccaaga tgcaattaga catgtaattg tattggaaat actgcttttg
70851 atactttacc aacatttgtc ttactaaaag tatttttatg agttaccaaa
70901 gtaatatatg tttgttattt ttaaaatgga cagaagaaaa attttatcat
70951 aattccacct cctagagact aattactttt taaaaattgt ttctcagtct
71001 tttttctctt actttcttta cttacatgag atcatttaac tctggatcct
71051 acccttttca cttaacataa gaaaatactt atgctgtaat gctagtataa
71101 acattggagc agcaccttag tctagtaatt tagagtagcc agtggtttta
71151 cagccagcct gcctgggttc agactctggc tccgcctctt actagttgta
71201 taactttggg taactctacc tctctgtgtc agcttcctca tctgtaaaat
71251 gaaatgttac tagtatatac tacatgaggc ttttatgaga aatgaatgag
71301 ttaatatttg taaaggtctt agtgcctggc acatgttagg tactatgtgt
71351 ttgttgttgt tgttgttgtc tccttattta tttatttgtt tatgtattta
71401 ttttaataga gatgtggtct tgccatgttg cccagactgg tcgctaactc
71451 ctgggctcaa gcagtccacc cgcctcagcc tcccgaagtg gtaggattac
71501 aggcatgagc caccgcacct agcctcctaa ctctttccat tgtgtcttct
71551 ggtaccttat gctaaaggcc ctcactgtac ttttccagaa cagaagcaat
71601 gtggcataat ggttaagaca atggatcttg ggctggatct ggcatatcca
71651 cttaattacc tgtgtgacca tggttgaatt atttaatctc tctcagccac
71701 aatttcctca tttgtacaat gggaataata ggagctactt tataaagtta
71751 taaggattaa atgagataat ttagggcctg gtacatgata aacatgcagt
71801 agatgttagg tactgttatt atcatcactc atatatataa ttattaccac
71851 tactagcacc cacatcctta ccgtttttcc actgatacca tcacttcctc
71901 tacttcctgt tctgtctgaa cagaaacctc attcccagaa catgggtttt
71951 cttataaact tctttttgat ggttctttct tttctagcat ccagcacttg
72001 tttcataaga ctagcaggtc aacatttaca aagtttccca ttcctacttt
72051 aaaactttat caatgtatta actatcccac cctttttttt ttttttttga
72101 aacagagtct tgctgtgttg cccaggctgg agtgcagtgg cgtgatctcg
72151 gctcactgca acctccatct cccgggttca agcaattctc ctgcctcagc
72201 ctcccgagta gctgggacta caggtgcgca ccaccatgcc cagctaattt
72251 ttgtattttt agtagagaca gggtttcact atgttggcca ggctggtctc
72301 gaactcttga cctcgtgatc tgtccgcctt agcctcccaa agtgctggga
72351 ttacaggtgt gagccactgc acctggctat ctcacctatt ttggagctca
```

FIG. 5 CONT'D

72401 cagaattctg tgtcactttc tttgtcttaa tcaacttact tcatagtcac
72451 tttcctgttt tcataaatca taagccctgt gagagctgca tcttgagcaa
72501 ctaggctgtc atgtagcaag ggttcaataa gtatttgttg aactaataaa
72551 tgaaggactt tggtccctgc ctcaaaactt tctttctact tcaagttttc
72601 actttttccc tcatggatat acctgtattc gttttctatt gctgctataa
72651 cagatgacca caaagttggt ggcttaaaac aacacaaatt tattatacag
72701 ttctgtaggt aagaggtctg aaatgagcct tactgggcta aaatcaaagt
72751 gttggcagag ccaaattccc ttcagacact ctacgggagg acctttcctt
72801 gccttttcta cctgtggaga ttgtctgttt tccttggctc atgggcccct
72851 tccatcttca aagccagcaa tggccagtca ggtctttcat gttgcatcgc
72901 tgactctccc acacccctct tttactcata atgacccttg tgataacatc
72951 gggccaatca gataatcaag gataatctcc ctatgtcaag gtaggtggtt
73001 agtgcctcag ttccagctgc aaactgattc ctccttgcca tgtaacaaaa
73051 catagtcaca ggctccagtg actgggacaa ggaaatctct ggcggggcat
73101 tatcctgcct accacaatcc cgatctaata cctttgctac atagttcctt
73151 atcttctcaa ttccagttaa tttacctcta ttccacttta gtcattcatg
73201 gccacacttt ggacttttcc attactcaaa actgccacaa ttctgaaacc
73251 ataaacttca gaattttatt ttctcattac aatttccaat ccttctatgt
73301 tttgggaaag tacatagggg atagattata aaggtttatt tactaggtaa
73351 agtagtatga acttgatcca aacaaagtgg gaagtcaatg tagagtttca
73401 tcatggaaaa aaaaatggtc aaagccaagg aagccagcct ttaaatatgg
73451 gaatattgaa ttagtcatat gtcttatgtg ctaatctttt tttttcctta
73501 atctgatttt tattagaaaa atgaagaggg aaagcatgga cccttaggag
73551 ataatgaaga gaggaccaga gtatctactg acaaaagaca ggtaaatttt
73601 tatgatttca catatatatg ctcataataa caaagcaaaa ggaatagtat
73651 aaagtagaat aaaagtgcct ccatttctac tatcaaggga gtttttaaaa
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73751 ttttttaaaa aaaaaagtac agatgggatt attctatgct acatcctaca
73801 tcttgcttta aaaaaaaaaa aactcttgat ggttcatata gatgtgttaa
73851 gaaatactct cccttagttc tctcacactc ccacacacct tgctgggtat
73901 gccaagaatg caaggcccta accatttttt acctgggtca tttctcagag
73951 ttgtgtttgc agtgatcaac cctgaaggtt gaggtaatat ctccctccag
74001 gacaaaaagc aatctggctt actttctgct gtgaaacagt aggaccctca
74051 agctcagtgt tcctctccta taacactacc caccctgtgt ccaggcagcc
74101 atctgtgccc atttgtatta cccctcatgg ggcttgaggg caggaaacag
74151 aaatgatgct catactgact gctgtgctgc aaataataaa gttcattgtt
74201 tctaacccag aagtttcatg ttttctgcta atatccatga aacagtaaca
74251 ggttaactta ttagttggta agtagggtaa aatcaaagtg cagacttgaa
74301 agatgaacct tgttcttttt aatattgtat agtatttcct tgttacttta
74351 ttcctttgag ttttccagag gttccgattc attggatgca gagtggagac
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74601 aacagactgt acccttttgc ccatgtttta gtgtaaaact ctgtgactag
74651 gatcaaacag atgacttgcc aaaatgttag cgaagtgagg caaaatcaaa
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74851 tagatgcaaa atgaaaaaat acatattttc tgaggtaaaa aggactctag
74901 acaaaaaagt gataaataaa ctcgacccaa aagattgttc taataacaaa
74951 taagttgatg agtgtgcttc tcacttgata ggaacaattt tttttttat
75001 gttttattct ggctttattt ctgtctgttt aactaggaaa atctaaagct
75051 gaaatcattc ccttgcagcc acttccactg gttacgttgg ttcaatttaa
75101 caataggagc tctgtcaaga tcttttgatg aggcagcatt acttcttttc
75151 caagatgata cgtattggcc gggcacggtg gctcacgcct gtaatcccag
75201 cactttggga ggccgaggcg ggcggatcac gagatccaga gatcgagacc
75251 atcctggcta acatggtgaa accccatctc tactaaaaat gcaaaaaatt

FIG. 5 CONT'D

75301 agccgggcgt ggtggcagct actcagctac tccacgggct gaggcaggag
75351 aatggcatga acccgggagg cggagcttgc agtgagccga gatagtgcca
75401 ctgcactcca gcctgggcga cagagtgaga ctgtctcaaa tcaatcaatc
75451 aatcaatcaa tcagtccagc ctgggcgaca gagtgagact ctgtctcaaa
75501 taaataaata aacaaactta ttgaaagtat tcagaaatca ataataatat
75551 atgcttcgca tttgaggagc ataaaactca agaaattttg gtagggaggg
75601 gaaagtgttc acaaattcaa ggtcaattta aagcttattt taaaagccaa
75651 tatagatagg tttttcatat tttatataca tccttaggta catattttgt
75701 aaagcagaga tttttgtatt cctttataaa tgtccttcta gtttaggaga
75751 tggttggtta actcagaaat ggaattccat aaaatcttct ctgttccttc
75801 ttttttagat agtttacaaa ttattctccg taatctcaaa cattcatact
75851 caaaaccgaa actgaaactt gactagttaa tatcgctttg gtctgatcct
75901 taaagtgatt tcagatatgc tgtattgggg gataagtata gggttaaatc
75951 cctttggaag gggatgggga atagggacac cctctcctta gcccaagctc
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76051 acttcagagg cttttgctgt gaaaacagca tagactgttt tgtgccttat
76101 gcagaactga ctttttttt taaccttagt ctgttttatc tgatattgtt
76151 ataccagctt tgattagtat ttgtttaagt tgagaaactt taggttcaat
76201 agtaacacaa aaccttcact caaagagatc cactggaagt gcttagaacc
76251 ccagtcagta accagtctgc agggcttaat tcaggctcag ccagtccctg
76301 ctctgtggaa tattgctaag gtagctcaag ctcactactc tgacatcaag
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76751 ataatgtatc taatctttca ctagaacaaa ttaatgataa ttacatgctt
76801 aattgtttga ttagtagagc ctaggtttag aaaatttctg gcctaaagtc
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76951 aattcaagta taatccataa tatgattatt aggtgttata actaataagt
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77051 aaaaacatga aaattgttgg tctccactgt tctagtgaag atttacatgc
77101 cgggcagatt gctcttatta aacatgggtc aaggctgaaa aactgtgatc
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77651 aatcccagct actcagaagg ctgaggcagg agaattgctc aagcccggga
77701 gttcaaggct gtagtgagct atgattgctc cactgcactc cagcctgagt
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77851 ggattctggt ctcattcatg tctactaacc tattaaatga ccctcagtgt
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77951 atgtactaga tatttatcac ctgtataata gtccagcaca tgtgttgcta
78001 aacagcaggc agctttctcc atttggttga ttcctgggct aggcatcttc
78051 tgtctcattg ctgttgtcac ctctagggct ttgagtcctc tgtatccaga
78101 ggcagactga gaaagaatga gtagagaggg tgaacctgct tcttaaaaac
78151 cctgacctgg aagtcacata catcatttct gttctcatcc attgtgggaa

FIG. 5 CONT'D

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78201 ctgttgttcc cactgggcag ctgtctttca gtgactacta tacactttgg
78251 aaggaggaac acaaattttt aatgtatagc catccgtcca caccaggcta
78301 ttcactaaac ctccttgtgc ttatgattct gttttgcacc caggtatatg
78351 ccgatcattc tttcatttaa aaaatatgca tcttgttgca taggcatcat
78401 ggtagatcaa aaaacaaaaa aaactaatgt ggttcctaat ctttactctc
78451 gaggtgttat ttgggggcca aaataacaat ttaatatgat gcattatcta
78501 gtaccaaatc agcgatacag gttgtaagtg atatttggtc tcagaggaga
78551 aatagtgatc cctgcagatt tccatattat gaaaggctgg ggcttaagct
78601 tgatcttgat gcgtcatagg tagaggaaga ggaacacatt cctggtcagg
78651 gggaacagtg tatatggagt catcaagttg taagaagcaa agttctaggg
78701 gtcagtattt gaaatggaga attattcttg gagaacagtg gcagatgaat
78751 tatagtgata gtggagaact ttgaagaact gtagagcctt tggactttat
78801 cttataaaac agagttccta ggcctgttgt gagaaagagc tatttttatt
78851 tacagcaaag ccttaagagt aatgatcaga tctatgtcaa ggtcagtgcc
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78951 aacctctcgg cctgcaacaa gtatttcgag caggtaggta tctgtggtag
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79051 ggtatgaaag tggtggtggc atttttttca ccttttccca attaaccagg
79101 cagattggac atgcatttca tcactcatgt tcaactgacc tacagttcct
79151 gtttgtaggt aatgtggaga cattgaagat tcttgagaaa gatgtaacgt
79201 gattgaaatt tttgttgtta ttgctgttat tgaattggag cagggagaga
79251 ttagagattg ggagcttgat tagtagacta ttgcattagg caaggtccaa
79301 atagggttca gatgatgaca ttgatacaga aatgaaagaa tgtgaaagaa
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79501 tcatcactgc ttgatgtctt aagacatttc atcctgacaa aaaagataat
79551 gaagtatgga aagtcaggaa ggacctacag tggaaatgct tgtgtattgg
79601 tgttggacaa tatataaaca aaattgctat gttagattag gcttatgtat
79651 tatatttagt tatcttagga aggggggcatg gttgaacccc atgctatagc
79701 tagattactt tagttagaat tgctattacc tcagttataa ggcaaagatt
79751 gttgtagcac agtggttctc caagtgtggt ctgtggactc ctgatggtcc
79801 acgaggtcaa tgttattttc ataataatac taccttcagg ttgggcatgg
79851 tggctcatgc ctctagtccc aacattttgt gaggctgagg caagtggatt
79901 gcttgagccc aggagtttga gaccagtcag ggcaatatgg agaaacccca
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80051 gcaaaggttg cggtgagctg tgatcgtgcc tcaccaatgc actccagcct
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80151 ttcatactaa tggtaccaaa acaatgatag gtaaaactac tgtttccgta
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80601 taagaaggtc cttgatgaaa cagtaaaaag tatcaatttt attaaatccc
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80701 gtataaagtg cttttgctac agacctaagg tatgaagatg gctttaagga
80751 aaaccatgta tgtgattgtt tgagttgcag actgacttat ctacttttt
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80851 gatattttct tgaaaatata gtgaacctgt cactttcaga taaacaactg
80901 acagtatttg ttgccagtga taaaatttga gctatcaagt gaaaattaga
80951 attttggaaa actcatattc tctattatga gcctgacagc atctcaccac
81001 ttagactctt ttgatgggat tggtggtgat attaatgaac gggatttttt
81051 ttaatattgt aaaatcagta aatcattgtt ttccggatga ccaatgcaca
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FIG. 5 CONT'D

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81101 atgctacaaa atcatgcatg agtaaaagcc attctaagtg caagacagac
81151 caacggactt taacgtaaca gttcaaaaag tttgttgata tggtttcaga
81201 ttctacattg taactaacct ttaagaaact atcccttgtc aaatttttat
81251 gtagtgccaa agaagaatat tcacaagtat ctgaaatggc tgttaaaata
81301 ctccttttc aaccacatat ctatatgagg ccagataatt ttcgtatact
81351 tcaatgaaaa caacatattg caacagattg aaaacagaag caaatttgag
81401 catccagttg tcttctatta agccaaattt tttttttac aaagcaagtt
81451 actttattag aattttaaac aatgtataag tgatggaatc attctaacaa
81501 cacatctatt cactgcttac aattccaacc aatttcagtt ctctgatatc
81551 taatgacaag agcgaagacc tgttaaagtt ccttccacca gtaaaaccca
81601 cagctcaaag ttgtgggagt gattaactga gccataggcc ttcattcaca
81651 tgtttaccac attaaaatac cacacagtgt tttcttataa ggtcaaccac
81701 ctgggaacta attaacatta gcattaagat ttaaataaac tgttaggcac
81751 agggctagat caggcattat aaaaccctgt ggttccctag tcaagtcaca
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81901 gtttcctaac tgtgatggtg ctttaggcaa cttcggagaa tgaagataga
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82001 aatttccatg ccctgatttc tcttaactct ataaacacat gtaaatcttc
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82101 attgatagca tagtacaggt caggcgcagt ggcccacacc tgcaatccca
82151 acattgtgag gccagtggga ggaccacctc aggtcaggag cccaagacca
82201 gcctgggcaa catagcgaga ccccatctct accaaaaaaa aaaaaaaaaa
82251 aagagctggg tgtggtggtg cacacctgca atcacagcca atctggaggc
82301 tgaggcagga ggattggtag agtatgggag ttagaagtta cagtgagcta
82351 tgatgtcacc actgcactcc agcttgggtg acagactggt ctctatttaa
82401 aaaaaaaaaa aaaggtatag tgatacacta ttaattccat gtatgctaat
82451 atgagatagc atccatataa actactatca agtctttatg tgccagctac
82501 tgtaataagt cttttcaagt ttaactcact gaattcataa tgaattatga
82551 ggtagctacc attatttccc ccattttaca aatagggaaa ctgaggctgg
82601 gagacattat ttaacttgcc caagtttcta aagccagtta ctggcagaac
82651 tggtatttga acctacttaa tctgattcta gagcctgtgc tatataaact
82701 cttacccact atgctatgct attcattagt atccatttaa caattactac
82751 tattgcaata gctgcaatta tcactcctat agtacagggg aatctatcaa
82801 agaaacactc agctttcact tatctatttc tgaaaacatt ttttattaaa
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82951 taaccagaac acaataaatg tgcaaaaatt agaatggaat ttacagagtt
83001 tataggccac tgaagcccat ccatgaaacc cttcatgaaa ctcattcatg
83051 aggccaaagg gcagaacaaa ccctccctga aaatctcaat tgggctttta
83101 gaatttaaat ttaaatgtct atacgaattc tgctgctcag ttttgtcctt
83151 ccactcttct taattttcca gtgatattgc tgataactat tgtttttcct
83201 tttactatta atccaaatat taaagatatt tgtaaaaatt taaaacaatc
83251 tcattcttac aaatttttgt tttggaaaat agtttttttc ataaagctaa
83301 tgttatttat attaatgtat aacagattat tgttatttt aatgaattaa
83351 taaatatttt aaattttgtt ttaattttca agtacagtaa atatcagtag
83401 atatattcca cataaataaa agctttttgg agtcctcaat aatttttaag
83451 agtgttaagg aatcctgaga tcaaaaaatt tgagaaactc tgctttagca
83501 tttgccacta atacacaaat gtctgtctaa agaggatttt tcccctcttg
83551 aatcaggatt actggaagca gctaagatgc ctagatgaaa ggtttaccat
83601 cactgctggt taggaaatgg attatgagaa ctcgaacaga gggaaggtga
83651 aatgcaaccg gaggaaacac tctgatatga ggtttgaggc cttcaaaatt
83701 gctttgcagc ataagccaca gtgagtcagg agtaccaggg agtggataga
83751 atgtttattt gtttaactga gacttttag ttcatcaatt attttgaagg
83801 gtagaacact ctgtgggctc tctttctatt tgcttctggg tacaatcaca
83851 aaaaaaaaat ctctcctagc tgaaattaca tgcagtacta gcaaaggggt
83901 ctctttgtta taaactgttc attaattgac gaacatttgt gtacttaact
83951 atgtataagg catctcatcg ttcaatttca aatacaaatt aaaatatttt
```

FIG. 5 CONT'D

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84001 ttcacatttg ttatcctgtt atgttttctc ttttacaaat tgtctgttcg
84051 tatctttttg tctctcttta ggccttattc ttgtcaattc atatgtgctc
84101 taatgaattg aaatattttc tgtatattaa acattactaa cctttcctct
84151 gtcacactga ttgaaaaatg atctatttag tttgttgttt tgtctttaat
84201 tttgtaagct ttaaaaagtt aatattgccc ttcagacacc atcccaacat
84251 cacataagaa ttttttcatg ttataaattc tttgtggaca tatttgataa
84301 ctgttttatt atgaggagga ccataattaa ttcaaccatt cccctatttt
84351 ggtcatttag gtttttgggt ttgggttttt tgtttgttta acgtctttgc
84401 ttgctatttt aaagaatgct gcactaaatg tgcatgcatg agatttcttc
84451 tctgtattta gaatattttc ctagaatgga ttctcagaag aattctcagt
84501 ctgtggagag gaacattttt aatgcatgga agaggtattt attccagata
84551 gaaaactagg caatattagt tgttccctgt aagattttaa aaaacagcca
84601 tggcaccatg gaggactctt cgagtatata gttttagcgc tgggctttgg
84651 gatcacactt cacaacacca gtaactccac aaatgcattc ctagaggctc
84701 tgtgagaggc tgggtaactt tttcttgaaa aggccagata ataaatattt
84751 tagactttgc aggccgtgtg gtgtctgtca cagctactca actctgccac
84801 acgaaagcac ccaaagacta tataagtgaa tgggtgtgtc tgtgtttcaa
84851 taaaggttta tttatggata ctgaaatttg aatttctgac agttcgatgt
84901 gtcacaaaat gttcttttga tttgtccaac tattttaaaa tgtaaaaccc
84951 attcttaacc tgtgagctgt acaaagactg gcagtggact ggatttggcc
85001 tgtgggtggt agtttgccaa ccctcaggct atataatagg tgacttggta
85051 atagacattt attatattga gggttctaga tatactgcaa tgatagggtg
85101 gattttataa tgaaaaccct aaattcagca tgtatctcat aattaccttt
85151 cgtattttgt atttcagctg gagttaaccg aatttcatac tggcctgctg
85201 atccagaaat aagtttgctt acggaggctt ctagttctga agatgcaaag
85251 ttagatgcca aagcagtgga aagattgaag tcaaacagtc gggcccatgt
85301 gtgtgtctta cttcaacctt tggtgtgtta tatggtgcag tttgtagagg
85351 agacctctta caaatgtgac tttattcaaa aaattacaaa aacattgccg
85401 gatgctaaca ctgactttta ttatgaatgt aaacaagaaa gaataaaaga
85451 atatgaaatg ttatttttgg tttcaaatga agaaatgcat aagcaaatac
85501 tgatgactat aggtttggag aacctgtgtg aaaatccata ctttagcaat
85551 ctaaggcaaa acatgaaaga ccttatccta cttttggcca cagtagcttc
85601 cagtgtgccg aactttaaac acttcggatt ttaccgtagc aatccagaac
85651 agattaatga aattcacaat caaagtttgc cacaggaaat tgcaaggcac
85701 tgcatggttc aggccaggtt attggcatat cgaactggtg agttacatag
85751 atcgtaaatt ggggctgatt ggttgggttg tatttgtctc tgaagtgttc
85801 gtctcattta tggtagagtt catttactca tagttactta agttttgctg
85851 ttcatacaat atagagaagt tagtgagacc cttgagtaga caactctttc
85901 tcccagcagt tttgggattc cttgtagcct tatattcagt accacatttc
85951 tacatcaggc cctcattaat ctaggccctt ctttctgctt cttgctttta
86001 tgatttcact gttccttgag ccctccacta aaggtaggac aagaagagaa
86051 aggagaggcc cagtgcagtg gttcatgcct gtaattgcaa cactttagaa
86101 ggctgagaca ggaggatcgc ttgagctcag gagttcaaga ccagcgtggg
86151 caacatagca agacctcgac tctaacaaaa aaattagctg ggcatggtgg
86201 tgtctggtgg tgcgtgccta tagtcccggc tacttgggag gctaaagcag
86251 gaagattgct tgagcccagt agtttggggc tgcagtgagc tacaatagca
86301 ccactgtact ccagctccag agacacagca agactctatc tccaaaaaaa
86351 gaaaaaggag aaaaccaaaa ttattcattt ttgttaactc ttcaatattt
86401 tgatgtactg aatatttaac aatttttaaa aaatctttac aataacatta
86451 attcaaaata actaatagaa tcaaggtaaa ggaatggtga ttattgcaga
86501 ttcttccagt tgctggtatg tcttcaatca gcaagttgag aaacattttt
86551 actgtattgt attaagttgt atatttggaa aaggaaaata ttacttggga
86601 tttttctttg ttatgataaa agatggcatc tgtatttcca aacatggaac
86651 aatattatca catcttacct gatgtaagat ttctcaaagt agaatcatga
86701 tcacttttta aaatgcatct ttgtgataaa ggggaaaaaa catagacagg
86751 aggagcagta gagtaagatt tgtttgggga gtgtactgta gtaggattta
86801 aaaattatcc caagaaagaa gagaaagtca tcagaaaagg tctctacaga
86851 tgctgctggt ctgcagtagt caacagaagg gaggttctca gctggcagca
```

FIG. 5 CONT'D

86901 aatagaatcg ccattgaaac ttttataaaa agtacagatg ctatactttt
86951 tacttttata aaaagtacag atgctatact ttttactttt ataaaaagta
87001 cagatgctat acttttttact tttataaaaa gtacaaaccc caacccagac
87051 ctattaaacc aagtccctaa caaaatatgg ccaagttcta tgtttttaaa
87101 agttccacaa ggtgttctga tgttcgcaga gttaataatt gctcaattct
87151 tcttaaagat tttgattctg taggcacaca ttatatgacc ccaaacaatt
87201 gcattgtgta aaagtctggt ttcatgtaat tatattctat tgtgggttat
87251 atatttgttt ctttgccaac tccagctttg taaagaattt ttctgtaaac
87301 cattcaaaaa gatagaaaac ataaatggga acagctgttg tagctataat
87351 tcactaatta cccttcacta attagaattc agcagaaccc tgcctgtgtt
87401 ccagagtaag agggcgatgt gaatctgcta ttttactgga tcttagtacc
87451 tcttgcttct catagaacac cttatcatac cagctgtgat tccagtgttt
87501 aaagacgcag tatgtataca tttgcattta tattgtttat tagatactct
87551 acactactgt atagttataa gtatatccac tattgtgcag aattttgtac
87601 ataaagccct gcttacgcat ttgatggtca atttaaaaga tttttcaagg
87651 ttaattgttg gtgatttttt ttttacatgg aactcaaatc ctgaataggg
87701 tgcaactcct ctgtcactca ctctactcca ctgtgcactc ttccagggaa
87751 gaaaccatgt cttaatcatt ttttccttag cactaaacac aatgtgcgtt
87801 gaatggataa aacaaatctt tttatccaaa gataaagggt ccacaatccc
87851 ttatgcaaaa cttttggagc caaatgtaaa ggaattcaga atttttccga
87901 ttttatttta tttttttttga gacagggttt tactctgttg cccaggctga
87951 gtgcagtggc actcatggct cactgcagcc ctcaacctct cagcctcaag
88001 caatcctccc acatcgacct cctgagtagc ttgtactaca ggtgaaccac
88051 caccatgtcc agccaatttt taatttttg tagatatgtc tcactgtgtt
88101 gcccaagctg gtctcgaact ccttggctta agcaatcttc ctgcctcagc
88151 ctcccaaagt gctgggatta caggcatgag ccatcatgcc caatccagat
88201 tttaaaaagg taatatggta catatactgt tatataggac tcccagtggc
88251 atctgggaca gtaccctgta atcacattaa tacatacaga gtgaaaaaag
88301 taggaatatt tgcactaaga ataattgagg gctataaata actcaatttg
88351 ggtcagattt ggccgcaaaa taagtgcatc aaacttcaaa aaaactggat
88401 gtaaaagatt tcagatcagg gactctggac ctgtaattct tccttaatga
88451 taaataataa caatgacagt ttatggaaca cctactatgt gtcaagcact
88501 gagcttggtg atttatatat gtatctcatt taacattgag ggtacttcag
88551 taaggtggat atccctatga tacagtgcgc ttccaattaa gcttttaatt
88601 tcacattatt cagtttggtt tgatgacctc atttctccct aattaataga
88651 tgaagatacc atttcattta aaaatgtaca tatgattaaa atgaattcca
88701 aaacctctaa caacagagtt ctaaaatgaa ttgaaagtag ttgcttataa
88751 ttgctttttg aatgatgaat aaagaggatc catagagatg tcatgaaaag
88801 tatgttacta gccaggtgcg gtggctcccg cctgtaatac cagcactggg
88851 agactgaggc aggaggactg cttgaggcca ggagttccaa aagtatgttt
88901 ctagaatacc cgaaggtagc aaaaaagtgg aaaaaaaaag tgtttagact
88951 cttggggaaa aaagagcagg aggaaggcat caaaaatctt atctatctgc
89001 tttaagtact gagttgtgat ctcttcgtgt cttgctttct catcagatta
89051 ggtgttttcc aaagctaagg attatgcctt cctcctgggc cacagtactg
89101 ataatgagag taggctggag taatcaagaa agttaacttt taaaacagaa
89151 ctcagtggtt ctcagatatg agtatgcctg agaatcaagg gggagctcag
89201 gagtaatgca gattcctaag ccttgcctgc ctctctcaga gaggttgatt
89251 taggggactt ccatggaagc caggagttgc ctctttttt ttttttttaa
89301 attttaaaaa caagcatcca gtaattttga tgcaagagga ctgtggagca
89351 ccttggacac tgacatgacc acaggattgg gagctaaaat aaccacacct
89401 gtgttctaga acaaaaagtt cccctctgat tttcagtgat caaagagccc
89451 caggaatttg actcaatgat tgtaagttga cctttccttc aaagttgtac
89501 agagaaaacc ctgtgaatga ccagatcata gggagcaatt tctgtaaaaa
89551 ttatagacat gaaaagattt ttgagaaatt acctcatctg tcaccagcct
89601 tgatgctgag tgacatcaaa tctgttttat atggatgaaa atttattcct
89651 attttaaaag acaagtagta aagaatattc tcttgatgta accaacctta
89701 gctaggcagc agagctgcat gctgatggaa aaatcacatt ttttttttcc
89751 tcctaacaag gtttagtctg tccccaggct gaaacagaaa aagtggcttc

FIG. 5 CONT'D

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89801 tgtgactaag aaacataaca ttaaaaatat gcagtgttga tggtagaaaa
89851 gggggctttt aatatggaga atttttattc tggtttttta ttttttcatt
89901 ttagatttat gcataaatta aataaaactt taaagatttt ggttttgcag
89951 gcaaatataa tcttatgttt ataacttctg ccacttacct tagaaatgag
90001 cataaagcca ttgatttgta ttcttgccca ctcatgttaa actctaaagg
90051 tctaggaagg aacccaattt tgtttacacc aaaatccctt ttccctctac
90101 tctgtagaag gaagtcatct cgtgcactct gctgttcagc ctcatttatt
90151 tccttcagag cacagcacat aaagtactgt ttgtttcctt gttgctgttc
90201 tccttcacca tccaactgta agtcgtatga ggaagggact acagtttccc
90251 tcaccactgc atcctcagtt ctcacagtac ttggaacata agaggcattc
90301 aataaatgga aatttttgtc aaggatttct ttttcttttt ttttttttt
90351 tttgagatgg agttctgctc tgtcccccag gctggagtga agtggtacga
90401 tctcaactca ctgcaacctc cgcctcccag gtttaagcaa ttctcctgcc
90451 tcagcctccc aggtagctgg gattacaggc atgcaccacc acacctggct
90501 aatttttgta tttttagtag agacggggtt tcaccatgtt ggccaggctg
90551 tgtcaaggaa ttctttatgt cacggtgcaa ggtggaggaa aggccaagca
90601 ggttggatct ggagggctaa gttttagtct atttctttgc ctgtttctgc
90651 atctagaaat ggaaatttta tctgctttac ctttagggta aaaatgagat
90701 catgaataaa catgtttaac ataaattata caaatgcttt gtggtataat
90751 tttgaaaacc agggtttgct tgaatttgag atgggaaatt ttattagagt
90801 atcataactg ttttaaagtt aacctcttaa taagacattc attctagttt
90851 ttaatgcaat tgtggcacaa attttctttg tacctttact ggaaagtagg
90901 tatttaaaaa tgttatcatt ggagggattc acttttagga aattgtaggg
90951 tgaaaccacg gtttcagtta atcctcccca aaatgaaaat gccttagggt
91001 aagttcacag ataattgtta ttttctacgt gtaaatgtgc cacttaacta
91051 ccttagtccc ttattaagat tttgataaat actatggttt tcataattag
91101 tgtaatttgt cttagaaatt tgaaactcaa cattgtatag aaggaaaaag
91151 taaatcctta atatgtagaa tttctatttt gtttttaat tttctgtttc
91201 agattaatgg ttttaagaag tacagcttta cttttgcaaa ggttttggtt
91251 ctacagggaa attataatct tatgtttgtt tataacttct gctatttgat
91301 ttagaaatgg gcaagatgtc attaacttgc attctttttc cctcaaggta
91351 aactgaaggt caaagaaagg acaacatttt gtttaaatca gaattctctt
91401 catgtacttt ctagcaatag atagatagat ccataaagat ttgtttatgt
91451 tcgtatgaga agtttgaact tttttcttag caagaacatt ttcataagat
91501 atattttcca tgattagagt ataaataatg ctgggaaaag acaaatttgg
91551 ttgttgtgaa cagttattac acaaaatcca ttagttctga aacctttatt
91601 aaatttttatc acctatcaga agtagttgtt tagaaaccgg cttgttaatg
91651 gagaatcaat gaagttgcac ttagttctgg ctacagcttt gagggacctg
91701 actgtggaca ctgccattta gtggcctcca catacgtatg tgtgactgag
91751 ttggtagtga ctctctctag ttatttggta cctagctccc atattccata
91801 cttaaaagtg tttattttaa tacttttctg taattagtga agatacaagg
91851 attgctgcta catttatgaa gtatgtttca atacaagttt ttattacttt
91901 tggaaaaata tatttctaaa actaacatat cataattttt actgagttaa
91951 atgccatata tctttcagag gatcataaaa caggagttgg ggcagtcatt
92001 tgggcagaag ggaaatctgt aagtatgaaa acaattcttt aaatatttaa
92051 cctggatttt gtttaaacat agttcagtct tcggtgcatt acaggttact
92101 gactgccaag gcgggcagat cacaaggtca ggagattgag accatcctgg
92151 ctaacacaat gaaaccccat ctctactaaa aaaaaaaaaa atacaaaaat
92201 tagctgggcg tggtggcggg tgcctgtagt cccagctact cgggaggctg
92251 agacaggaga atggtgtgaa cccgggaggc cgagcttgct gtgagcagag
92301 atcgtgccac tgcactccag cctgggtgac agagcgagac tccgtctcaa
92351 aaaaaaaaaa atattaatat ttttgtaatg gtgcatttat gaagatctat
92401 aaagatttgc tcatccctca acagttttct agatagacgc attcattcag
92451 caaacatttg ttaaacactc tctacaggtt aggcactgtg ccacagtgaa
92501 tgctggggat taaagatcac attttatggc ctcatagttt agtgatggag
92551 atgtagaagt aaaatataac tgatatgtaa gtgtaattat aactgatatc
92601 atgagaacat agaggaggaa cctttgcttg gaaaaataag taaatactgt
92651 tggtgaatat tattaatgtt actaatataa tattcttgaa gaataagata
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FIG. 5 CONT'D

92701 atttcttcag acagagcaag tcaataggac caggaggata acatgaatat
92751 tcttggtgaa cattcttttt ttttttttt tgagacagag tccccctctg
92801 tcacccaggc tggagtgcag tggtgcaatc ttggctcact gcaacctctg
92851 cctcctggat tcaagtgatt ctcatgcctc agcctcttga atagctggga
92901 ctataggcat gtaccaccac acctggctca tttttgtatt tttagtagag
92951 atgggatttt gccatgttga ccaggctggt cttgaactcc tggcctcaag
93001 cagtccaccc tcttctgcct cccaaagtgc tgggatcaca ggtgtgagcc
93051 accatgcctg ccctgaatat tcttaatatt aatattaata atgttaaaat
93101 tcttgaagat taggaggata tcatcaggca gagcaagtta atgggaccag
93151 gagaataaca cacagagact ggggtgagag agagaatatg ggaaaacgca
93201 tttgatttgg cacatagagt aagcaacaaa gtggacggga ccatgaagaa
93251 ctctatattc catgtaaaga ttttggactt tatcctggca gtgacatact
93301 atagcacagc actaaccagt agagagaaaa ggcaaggctc aaactgaatt
93351 ttaaattttc taggtgttat atatatatat atatatatat atatatatat
93401 atatagagag agagagagag agagagagag agagagagag agagagagag
93451 agagagagag agagagagag agagtctcac tctgttgcca ggctggagtg
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93601 cacacccagc taatttttgt gtttttagta gagatggggt ttcaccatgt
93651 tgtccagaat ggtctcaatc tcttgacttc gtgatccacc tgccttggcc
93701 tcccaaagtg ctgggattac aggtgtgaac cactgcaacc agctggagcc
93751 atgtttttaa aaggaagaca gataaattaa ttttaagaaa atatttaatc
93801 atgtaatcaa taaaaaatta ttgatgaaat attctgcatt taaaaaatat
93851 taaatcttca aaattctatg tgtattttac acctgcagca cctctcaatc
93901 tagactaacc acatgtggct agtggcgact gtatgggaca gtgcattcca
93951 agaatgttct aagtggggaa atgatttgat cagatttgca ttataaatag
94001 aatgaggtag ggctagacag aaaataagga gattaataaa aagagatgag
94051 gacttggaga tgtggggatg ggttaggagg ctagaatcaa gagatattta
94101 gtaactatat agctgactga aaggtgagcc tacattttgc ctcagggact
94151 tcacagaaag taatctgaca atttgctttg atgtttcaca aactcctcaa
94201 gttcactcat ccagtatctt ccctgctaac ctcctccctc atcagtggtc
94251 accatcttgt ctgttactgt acacatacaa tcacctagca caatggattc
94301 caccttcaaa atacctcttg actctactta cctgtacccc aactgttaac
94351 tcctactaga atactaggct cctctgccag aaattcctca gcactctgta
94401 caacttgtct gtgacattca tcacagttaa agttatctgt tcaatttctt
94451 accctcccca gactagaagg ctcatgaggg tagggactct ctgtcttgtt
94501 tacagttgta ttccagcacc tagcataggt ctaactggtg gttggaactc
94551 tcatttgtgt gtacatgaat gctcagcaga cttttggctt aacatctggt
94601 tgttaatgat tttgtggaga atgtcagttt ctagttatct ctagagtagg
94651 ccagcaggca gcacggtgaa atggaaagac acatggctta gagtcaagta
94701 atctgggctt gaattctggc tatgttactt actcattttg tgaccctaga
94751 caattaatca ctcttgtcct cagtttcctt atctgtaaaa cagtaatatt
94801 aatagtatca ctctttaggt tgtttcaaga attgatcaaa tgaaatgatc
94851 catgtaaaac tcagtatggc tgggtgcagt ggctcatgcc tgtaatccag
94901 cactttggga ggcgggggtg ggaggattcc ttgagcccag gagtccaaga
94951 caatcctggg catcatggtg agaccccgtt gctacaaaaa aagaaaaaat
95001 tagccaggca tagtgacata cgcctgtggt cccagctact tgggaggctg
95051 agatgggagg atgacttgag cccaggaagt caaacctggg tgacagagtg
95101 agaccctgtc tctaaataaa taaataaata aataactcag catgatgttt
95151 gacatttagt aaatgttcaa acagatttat taatgagata atattttgtt
95201 tgcaggcttt tgttggctca ctattacatg atttttatga agctgctaca
95251 gtaatgagtc tgttgatatt atcatgagta attataatat attgaaattt
95301 aatgagtttt atagcatatt ccaaaaaact attacacaca cattactaat
95351 atttcattct aataattgat aaagcattca tattaactac tatttctctt
95401 taaaagagaa ataagagcca ttgaagtaag aagttctata ataatatgca
95451 tataatagag gcttaataaa tactgaagat gaaaatgcat tttttatttt
95501 ccaactaaat cacaatagca cattttttagc ccaacagaaa ttttctgttt
95551 aaagtattta aaagtttttg acttgctaac cagtagcatg gcacagagca

FIG. 5 CONT'D

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95601 cataagaaat taacaatcac ttgttgagta cctgctatgt acagaatact
95651 cgaacatgtt gaagggatgg aaaagaaata tataacatgg tttctgctct
95701 ccaggatcta taatttattt gggaagtaat atctgaatca agtgaaataa
95751 tttgttagtt aagtaagata gtatttaatt aattgcaaaa aacaaggact
95801 tccttgagat tatagattag agaggtggtt ggccttcttg gaatttagct
95851 ttgacaagat cacactgcag taggagtatc tggtattata ttttttgata
95901 gctcagttta ctgtagaaaa ttgaatgaat attcattata caaagtatga
95951 tagcaagctt caaaaataca ttgcaaagtg tcttttcaga atgttgaaac
96001 taaccattgg tttgctcact ctcgtagaga agttgtgatg gaacaggtgc
96051 catgtacttt gtaggatgtg gttacaatgc ttttcctgtt ggatctgagt
96101 atgctgactt cccacacatg gatgacaagc agaaagacag agaaataagg
96151 aaattcagat acatcataca tgcggaacag aatgccttga catttaggta
96201 tgaaatcctt cttggtgtac ttttctttaa aatgtagcaa gggttggttg
96251 aaattaattt tcttataatt gtaatttatt tccttttttca aattccaaga
96301 aagtttcctt tcagaagtat aactttggta aagcttggtc ctcactgcca
96351 gacctgaagc tatgacctga cctgaggtca tcgcctcttc aggtcttccc
96401 aatttgttga gcatgtcttt ttttcccttg cctctctcca atatgaaact
96451 gctttaagtt tatcctttgg gatcttgctc agcctctcat atttctggat
96501 gttaaggctc ctttgttttc taaatctgga gcacgcattt attaatacag
96551 ttacacgcca cagaaagaca ttttgagcaa cgatggacta catgcacaac
96601 gtgttcccat aagattataa cagagctgaa aaattcctga gtgaagtagc
96651 cattgtaaca tcacacgtta ccttttttat gttcagatac gcaaatactt
96701 accattgtgt tacaatggcc tgcagtattc agaataggga tttataatga
96751 accaaattgc ttcaaaagag cttttgttag tgattatacc tgttaattta
96801 catcattttc acaaacactt ctcagccttt accattaagg ttaagggatt
96851 aaaaaactgt gtaagacatg actcctgtcc ttggagagct tctaatgcaa
96901 taggggatat gagacggcat ccacctcgtg ctgtggattc tgtgggaggg
96951 gcaaatgtaa agtgctgcgg acattctgga gctgctatgg acaaatggga
97001 gagtgcaagg gaaaggcttt agggaagaac tggcatctga actgagcttt
97051 aaaggattcc tagactgggg caattggaag ggaagggaag accattcttg
97101 cttctagcat aagcaacggt ctagaagtag gaaaatccgt ggtgtgttta
97151 ggagcatgaa tattccagtt aggttggaat gtggacacaa gggaaagaca
97201 gctcacaagg acaggctggg actggactcg agaggacttt gagtttatgc
97251 tccatttggt aggcagcggg gaaatggaat ggcattgaca gagccatacg
97301 ctatagatta tgtaggtagt attgtttgaa cagactagat gcatagaatt
97351 ctgttgccct agtccaggtg aacgtaaata acagtctcaa caaggaagat
97401 ggatgtggaa ggctggcggt ggaggaattg aagatggctg gctgagagct
97451 acgtaagcct cagaacccgg aagtcagtcc ttgcagcccc agttgttagt
97501 cctaaactac cctcagcatg caaaatttca cccaaaattc cctctattct
97551 tttccttgtc ctcttcatta cagatttact tgcttcattt tgtacagagg
97601 tgtgaatata tcaaatagaa acttttcttt ttaaaattat cctatgatag
97651 ggaaggggta agggaactat aagtcaaaac agaacttaag tatttgatta
97701 ttcatttagt aaacatttat tgactatcca ctaggtacca gatagggctg
97751 tgtcatttgt ctaacaagat gagttagtgt ctaatcagac atgattagct
97801 cttaaggtat cagtttcaaa tctaattcca gtattctaaa caggtactta
97851 tttagaaagc attgggggtt ttttctctct ttctttggtg tctgtatctt
97901 cctgatttca tttatttgt aatctgaaac tgaacctctt acttagaatc
97951 aataaattat ttttagttat aataattgtc atgttcaggt tgtatcataa
98001 cacttttgtg ggtttacata ctttgaacat tcagtaattc agcaagtcta
98051 aggcttgatg atcattatta ataatgtcat aaatctgttt ttaaaacagc
98101 tcaattttag tgtttaaaga tttttctaaa aaataactta ccctttcaga
98151 aacgaccttt ctgatatttt ataatttttt ttgtaggtgt caagaaataa
98201 aaccagaaga aagaagcatg atttttgtga caaagtgccc atgtgatgag
98251 tgtgtacctt taattaaagg tgcaggcata aaacaaatct atgcaggaga
98301 tgtagatgtt ggaaaaaaga aggcagacat ctcttacatg aggttcgggg
98351 agcttgaagg tgttagcaaa tttacggtaa gtagatacac atttttttca
98401 ggtgtatttt gtattatgtt gttaggtacc ctgctgcaat attgtaagtt
98451 agtgattccc acccttttaa agagtttcaa caaattatta ttattattat
```

FIG. 5 CONT'D

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 98501 tattattatt attttattat tattatttga gacagagtct ctctctgttg
 98551 cctaggctgg agtgccagtg gctcgatctc ggctcactgc agactccgcc
 98601 tcctgggttc aagtgattct cctgtctcag ccccccgagt agctgggatt
 98651 acaggcgccg gccaccacgc ctggctaatt tttgtatttt tagtagagac
 98701 ggggtttcgc catgttgtcc gggctggtct caaactcctg agctcaggtg
 98751 atccgcccgc ctccgtctcc caaagtgctg ggattacagg cgtaagccac
 98801 cgcgcccggc cgagtttcaa caaattatta ttattattga gtttatttat
 98851 atgtgcaaac ccttacctaa ctgcaactgt tcagctaagg attcctgcct
 98901 tatgaattta catctctgta gagaattgag ccagtggatc ttttggtgcc
 98951 atctggtggc tgataaaaga aaaatctctg acccatctct tccctctcct
 99001 ttctggctta gagaggtgga tagaggtgaa aatacttcag cagtccccac
 99051 ccttttcggc accagtgacc ggttttgtgg aagacaattt ttccacagat
 99101 ggggttatgg ttttgggatg aaactattcc acctcagatc atcaggcaat
 99151 agattctcat aaggagcacg cagcctagat ccctcaggtg tgcagttcac
 99201 agtagggttc tgctcctatg agaatctaat tccaccgctc atctgacagg
 99251 aggtggagct caggcggtaa tgctcgctcg cctgcactca cttgctgccg
 99301 tgcggcccag ttcctaacag gccacggacc agtactggtt gctgccaaag
 99351 gtttgggatc ccctgcaata gtttaaaggt caccccccacc cccaaacaaa
 99401 gggaggtgca cacacacaaa cacacacatt tctcatgaga aaaatcagga
 99451 aaacaagaat atttgtttat ttatttatat atttattttg agatggagtt
 99501 tcactcattg cccaggctgg agtgcaatgg cgtgatctcg gctcactgca
 99551 aactcagcct cccgggttcc agcgattctc ctgccttgct acccccaccc
 99601 ccctcccccc acccccccagt atctgggatt acaggcgcac gccaccatgc
 99651 ccagctaatc ttttgtattt ttaataatag agacggggtt tcaccatgtt
 99701 ggccaggctg ctcttgaact cctgacctca ggtgatacac cggcctcggc
 99751 cacccaaagt gctgggatta taggcatgag ccaccacgac tggcccggga
 99801 aaaaaagaat ttcttatttg atagttccaa aaatgtactg aggtagttca
 99851 tggaaaacac aagaactttt aagtctttat acctcttcac tatttgggtt
 99901 ctggtttttg tgggtttttt ttttttttt tttgcttttg tttttgtttt
 99951 gagacagggt ctcactatct cacccaggct ggagtgcagt ggcgccatct
100001 tggcaatctc tgtctcctgg gctcaagcga tctgcctgcc tcagcctccc
100051 aaagtgctgg gacaagcatg agccactgtt ctcagcctat tttggttttc
100101 aaaaagcttt ttatttggaa aaaaccttaa gcatacagaa aagttataaa
100151 aacactacaa agaaattttt tcccagaagt tgttgacatg ataccagctc
100201 acccttttatt tcctcaaatg agaaataacc acataattac aaccataaaa
100251 atcaggaaat taacattgat acattactgc cactaatcca cagattccag
100301 tcaaggttca ttagctgccc aagaaatgtc ttatatagca ggtttcccca
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100701 ttgaatgagt taatgtaaca tttaactact agaatttgca gtgggaagaa
100751 aaatgatata aaagaaccgt ttatatattt cagctttaca ttcctgccat
100801 atacatcagt ttgagtccag gatacctgga acatacatat atatgattaa
100851 cttggacata taacatataa ttatatatgt atataatttt aaatatagaa
100901 acatactatc cagtgtctgt catgtgtata tgaagtatca taagttttta
100951 ccatttgtaa tattgtcatt tttttctaat tgtcttattt aaagtttatc
101001 acatttttaa atgaggggtt gttgacatgg cactgaaaga aggcagagat
101051 gggaaagata cctttttttgt aaaactcaat aaaagcttat atccaactag
101101 tcagagaaat ctctacttcc gtgtttttgt tttctgtctc ttcattcctc
101151 ctgaagagtg tgaataaata ggtttttcaa gttctcctca taaagattaa
101201 gtgacttaat cataaagatt aaggactatg agtgatgggt tatggagaat
101251 tctgaaatat cttgcttact ggtagatttt aatagctttt caattgtaaa
101301 gagaatgaag agatcagaag aacttaagaa agggcaagag aagcagaagg
101351 aggcaggaag actaagggga tcttcagggg cagagatggg aaaggaagca
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FIG. 5 CONT'D

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101401 cccagttggg ccagaccctc ccggaaatac cctcactcag gcacatgttc
101451 caaaggctgt tgttcatggt tgttctctgt tctacctcca gtgaagatga
101501 gctgtccatc ttctcatcct tctcatctgg cctggctgca aatattatgt
101551 agatggttag ctagatacct agttttgtaa atgcaagtaa ttaacatgaa
101601 ctagaatttg ttctaaatct gaatttcagt accaagatta tcaaaaatag
101651 tgtgtgtcaa taaatttggt atttgttttt aagattaaag caaattgaaa
101701 ttactttgaa agatttttg ctttcctttt tgataagtta ccatagacct
101751 tgagataagt agttctattc tgtggtgttg tcacaaacca ggctaggact
101801 gggcaacact gtttccaaga atagatttta tcaatctata tccatgtcca
101851 catactcagt tctttgtttt ctctttaata tgtgtggatt tttctctatt
101901 aggttatatt acttatttt attatgaaag tagtatatgc tcattgtaga
101951 agactaggaa aataaaaaag aacgtgtatt atctcacaac tcatagatac
102001 cacaattaac atgttgctgt attttctgcc actaaaagtt ctttaaaaaa
102051 tattttaaat aatttaacac aatattccaa cccataggcc taacttattt
102101 aaccattccc atgttgttgg acacctggat tgtttctaag tttttacagt
102151 tataagaagc ctttttatga atgtccttaa acataaattc aggattactt
102201 gtttttactt tgtctgccca aattaatagg ttttagtggt ttgacgtctt
102251 tcaaaaaatg cctaatttta aacatttttt tggtaatttc tcatgtagct
102301 tcctaccctt tctaagtctt ctctctttct tggtgctagc ctaaaccatc
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102651 tcctgcccca atattctatg taatatctgt gaatcttcag gcttccctat
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102751 tatgatataa aatgatatga tgcaggtaat agtttatgat ataacaacat
102801 taaaaggcaa ggtaatcttg gtcatatttt ctttttcttt tctttttttt
102851 ttctttttc ttttttttt ttgtgagaca gagtcttgct ctgtcttcca
102901 ggctggagtg cagtggtgca atctcggctc actgcaagct ccacctcccg
102951 ggttctcgcc attctcctgc ctcagcctct cgagtagctg ggactacagg
103001 caccggccac cacgcccagc taatttttg tatttttagt agagacgggg
103051 tttcaccttg ttagccagga tggtctctat ctgacctcgt gatccaccca
103101 cctcagcctc ccaaagtgct gggattacag gcgtgagcca ctgtgcatgg
103151 cctatcttgg tcatattttc attctttaat acctaggcct tttctagcta
103201 ttataagatt ctctaggacc tggagataga atacaatgcg atgttaattc
103251 catagtactg ggcatgggtt ctaattctat tgcctcctgt agttagggtg
103301 taacctgaga caagtcactc caatcctctg gtcttccact tacttccaat
103351 taaaatgaat gtaaagaatc ttcaacttct ctaagagtat tgattcggat
103401 cccagaagtt atatcattca ggatcactca gtgtggcgtt attagggctt
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103901 ggcagctgaa tccatcagga gcttatggtc ttgaacaaaa tgagcctgaa
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104151 attaataatt actcctatag aatctacagg ttaatacaaa taattatgca
104201 caaattgact ttataaatta aatgcatatg aaacagtaaa cagcaatgct
104251 cttctataac aaaacaaaag cttattgggg agtgagaaag gaaaaatatg
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FIG. 5 CONT'D

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104301 tataattagt acagatggat tgggaccaaa tgatgaggat atatacattc
104351 ttctagagta aacccacatt tgcccagatt ggaaatgttc tggtaacttg
104401 aataatctga ttaactaaga atcatcacag ctaccataat gaattactag
104451 tctttaaagc tttattattc gtatactact acagatattt tgaatgtaat
104501 ataatctttg agaagtctta caattcttta ggcacataat tttagatatg
104551 agtgctatat aatattattc taaaatagta actataggcc aggtgtggtc
104601 actcacgcct ataatcccag cactttggga ggccaaggca gggggatcac
104651 ttgaaatcag gagttcgaga tcagcttggc caacatggtg aaacctcgtc
104701 tccactaaaa atacaaaaaa tagccaggta tcatggcaca tgcctgtaat
104751 cccagctact tgggagtttg aggcaggaga atcacttgaa tccaggaggt
104801 ggagtttgca gtgagccgag atagcgccac tgcactccag cctgggcgac
104851 agggcaaaac tctgtctcta aaaataaaaa taaaacagta actatattat
104901 cgaattattt ggatttgaag taaatggaag ttttctgtaa gttttcttga
104951 taataacaat tttttaacct tgaaaaatca agaagtataa aggtcttaga
105001 ataatttttc tgtgaatata ttgattttca gtgttctgaa ttagctttat
105051 ttgattcaaa tagaaaatgt attgtttgca atttggaaaa aagtacatat
105101 ccactgcatc tttcttttta aaaatttatt agcaaaaaag gctgtatcta
105151 tctatctatc tatctatcta tctatctatc tatctatcgg tctgtctctc
105201 tgtctatcta tacatctgat taaataatgt acactcaatg acagtgtttg
105251 aaggggccaa tgaataattt cctatgttag ggaaaggata caaaaagcac
105301 gaatcataaa aaggttaatt tatctatgct acaatgaaga atatctgttc
105351 attaaaatat attactaggc caggtgcagt ggctcacacc tgtaatccca
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105601 tgcttgtacc actctactcc aaccttggca acagagtgag accctgcctt
105651 aaaaaaaaaa aaaaaaaaga tatcactaca agagtgcaaa ggcaagccat
105701 ggaatatgag aagatacttg ccacttataa tcaacaaagg gcttgtatct
105751 aggatttatt attcctagat tactaaggaa aaggaagaca tgctgtggtt
105801 aaagccccaa gattggaagg aggggacaaa aggaaggctt ctggtttgct
105851 ggcaatgttt tatttattga cccagatgat ggttacatat gtttgctttg
105901 tgacagttca actgaacagt taagtttatg tttatgcatt tttgaacaag
105951 tgtttgatct cagtaagcaa taccccattt ccttttaat tatatgatag
106001 ttttactgat atgtaattca tctatcataa atttgcttct ttagtagatt
106051 cacgaagttg tacaggcatc actacaacat aatttcagaa cattttcatt
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106301 aacaccagct ttgttgttag actggggctt gacttttggg taaatcagtc
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106701 aacttagttc acccaatcaa cacatgaaaa gatgattaaa cttattagta
106751 gtcagagaaa tgcaaattaa cattgcacgg aagtagcttt ttttttgctt
106801 ttttttttt ttttttttt ttttatgacg gagtctcact ctgtcgccca
106851 gtctggagtg cagtggcgtg atcctggctc actgcaacct ccacctccca
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107051 ccgccttggc ctccgaaagt gctgggatta ccggcatgag ccaccacgcc
107101 tggcctgaaa tagcattttt tataagcgta tgccctagag aaactcttgc
107151 atattgtata agagtcagag agacaaagaa tttgttgcta tattgttttt
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FIG. 5 CONT'D

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107201 aaaagcaaaa actggaaata acacaaatgt ttgttttggg tggttagata
107251 aaaatattat ggtgtattcc cacaatggac taccatatag cagtgaaaac
107301 aaatgaacta gagctacatt cttcaacatg gatgaatctt agaaatataa
107351 atgttgaatt taacaaagca aactacagaa ttatgatacc atttctgtat
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108501 aatattacaa atcaaaaagt aaattaaaaa aattcatcaa gctatacact
108551 ttatgtttag tttattgcat actttaaaca tgtatcattt attgtacaaa
108601 taaagctatt aaacacaaaa gccaggaaga ggttgaagcc atactctttt
108651 cccagcctgc ccagtcagat aagtccgtct tccttccagt ccccagattc
108701 tccctacccc acacacagtc cccttctccc ttaggaggta cattttattt
108751 cttccagtct agtaatagga cgtcccccca ccaaaaacat aaaacaaaaa
108801 gttttatgaa ttacttgccg tacactgttg agtgaattca gtttttggtt
108851 ttttttttt ttgagacagg gtctcgctgt gtcacccagg ctggaatgca
108901 gtggcacagt catggctcac tgcagacttg gcctctctgg gctcaaacag
108951 tcctcccacc tcaggctcct gagtagctgg gattacaggt gtgcgccaca
109001 acacctgttt aaaaaaaaaa aatttttttt gtagagatgg ggtctcccta
109051 tgctgcccaa gctggtcttg aactcttggg atcaagttat cctccctcct
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109251 aaagttcctt taacttaagc attgttttgc tcttacaaca tgtaaggctg
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109451 ctgcagggga acctcaagaa cttttcattg cacttctaaa attcagcctt
109501 gttcattcag aaaataagga tggattttgt gaataattga aaagattttt
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109601 tgtcttttag atttatgtgt gggttttcca taatgtagta gtgtgttatt
109651 ttattacacg aaatgaggga gcaataactt caaccaatgt aatcaccaac
109701 agggactgat ttctatttat cttgacttta tattagccaa tttgaaaggg
109751 tctgcttcac aagaggtcat gcctctgcag ggaatcacac acctttgag
109801 aaatattaat tcttttgaat tacaagagtg acagttagta aactgctcca
109851 gggaaataag tgtcatcttt taagagtcag tgtatagcaa accaaaagat
109901 cacatttata cccaaagctt tctagtaatc agaatttact taattagaat
109951 tgactcataa aaataaagtt agtggacttt gtctccattt ttaaagtata
110001 ttttgtaaat gttaattctg tggtcctgtt tatcacagac tttgggtagc
110051 aataggaaga gagtgttatt ctgagacagt gtcgctgctt gatatcactg
```

FIG. 5 CONT'D

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110101 actcttgaaa tcactaacag tgaacctcaa atttggttat gatgttaaca
110151 gagaagaaat atttgagtct ggaatattga aactagcttt cctagaattc
110201 cattaataaa tgctgctccc ccatatagtc ttcccttctg tataattaac
110251 ataggttgtc tcatggcttt gatcttcaaa aggaagagcc ttttaaaaac
110301 atttgccaac ctcaagaata aatactgaaa gtcttgaaag tatggtcatt
110351 tcagctattc cagattgctg tctgtgattt ctcacatttt tatttgctga
110401 gaaacattca gaaaattatt ccaaaaatga aggtacattt tctgttctct
110451 cctaggttag agaggggtgg cctggggtgc ttcatgagaa atgtcttcct
110501 ggatctgcgg tggtcaggtt tgcctctgct tttgttccct gcctttccgc
110551 cacatcacac ggcctcactg ggcttcctac cagtttctca gaattacacg
110601 cacgaccatc caaacattgg ctccatgcca gggctgtgac tgcagcctgt
110651 gtaggaccat ggggagttca gagtcatcat acaaggcagc caagaactgc
110701 cataaacact acacagatgg agggcatggg ataggacagg agaggaggtg
110751 atgtacactt agaggtaact aaggctagtt tgaaaaccgt gaattaagat
110801 attcttatca gtataaaaac actgagattg cttacctccc aaattgcttt
110851 attgtattaa ctctcatgct tcagctcttg gatttgttgt ttctaactaa
110901 catgtcatgt acaccaaaca ttttataaat caatcagtaa atattttgta
110951 agacccaaaa tcctggcata ttgccaggtc tgtggatttg cctgttgggt
111001 gttgggatgg gatatcagag gaagaagcat acaagtggga aaaactgtga
111051 ttagaaaggg aaaaataggc atttccacag tactattaag agaggcatga
111101 taatgccatt ttttttcttc tgtacaactg gtcagatttc aataaataat
111151 cattgatggt ttactgtgta gcctcagaag gtgaagtcta tgagggcagg
111201 gaggtgtgtg tgtgtgtgtg tgtgtacttt ttaactgctg aaccccagtg
111251 tctagaacag tacctggcac acagtaggca ttccataaat atttgtttat
111301 tgattgaatg actgctaaac actgctagac tgcggggatg agatgtgtga
111351 gaaatgcctc ctgatcttaa gacactcaca gtcaagtgga agatacaagc
111401 atggaatcaa gtaattaaga aaaatgattc tcaggccagg tgccgtggct
111451 cacacctgta atcccagcac tttgggaggc tgagtggggt agatcacttg
111501 aggtcaggag ttcaagacca gcctggtcaa catggtaaaa ccccgtctct
111551 actaaaaata caaaaaaaaa aaaaaaaaaa aaaagctaga catggtattg
111601 catgcctgta atcccagcta tttgggagac tgaagcagga gaatcacatg
111651 aacccaggag gcagaggttg cagtgagctg agatcatgcc actgcactcc
111701 agcctggaca acagagcgag acttagtcta aaagaaaaga aaagaaaaaa
111751 atgtctctgg accagcagac tatttgttag aagtgcatat tcttagggtg
111801 ctccctaggc ttactgaatt agaacctctc agggtgggcc cagcaagctg
111851 gggtttcacg accttgcggg tgattctggt gacctttaag gctgagaact
111901 gccattgtgg atgtaactgt aggaacagtg ggggcacacg aggatttacc
111951 agcactctgg ggagtcatgg aaaggaccct gtagaggcag aggtgatgag
112001 gtggggcctg aggggatcca ggggtttgcc aggtaaacag tgggaatgag
112051 acaaatttct gggaaaaagt gatggagaca gactgctgag ccaccccagg
112101 agcccgcctg ggtttggaga agctctgtgg ggcacttttg acccagatct
112151 ataaattccc agtcttcatc ccttagcctg agaaatcaga acttacactt
112201 aaacaaaaaa tacaatgtct ttctaaattt caaagaatgg gaggatgatg
112251 gtaagttcat aatttgtaaa aaaaaaaaaa aaaaaaaaaa atagctctgc
112301 catttgttta ctgcctaagt ggccacagaa tatgctactg tgaggggagc
112351 taagtgtaag catttgcctg gcttccttca tcccagtcat gcagaacata
112401 cgcaggtgtg tgtattttca ttgtattgct gctgaagctt tttctttcct
112451 ttttcaagac agggtctcac tctgttgccc aggctggagt gcagtggtgc
112501 cttcatagct cactgcagcc ttgactgttt tctgtgctca agcggtcctc
112551 cccacctcag cctcccaagt agctgggact acaggcacgt gccaccacgc
112601 ctggctagtt tatttttat ttatttttg tagagacagg ggtcttgcta
112651 tgttgcccag gctggtcttg aactcctggc ctcaagcaat cctcctgcct
112701 ctgcctccca aagtgctgtg attacaggca tgagccaccg cgcctggcca
112751 agttagcttt atttctgggt caatgaatgg taccaacact ctataaacat
112801 gaactctatc tttagtgaca ctatgataca taaatgagct tatcgccccc
112851 gaatgtctat atctaaaccc acgtaacact tgggaaggag aaagaaagaa
112901 gtgagcccat cttgggacag gagctccttt ggtgagtgta gcacagagtg
112951 atttgttagg gaaagcacat gtctttccag aaggacatga gccagaactt
```

FIG. 5 CONT'D

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113001 tcctggaata cttcccacca ccccatgatt ctcagaaatt ggggtccagg
113051 ccaggatgaa cgagaaagaa accacagttc atcccagtgc tgacacccgt
113101 acccagagag gcccgggccg gggatgtatc ccaaggacaa aaggtggagg
113151 gaggaggctg gggggagttc acttcctgtg gagtgaatgg aaacagcctg
113201 gctctgccta atgtgcatga ggggctgggg gtggcttgaa cagcttgaag
113251 taccttgtgt agtgtgtgcg cacattcaca atgttagaaa aaaacaaaaa
113301 caagagctaa gcgagaagtc tgaaatactg tggtgtatga tgctgttgag
113351 ttgcaagaaa tggaagctcg tgagccggga ggcttctgtg tggcagatcg
113401 taactcctga ccaactttgt ttcacccatg atgataacca gcagaggttc
113451 tccaggttgt ttatttttga acatggtaca attcattaac aaatatttgc
113501 cagggcttag cttaccatga gccaggcact gtgaggagtg cagttacagt
113551 ggtgaggaaa accagacaca aaccctgccc tcgtggagct tatcgtctag
113601 ttggggagat ggacatacat cagtattcat gaaaatgaat gaaaggtaca
113651 cagaaaagaa ctggcctccc aacaaataca gggacatgtt ttttcagttc
113701 ttccacttca cagagatctg gtactattat aatggcacca tgggctgcac
113751 ttagtggacc cagaaagttc tactggtttg ggtttttaa aagatatcct
113801 acacgcttaa gcagggaatc ttttggaaac ctctggaaga acaatcatat
113851 taaacatgca aatagggctg ggcacggtgg cgcacaccag taatcccagc
113901 actttgggag gctgaggcag gtggatcatg aggtcagggg tttgagacca
113951 gcctggccaa catggtaaaa ccctgtctct actaaaaata caaaaaaaaa
114001 aaaaaagaaa gaaagaaact agccaggcat ggtggcgtgg gcctgtaatc
114051 ccagctactc agcaggctga ggcatgagaa tcacttgaat ccaggaggcg
114101 gaggttgcag tgagccaata tcgtgtcact gcacttcagc ctgggcaaaa
114151 gagcaagact atataaaaaa aaaaaaaaaa ttggaccatg acccttaacc
114201 tcaagattct gtgacttgtc agggtggaaa aaaatgtatg taaataagta
114251 tagatgtgat aagctttaat aaagagcagg ggaatttaga gaaactgtac
114301 caagcattaa atgtattatt tttagtaacc agaaattcct tctattgatg
114351 taattaagat tttatagtgt ttgagaggcc aaggcaggag gaccacttga
114401 agccaggagt tcaagaccag cctgggaaac atagcaagac cctgtctctc
114451 caaaaagaaa ctaaaaaatt agccagttgt ggtggtgcac acctgtagtc
114501 ccaagctgct agagaggctg aagcgggaga atcacttgag cctaggagtt
114551 caaggctgca gtgagctatg cttgcaccac tgcactccag cctgggtgac
114601 agagtgagac actgtttcaa atagaaaaaa aactgcatat agtactttac
114651 tctcagatat gagtgtttct gttgaccagg aattttacca ttcctggttc
114701 tctgatgcgg aggtggcctt gtgaaaggac acagtttctg ctgagctgaa
114751 cacgctttag tgtaatctga tgaagaactt ctatgctggt tgcggtattg
114801 gtggaaagtg ttttattttg cagaaaaagc acaaattcca cagagggcaa
114851 cagttatcca ttcactccat agctatctat tgctgcatga cagactaccc
114901 cctaaaactt agtggcccat gccactattt tattttgcat gattctgtga
114951 gccaggaatt tgggcaagat tcagcagaac agctctactc cctgtggcac
115001 tggctggggt catggacggt tgtgtgccac tggtgggtca gttgagaggg
115051 gggcccagcc ggcacaggga cagtgaggct ggaccatcca aggggcttct
115101 ttcaggtttc tggtgcctca gcttggatgg ctgaaacagc tggcagctgg
115151 ccagggctct ccagcagggt ggccagacct ctatgaggtg gcaagggctc
115201 tgaaagtgaa tgctccacaa ggatgggccc agtgtgtccc ccttgcatca
115251 tgctggctca tggatcactg gccaaggcca gtttcgtggc cacacccaga
115301 gtccatgtgg aggggcctgc acaggacatg aagccaggag gtatagttca
115351 caggggaaca caaaagtaac gttcactgca gggacagagc agatcactga
115401 agggaatgcc actgggaatc gagccccatg tcctggcccc tgagcagagt
115451 tctgtcccca agaccattac tcctcatgga acttttcacc tccctcacac
115501 ttacggcaat gctaacagtc actacacacg gttctgagaa ccttcaaatt
115551 gaagccctca tgatgtttcc taagaagttg cagttgtcca aatccacaaa
115601 cccagatttt agttggcaag tctgagaggt tctgggtaac tgttttgctg
115651 cacaaacgtg ggtattcctg aaagtttaaa gattcatctt caacatgcta
115701 gggaaagcca ccatgatagc tagtctaata atgcccagac catcccctca
115751 ttgatgaatg gaaggctcac attttaagat gaatatgggc cagggaggtt
115801 tcacctttct tggctgaggt tgatgccaaa gtgataaacc ttggtgcttc
115851 ccgcctccct gttccctggg gatgggccag aatcagatgc catcagggac
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FIG. 5 CONT'D

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115901 cctgcaggca attctgagaa ttccttttaa gaagacacct gcaggaaggg
115951 tgaaccgctt tctagccctt ctgcagccag ccactccccc tgccttttga
116001 tgacacaggt tctgcataag gtgagaggga ggacagggtg acatccattt
116051 cttgtaaaaa tgcctcaatg agaaaagggc cacatgcatt tcttgtaaaa
116101 atgcatcagt gagaaaaaca acagcagcag caacaacagc aaatatttac
116151 tgaatctcct agtatgatcc aagcccccaa atcaagaaaa tgtgaatgct
116201 gatgtaaaaa aggaaggtat ttgttcaaac tgcctggcca gtgtttttga
116251 agaaaacaga gatctccaga gacccctttt ttggtcctaa gtagcaagca
116301 aacaagttca ttaaatgtgt actgtttatt tgtgatgtct ccaagcagag
116351 tagttggctc ttgttatata tctgggagaa taatcaatga tttatgcttc
116401 tgacagtctt atcatagcca tttacataat ggtcatgtgt atttgtgact
116451 ttaataccct ctgcatatag ccttaatttt taaatggatt acactgtttt
116501 gctgttgtga ctttgcttgt ttaatcatag ctaagacttt tctgaagtca
116551 aatacttttt ccattatcac agtgaggcgt tggcaaaaaa gtgggggctt
116601 gctggttaca cttgctgaaa ataaatcttg cgtttatttg gactctcaag
116651 attggagctc tgaattcaca tagtccagtg tttatgcaca gagcaccact
116701 ggcattgcca ttgattacga ctggcatgac cactgccaga ggtttagcag
116751 ccctggcaca catccaccaa atgccatttc aatcactcag aaatttctac
116801 aacaacagaa ggcccccccac atgttgggat agtgggctgc ccttgcttga
116851 gcacagctga tcgatccaac cactggtcag cggttgcatc tcctcttcaa
116901 cactccccta aagggacaga tcagccgggc tctgctccag catccccagc
116951 gatgaagaag tcaccacctc ctgaagccac attggcctgt cctcattatt
117001 aacatgttat ttttatggag taaactcctc ccccatcacc ccctcagacc
117051 ttgtctataa cacaggcctc tttgtgtctc ctcccctaca ggaatgccct
117101 ggagtacttg aaagtagcca ttgtgttcct gctgtcctgt gacagcctcc
117151 cacctctcct ggaaacttac tgtgtcattg tagctaggtt tgcattttac
117201 agtgaagcat tttttacttc acctcattaa atgttcacac tgtgaagcag
117251 ggattagcat ttccactgta cggataatga aatggagtct caggttaaac
117301 gacttaccca aggctacact gctaacgatt ggcagagcca gaacatgaat
117351 ctgctccaaa ttcaatgcct ttcataattt tcccaatatg cacttcattt
117401 ttttttcttt tctttttgag acagaatgtc actcctattg cccaggctgg
117451 agtgcagtgg tgtgatcccg actcactgta gcctcgactt cttgggctca
117501 ggtgatcctc tcaactcagc ctcccgagta gctgggacta taggggcaca
117551 ccaccacacc ttgctaattt ttgtattttt tgtagagatg gagttttgcc
117601 atgttgccca ggttggtctc aaactcctga actcaagcag tgtgcccacc
117651 tcggcctccc agagtgctgg aattacaggc gtgagccacc gcgcccggca
117701 caatatgcaa ttcgttttgt ccagcctctc cctctgatgt cttcattctt
117751 cccattacaa ctccgcatgt ctcctgtggt ggaaggcatc agtggcccca
117801 atttttcacc cttccctttc acatgttttg ccagttccat cagcaggtgg
117851 aacttgttgg gggactttgt tttcaataga ataagatgga aatgtcctcg
117901 tgtgagtttc gacattaggc tcaagaagcc tgtgtgtttc cactttgcgt
117951 ttctgccatc accaaacatc cggagcagag ccaccccagc tagcccagcc
118001 gagattaggt gactcccagc caccccacag acttaggaag aaaacattgg
118051 ttttatttaa gttattgcgt ttcagggggc tggttatgct gcagttgcta
118101 agcaatacat ttctccaact ttcaaaaagc ttccctttcc ccacggggtt
118151 cctttccctt cattacttgg aagcctgtgc tagctttctc aacatcctcc
118201 tcctgtttat tccacaaacc actgctgcct ttctgctccc cctccccatg
118251 ggaaggtgct ccccaactcc tagtggccta accctgcttg ggccctgggc
118301 cttcagtgtg cagcatcaac tcgtcctgaa cctctccttt tttggcttca
118351 taacgcttac ctcttgtcgg cctcgacctg ttcttgtgtt tcttatctct
118401 ctcctctcct cccatggctc ttcctgggcc ctctcacctc tttgcttcct
118451 ctccagggcc cccatccttt cccaggacct cgaggaccac caaagtgctg
118501 acgactgttc ccagcctgcg tctcttccca ggtgcagctg tgtgtgcacg
118551 cccctagacc gctcccccgg gggcctgatt cacagcaatg atcaccagca
118601 cgtgaggaaa gactggcgta ggggagagtg gccagggttc ccgccagaga
118651 ggtgttgcag gagtccaggc gagaagcgat gcggcccaac agggcattag
118701 ggtcaccaga acccccctgtc tgggcaccca tgcttctacc tgcagagctg
118751 gagttttgtt tgcagacctt agtgtgggac ttcacattta tccttattaa
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FIG. 5 CONT'D

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118801 atctaggcat ggtcagattg cacccaacac tgcagcttgt cctaccgctt
118851 gctaattttg tttcagacac taattaggcg tcgctctcag agaccagggt
118901 cactcaggca tttgatcaat gtgttacttg tgtcccatcc aagtcatcga
118951 taatgttgaa tagaaagggc ccagcaggaa cacagtaaag actgttactt
119001 gttttagcca ctagagggct gcatgtccca gaaattgatg caggtgctgc
119051 ttagaagtga aactaggaaa tgtgagcact gttgggttct atggggtttg
119101 gagtttccag ggcgggggcg cagaggagag tgtagcacac tggggagcag
119151 cagatggttg tagcattcgt gggcaaggag agggaggagt agggggttgg
119201 cagagaccac gaagggcctt aggaacactt ctggggagca atagggagcc
119251 atagaaggac tttaagcaga ggccacacga tcatatttgc ttttttttt
119301 ttttttgaga cagggtctct ctctgtcacc caggctgcag agcagtgaca
119351 tgatcacggc ttactgcagc cttcaccttt tggactcaag tgatcctcct
119401 gcctcagatt cctgagtagc tgggattacc ggtgtgcacc aacacacctg
119451 gctaattttt tatttttatt tttgtagaga cagtttccag gctggtttca
119501 aactcccggg ctcaagcgat cctcccacct cagcctccca aaatgctggg
119551 attacaggca ctagtcactg cgcccagccc ctatttgcat cttaaagcag
119601 tcactccagc atccgtgtgg aatggaggga ggaagaaggg aattggatgg
119651 ctgctggttg gttcagaatg agaaatgata aaggtctaag gtgacatctg
119701 aagggaataa aggaggggac agaggaatgt aagtgaactg agcagaatga
119751 gggcagagtg gcaggggaca gaatggcagg agccacccaa caggagggga
119801 ggggggaggga atgggaggga agggagggtc acctggaaga tgtgaggggg
119851 ccagggagtg aggagagaaa gaggaaagtg aaattgtgct ttgtaaagaa
119901 tgagtcgtac attcactcac gatagagcat ttattatgtc gcagacactg
119951 ggctagaccc tggggataca ttcatgaggg aaacagacac tgcccctgcc
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120051 ctcctgtgct gggcctggga agcccagaag tgggtattta agctgagaga
120101 gcaaggatga gaagcagcag ccggtgaaga aagctgggaa gactattccc
120151 agcagaagga acggtatcag ggaaggccct ttgggaggga tggaaaagca
120201 gccaggcttg ctggacttgt tgcaggagga aggctcggcc tgatcctgtg
120251 tgctttaagg acagtggtca gggctttggg tttgattctg tgcatcaagg
120301 gaagccacta gagggtttgg gggcaggaga gaaccatgac cagatgcgac
120351 ctatgaaaag atcactttgg atgcttgcag agatggggtg cagtccaggt
120401 gggagccatg cagatgcaga gagctgctca gatgggacac aagtctcaga
120451 agcagaaatg ctgatgaatt ggctgcaggt gagaggcaga gagaactcat
120501 gtgccttcct gggtttctgg catgaacaac tgggggaatt tcaggggcat
120551 cagcagagct ggggaagcca ggtgcaggga gtgacaggaa gtcacatgcc
120601 atattttgaa ctgtaccttg gagagaggga gcctgagagg catccagcca
120651 gcaggtgagt gcatgcatga gcttggagat tgccgaagtc ggcccggagc
120701 cacagaggtg ggagccacgg tggggcacgc acagaccaca gacctgaagc
120751 cttgcaggaa gacagggaga tggagaggag atgcgcagga gactgagtcc
120801 aggcacaacg gtgctcagtg ctcggctctg aggtggagga ggctgagctg
120851 agagagcaca ggagggtgag gttgcctggg cgacaggaga ggagagggcc
120901 tggagaagag gccaccagct ctgtcacctg ctgctgaggg gtcagatgag
120951 cacaggaaat cgctactgga tctggtggct ctgaggccct ggatagccct
121001 gggaagagca tcttccaggg aggtggggaa gccagagatg ggtgggttgt
121051 gaggtacatc acaggtgagg aggtgtagcc cattcgtgga gaaattggag
121101 aagttttgcc ctgaaggagg gcagagagac agaaaagggg ctggaggggc
121151 agctgaggga taaatggtgc ttttttgacg ggtgacgcac atcttgtgca
121201 ggaactacct gaaaacttgt gaagacatta gaaagaagag ccaagaccca
121251 agaagggaat tgaaggtgcg agggaaactg tcatgcccgc cctgccctgg
121301 ccttcttata cgggtgcctg ttccctggct gcaggtcacg tgccacatct
121351 tgattctgat gggcatagca cattgacaac tgaacaaagc cacccggctt
121401 ggaaatggtc cctggtcaag gtgaaggaca cgcctggtgc tgccagaggc
121451 caccaggcag ctgcaggcac gccctcttcc ttcctcccac acgcttggta
121501 gcacagagcc tcattcatcc aggccagcag gtcacagcca tgggaatgtc
121551 atgctcagtt cccagggaaa agggcagagg ctttttcccc tgcagaagaa
121601 ccagtctgca cctagggcct tgcccgtttt ccccaagagt cctgtgatta
121651 tataagcatc atctgtccct gatgctgggg tcctggtcaa gacttcccca
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FIG. 5 CONT'D

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121701 gggcggggct ggggtgacac agctaggccc tggcctggag ttcaaccacc
121751 ctttgtcctg atggcacttt ataaaaacac tgtcagcctg gtctctggga
121801 taacagggtt acaagcctct ggatgactaa ttggccctca gaactaactg
121851 gatcaaatac aaactttggg atgatattgc gtgccccag gccaggtgga
121901 gacctagact gagcatggac actgccatgg agaaaggaca tgggaaccgt
121951 ggggtccccc tgctgcccag ccacccccac acctcgggtt gaggtgggat
122001 gtaggttaca gataaggtta aaatacaaat ggaggcaggt gaaaagttgg
122051 gtgggtccgg aggtttgaat cgcagcaagg aatggatcgc ttcctcttca
122101 cccagacctc agctgctccc taaatctcag tgaccgccaa atcggtgcct
122151 ctggcccacg tctttcttga gccccagact catttgtcca acggctgcct
122201 ggacatcccc acgccacgtc tccaggcaca ggacactcgt gtgcctctgc
122251 cccccatccc gggctccctg tcttggctga gcacatcccc ttctactcag
122301 gtcacccacg ccacaggccc atgtcctcca gaaatggttc agctatgcct
122351 ggtcaatagt aaatcctaag tatctcccaa gttctatggc tgctgcctct
122401 gggctctggg tttgaatcct gcaccaccat ctgctcactg tataattggg
122451 tgagcaaccc tctcagtccc tgtttccatg cctgtaatat tgggattgtg
122501 aaagatgtca taatcagaat ggagccactt ttgttaaaaa caaatcctga
122551 caaatagagc caagggaagg ccatgaagag aaatattcgc atgcataaat
122601 gcctaataac aaaaactacc acggcagact atgaaaactg caaccttgca
122651 caaaaaatgc ttctaggagg acagctgccc agtaactacc tgtccagcct
122701 tggactggtg tccctcttgc aattaaccct tgcagccaag gatcattact
122751 tcaaagcaac aatacagtcc tcactttcct tcacctttgc cttccttcat
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123001 gagttcgcac tcgctgttac cagctggcgc tcatcatccc accctccctc
123051 attgttcccc ctccaggccc ggctccagag ctctccccca ccagacacac
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123151 tcagaccctt agctgggcat ttaaggctcc ctcccggccc tctcacatcc
123201 ccacatgccc cggacaaagc gcacacgcct cgtcattttc cagccatgct
123251 tcgtgcccac ggccctccct gcagcgggaa tctctcgctc tggtgacggg
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123401 tggaagctcg gtgattctca agagggaaca gctagccgtg gagccaggat
123451 ttcagtccag gtgtggccta tcccaaagtc caggtggttc tagttaatcc
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123551 cgtctccgag atgggaaagg atggtagcag ggtgtatgtc agcatctccc
123601 cagggcagaa cacatctggc ggcatctgca atgtctgttt tgctaagcat
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123751 ccgtgtggtc acagctggct ggcgttgtca gagacctctg gctccccttg
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123851 gggcccagtg tgggggggctc tgcactgaag ggtgcctgcc cttctgtagg
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124351 taaattgcat ctatgttaca ttggttgatg gtaaaggggt tgcggctttt
124401 tgtgtgtttt gatggcgact ttattttagg gtattgtaac tgcacatgct
124451 cctccatgag gaggaagtga tgagggaagg cggggaccct ggcaggtatt
124501 ggatgtgcat ccaccatgaa cttcagcctc tgtagcccca tggtgctggg
124551 gccactggga aatggtggaa tggctggctg agtggcaatc gctcctgtca
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FIG. 5 CONT'D

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124601 ggaaatctaa gctaatgtta tgtccaactg aaaaagaaag ccaagaaaac
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124701 tttaatttta ttttctacag atgaagtctc gctacgttgc ctaggcttgt
124751 ctcaaactcc tgggctcaag caatcctgat cccccaactc tgccataccc
124801 gcccccccatc cccagcccac ccccatctcc acctcccaaa gtgctgggat
124851 tagaggcata agccactgcc accgctgcaa tctgaaatta atgcctatgt
124901 caagttgaag gactgctcaa aatattggag aggttcaaga ctgaatgtcc
124951 ctacgctata cagaggtcta attagatctt ccaaacatca gacaaccaag
125001 tgaagttaag ttacctaccc ccttgaatga atctagcttt tgaaatcttt
125051 ccgctgagtt atcctttagc gctggtatcc agaattcctt tttccgtggg
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125151 ggccgagggg cctgaattca cagcctggtt tccaaagaca tggaccttgg
125201 ggtcagccct ggccctaaat cctggctctg tggccagctg tctgatctgg
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126201 actggttggt ggggcataca ggaaggtgtg ctggggccct ggggcagcat
126251 aaggctttcc ctgcctggaa cggtggcaag aacaaacaca gccacacaca
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126801 ctctgaactg tcagggaacg ttataaaaat aatctgacgt cagtgactaa
126851 agagtacggg tcatcaggct gccggccggc ctcctgcaag ggcactggcc
126901 agggaggcca cagctgccaa agcggggagg tgcgccaggc cccacatcac
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127051 gggatcagtc ctggagaaca catttctctt cccctctcta ggcagagaaa
127101 tacctggctg aagaaaaact acacaacact caagtaatgt ataagggagg
127151 gttcctgtgg aaggcaacga ttcatgattt agaaactgaa gtgtaaaaaa
127201 tacagatcaa caattgtgcc tttcattctt gtaaaatatc gctttaaaat
127251 cccgttttag atggttgatg tctgaaacga aaccacggcc ttttaaaata
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127351 tcctagtcac aagagactat tcaggaccaa aactgtatag gctttctatg
127401 tgttcactaa agactgtgat gggcaattat agaatgacag cttattagaa
127451 aaaaattgct tttatcaaca tctgatacaa tggctctgaa aaaaatttat
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FIG. 5 CONT'D

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127501 tgatggatct gagaattttt tcacacatga atcatttctc cttccaatgg
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127601 tgtgcctgct gggcatccca ctatgctgat tcctactcta aaagacactt
127651 acagcagaaa gcattcaccc atgaccatta tgaaggaaat attctgtccc
127701 tcactcaccc tctggaagct aatatggagc agcagtcact ctatccagag
127751 ccacatgttc acagttctct agcaagcagg tcacaccccg tgggtcccct
127801 attccccgtg acccttgttg atccatcctc ttcctgctca gttgctcccc
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128201 gcggctcatt gtgcccaggg gctcacatct gcaagttaaa attgctttta
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128351 atactccatc tacccagaac aattacagca gaaaaaatag gcacctccaa
128401 agtcttccca agaatgatga ctttctgaaa tgacacactg tacaaactgg
128451 acaaatgaga cgactgactg tgacaggggc cggggagctc ttcaaggggc
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128551 cgaactgctc atcatccgtc ctttcttttt ggaagctgct cagaaactca
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128651 gtgaggactg gccacaaaca cctgaaacaa aaagaaacaa atacttagga
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128751 cacccacact actcgcgttt catgcgtgac tgatattatt aatgcgtaga
128801 agcccctgac tctaattctc agtgagggtg atcaatacag tcacacacca
128851 cataacgaca tttcagtcaa caacagacca tgtatacgac tgtaatccca
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128951 tcagtgcatt tactcatgtg tctgtggtga tgctggtgta aacaaaccta
129001 ctgcccggcc agctgcataa aattcaagcc cgtacaatta tgcacagtgc
129051 ataatacttg ataatcaacg acgatggtac tggtttacgt atttactata
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129151 aaaagttaac tgtaaaacag cctcaggcag gtccctcagg aggtatccag
129201 aagaaggcac tgttatcgta ggaggtgaca cctccatggg tgttatggcc
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129301 gatgatcctg accctgtgta ggccgaggct aatgtgagtg tttatgtctt
129351 agtttttaac aaagaagttt aaaaagtaaa aaataaaaaa ctttaagcac
129401 agaaaaagct tatagaataa ggatataaag aaagaaaatg tttttgtaca
129451 gctgtataat gtgtttgttt taagctgtgt tattgcaaaa gagtaaaaaa
129501 gttttaaaaa attaaaaaat aaacttttta taaaagtaaa aagttacagt
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129951 ctacagtagt gtacggtaat gtcctaggcc ttcgcattca ctcaccattc
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130251 ggtctgcgta aatgcactct gtgatgttcc cacacaaagg acatcgccta
130301 gtgagcatgt ttctcagaac aactccctgc tgttaagcgc cacaggcctg
130351 cacttcacct ttcctatcac tctcctaagt cactagctag gagcacgtgg
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FIG. 5 CONT'D

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130451 tgttcttaac tataaaatct ttcaaacaga aaataacata acaaatccag
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130551 tctttttaaa caaataaaac attacaaatg gaaccaaacc ctcaccttcc
130601 acctttcccc tcccacctcc agcagtgtgc caccatctct gggcacattt
130651 caatccttat cctcctatta catagatatt taaacataaa caacatatag
130701 tatgaaagag cttatgattt ttaaacataa tttatttttt gaacacataa
130751 tatcatcacc tagttcaaaa ttcaaaaagg acaaacgtga atagtcctcc
130801 tctcaccttc cctccctgga ggtcaccaat gtcactgttt gttacatatg
130851 tgaagcttta aaaattacaa ctgctgggcc aggcgcggtg gctcatgcct
130901 gtaatcctag tactttggga ggccgaggtg ggcggatcac gaagtcagga
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131101 tgagctgaga tcgcgccact gcactctagc ctgggcaaca gagtgagact
131151 ccgtctcaaa aaaaaaaaaa aaaattacaa ctgcccaggt cctacctccc
131201 agatacgtca actcagcagg tctgtggtgg atgtctagca ttctgtattt
131251 ctatgaagtt ccacagagat tcttatgtga actcctggtg gaaaccacga
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131601 aaactaccct aggatgttga gtaccaatgt ggagaataca agactgcaga
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131701 aggaaggctc atggtgtggg cggcatgaga gctagtccat gagtcaggca
131751 gagaatgttt acacgtggtg gtaagaaaag cagcattcca ggaatactga
131801 attgtcccac tgcaggctct gaggtgggcg ggacaggacg tgggagcaac
131851 agtaagaatg agtaagggaa cgtgggagct aaggcggcgc cggctctgga
131901 acctgggttc aaattccacc tctcctacat gttagcagtg tgtccaccag
131951 caaagttttg ttatctagaa ataaaaggac ctctgcctgt ctgggtgggg
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133151 agaaaattag aaaacacttt gagacaaatg aaaacaaaaa caaaatatat
133201 caaaactcat aagatgcacc aaaagcagtg ctcaggggga aatttatagc
133251 tataaatgcc tacattaaaa aagaaagatc tggactgggt acggtggctc
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FIG. 5 CONT'D

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133301 acgtctgtaa tccagcagcg tgggaggcca aggcgggcgg atcatgaagt
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134501 caatactggc ttagggtggc tttactccaa tgactggtga actctggaca
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134751 ttctgttgtt ttaagccatt ctgtctgtgg tactttgtta tggcagccta
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134851 atcttctcaa ttgatacaga aaaagagttt gataaaatcc aacacctttt
134901 catgataaaa acactcaaca cggaggctgg gtgcagtggc tcacacctct
134951 aaacccagca ctttgggagg ccgaggtggg cgaatcgctt gagcccagat
135001 attcaagacc agcctgggga acatggcgaa acccctctc tacaaaaaat
135051 ataaaaatta gccaggtgcc gtagtgcaca cctgtagtcc cagctactcg
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135701 ctagtcatta tggaaatgca agtcaaaatc acaatgagat accacttcgc
135751 acccactagg atgactgcaa aaacaaaaca aaacaaaaaa acaaaaacaa
135801 aaaactctga cagtaacaag tgttgcaaag atggatggag ataaattgaa
135851 accctgggcc aggaatgatg gctcatgcct gtaatcccaa cacttgggga
135901 ggctaaggtg ggaggatcac ttgagcccag gagttcaagt tcaagaccag
135951 cctgagcaac acagcaagac cctgtctcca caaaaaatta aaatattagt
136001 tgggcattgt ggtgcacatt gtagttccag ctgctcagga ggctgatgca
136051 gcaggattgc ttgagcccga gaagttgagg ctgcagtgag ctgtgattcc
136101 agcccgggta acagagcaag actgtgtcaa aaaaaggaaa ggaaaggaaa
136151 ggaaaggaaa gggaaaggga aagggaaagg gaaagggaaa gggaaaggga
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FIG. 5 CONT'D

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136201 aagggaaagg gaaagggaaa gggaaaggga aagggaaagg gaaagggaaa
136251 gggaaaggga aagggaaagg gaaagggaaa gggaaaggga aagggaaagg
136301 gaaagggaaa gggaaaggga aggaaaggaa aggaaaggaa aggaaaggaa
136351 agaaagaaaa gaaattgttg ctggtgggaa tataaaatga cacagcctct
136401 gtggaaaatt ggctgttcct cagtaagttc aacaatgaat taccatatta
136451 ccgagcaact cctttcctaa aaatggaata cattgttcaa acaaaaactt
136501 gtgtagtagt gttcatagca gcactattta caatagccaa aaggtgcaaa
136551 caacccaaat gtcccttaac tgatgaatgg ataaacaaat ttgtggtata
136601 cccatgcaat ggaatattat ttggccattt aaaagaatga agtaccgggc
136651 cgggtgcagt ggcttacacc tgtaatccca gaggccaagg caggtggatc
136701 acttgaggtc aggggttcat gaccagccta gccaacatag tgaaaccttg
136751 tctctactaa aaatacaaaa attggctggg tgtggtggca gatgcctgta
136801 atcccagcta ctcgggaggc tgaggcagaa gaatcccttg aacctgggag
136851 gtaaaggttg cagtgagccg agatcgtgcc actgtactcc agcctggtga
136901 cacagcgaga ccctgtctca aaaaaattaa aacaaaataa aaaaagaatg
136951 acgtgctgat ggatcatgct acaacatgga tgaaccttga aaacagtgta
137001 tgaacaaaac accacacaaa aggccacaca ctgtatgatt ctatttatat
137051 aaaatatctg gaataggcag atccatggag ccagaaagca gactaatgat
137101 cgccagggga tggaggtgag gggcaatggg gaatgactgc ttactgagta
137151 cagggtttcc ttttgggatg atgaaatgtt ctggaactag atattggtga
137201 cagttgtaca acatcgtaaa tacactaact gttactgaat tgtacacttt
137251 aaaatggtta atgctgaatt ttatgttatg tgaattttac cacaataaac
137301 taaaattgtt acttatatta aaaaaaaaaa aaagggactc caggcctgtt
137351 tatacaaact gcctgatgtt tatgtaatac ctatcagaaa tgtgtggctg
137401 ctctggttac catttgttta caagggagtt gctgtgaagt tttagctaaa
137451 aattgcctgg cattttgtgg tgactacata aataactcat gacagtcttt
137501 ctttcttaaa aaaaaaaaaa aaaagattaa ctataataga caaactgatg
137551 ttgcaaacca aaataataga caaactgatg ttgcaaacca aaataaatgt
137601 aaaatgtact ggaatttgca gacaggcatc actggttcaa ttccactgaa
137651 ttcattcact gtaccataaa cctaaggaaa atgctaagtt tgtgcccagg
137701 ttttaaattt tttcttgttt ttatttttta tggcttctga actctgccgc
137751 ctctaaaagt agttgctgac tggagtcagc taatgcaata gtgcatgatt
137801 cccttggggc agccaggaca ctggtcaagg cctgagatta acacactgat
137851 gataagaaac acacttctaa ttcaaggtat atggaagcaa gtcttttgaa
137901 tattatgtcc agggtagaaa tttttttggt tgtctttgtt gtccctgttt
137951 tttaaaaaat gtaattttca aaccaccccc aaacaaatga aactacccag
138001 gacttctcct tttagaatgc cgccttattg cctgtatccc tcagtttaca
138051 taacatgcct gagagatgtg atctgtggag ttctcaggcg tggtgagagg
138101 aaggcaaata tcatgaccac aactcaaata tttttagttt agaagactga
138151 aaatattgca ctctccattt taaaactgaa tgcatttcat ggaaaataaa
138201 atatctacat cttacacaca tatccattaa tttcattcaa attctatttt
138251 gccaacaggg attgagccag acaaggtatg gggaggttag tcttctgcgt
138301 tgctgacctc actgcctttg atgcgtgctg caagcctgga atgctctgta
138351 tatgctcctg ttacggttat gtggaagcta ctccaagcaa aatcccaccc
138401 catcgaagtg tcaaataagg caaccatgtc cttattcata tgactacaca
138451 tctgagtaat aatttagaat attttgacac aatacttgct agtactgatc
138501 agagacaatt aacttttcc tgtttaagaa aggacttgat tgttaaatct
138551 gcaagctggt tgggtgtcta taagcatcac tgggcccacg acagaattag
138601 actggacccc actgcacatc aagggaggaa gaaaagcccc aggaaggaag
138651 tgagggtggt ggaggccagc agcctgaaag tacaggatgc tctaaaaacc
138701 tctagaatct cctgaaatcc tcctcctcac tgccaccatt cttaccatca
138751 ctctgattac acaagtgata catgtggaaa actagtgaaa taaagaaaag
138801 cacaaagaag aaagtaaaaa aatcactgac ataattcctc cacccagaga
138851 taacccctgt gaatatctgg tgtatgtatg tgcagcattt ttttcttgtg
138901 cacgtcacta tttgtagaaa tattttaaac aaaactgggc ttgcattctg
138951 tacatagtac tttgtaaact acttttttcct taacaatatg ttttttaatg
139001 cttgtagatt cttcttacat tacatgagat gatcgccatt tcaaaaagat
139051 agatatcatc tgctgaatcc ttgctatgca ctgggcattg tgctaaacag
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FIG. 5 CONT'D

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139101 tttatacgaa ttgtattctt ttatcttgac aacggctctg ggaggaagat
139151 acaatttttc cccaatctcc aggtgaagct gagagaagtt aaagcagcat
139201 ccctgaccac taggctgtgt gtgcagcgtg cgccttccgg gctgtgctgg
139251 gtgcttccgc tagtgactac acgacagtat ggctgccagc ttcgccctct
139301 ccatgtgtgg cagtgaccga ctatttcgtt caaatgttct taactactta
139351 tctaaaggta ggggcaagga ggggaaaagg ggcttggggt caagctataa
139401 tcacgtttct catctttaaa actgttaagt aaactagtgg atcaaagaaa
139451 tgggaacgcc ttctttccaa agtttttca gcattttaat gttgccttta
139501 gacagctaaa tgcaaggtgg atgtctggac acttccttag agtaacagaa
139551 cacgttgatt tgaactgaac aattcaagcc tgtaggcagt tttgtaaaag
139601 gaatatagca tagtgattac ctatatctca cggagttttt aaaaagtttt
139651 tcttaaaaac agctttatta aaattcagac tatatagttg actcatttaa
139701 agtatacttt ttaatgtttt acagtatatt cacatagttg tgcaatcatc
139751 accagaatca attttagaac atttttatca tcccaaaaag aaaccctata
139801 cccattagca gtcgcccgcc ccctccgcac cccaacatgc tcccagctct
139851 aggcaacact aatctacttt ctgcccctag agctttgccg tattctagac
139901 attcatataa atggactaat aaaatacgtg gtttctatga ctagcttctt
139951 tcacgtagca caatgttttt aaggttaatc catgttgtag catgttacga
140001 atgccacatc ctttttgtgg ccaaaattgg attgggtttt gaaagtattc
140051 aatgagtatg tccttataaa gtgtttagca gagtttctgg cccgcagcga
140101 ctgctcatta cagttgctac ttccttcaac gtgaaatcac tgcagtgtca
140151 catacagcag taatcgcttt cccaaatatt tactgttatg cagatgcaag
140201 ttattaagat tcatatttaa acccaatagc tcattttaac tattttgggt
140251 aaaatatttt atcttccatc caaagaatga gtatactagt atttcctcta
140301 gtaatactgt aaaaagagga attcatactt ctaatatact ttatcacagt
140351 caattgtaga aagaatagac tcttgtaact gggagggacc tcaggaactt
140401 agctaattca tccttccact tcagacacaa cccactggta attcttggca
140451 aacaagaatt gattcctatt agatcccctg aaaaggtgat tctataacca
140501 tcctcaatga cctattccag tgtctacaac tcccgttctc agaaaattgg
140551 ttttatttat agtcactctc cgcagcctat tgagatagct gctgttggct
140601 tgcattatga tattctatga aacatgtgct ctgccctcaa gtaccactgt
140651 taaatttctc tgtcagtctt ctttttggt gcataagtgt ttttaaatct
140701 ttccacatag gtcttgtttt ccaaatagct caatcatttc tgtggcttct
140751 ctctgctgag cctctctgta ttctctatac cctcctccag gtaagcacct
140801 cagaggaact gtgcagtctc ctttcctagg atccttaagg agaagtcatt
140851 tacctgatga catggccaac ctcaagattc ccagagctgt caatataaac
140901 ttcatcccgg tgaaatctga ctcgagttga agagaacact ggctttgtgc
140951 atcaggggcc ttcactctgc tatcacttgc tcaccctgga cttttctgct
141001 ctttgtgcca tcactttctc aatgatttta tttccttccc aggtctgtga
141051 tactgtactt ttcatcactg agcttttagc cacttattcc tggtttcatc
141101 tacaatggac aaatactaca gccattcaga atccttattc ttcccggagg
141151 ccttcagctc catcggaagg tctggcgaat gtgatgagca cacacgctgc
141201 tgacctcatt ctccaagcct cagatggaaa tgtggaccag gacttcccag
141251 gggaagccgc ctgcacaaaa catagattcc agacctacac attctcgctt
141301 tctgaatgga atatgccagg aaggaaggat ctaaatatat tcacaagtca
141351 gaatagttct atttaacatg acgatgcttg tcaaacattt tgtcagaaag
141401 attttttaa aagatactat attactaccc aggactctgt tcttgtccca
141451 atatttgaaa actgaaatga gtccctccag gttagcatta ccagatttag
141501 taaacagaaa gagaggatgc cccattaaat tctgtttcag atgaacaatg
141551 agtaattttt ttaatgttag tatgttccgt gcagtgctat actttggcca
141601 tctcaaattc aaattgaatg gggcatcttg tattttatct ggcaatcctt
141651 atctggttca gaggcacaga ggctctcagt ttccttcctt taagaacata
141701 catattggct gggtgcggtg gctcatgtct gtaatcccag cactttggga
141751 ggccgaggga ggcagatcac ttgaggtcag gagtttgaga acaggttggc
141801 caacttggtg aaaccccatc tctactaaaa atacaaaaaa aaaattagcc
141851 aggtgtggtg gtgggtgcct gtaatcccag ctacttggga ggctgaggca
141901 gaagaatcac ttgaacctgg gaggcaaagg ttgcagtgag ccgagatcac
141951 accactgcac tcaagcctgg gtgacagagc gagactctgt ctcaaataaa
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FIG. 5 CONT'D

142001 aaataaataa ataaaaataa aaataattct aaaaaaagaa catacatatt
142051 aatttactta ctcagacatt aattaaatat ttaaatagcc actatgtgcc
142101 aaaaaccctt ctagttgtta ggagatagag cagagaaaga acaaatcaga
142151 ggaaaattcc tgctcgcaaa gcgcttctac gaaatacaaa ggtctggcaa
142201 agaggcactt tgccatttcg aatttaccag cctcagttcc ccacatataa
142251 gtggggctat gtagaagaaa gaacatggga tttggaagca gaagatggcc
142301 ttgtctgtga gagctcaggc ttgtcactta atctctcaga cagtttcctc
142351 gccaatgaaa cggacaccac atctgcctga cttcacagat ggggtgagga
142401 tcacatggaa ttttgtcagg gaaagtgttc tgtacgctac aaaatgttaa
142451 aatgttacta acattattgt taatgcaatt gctttggtat tttggaaatc
142501 aaatctttgg gatctacaaa tttcatataa ttgtggaagt tacataggaa
142551 actagacatg tatcccaaaa ttacatggaa aagcaactta aatttttta
142601 tgctaggtaa tattcacaaa cattaagtat aggctgcatt ttctttatat
142651 actactgcaa aaatattttg taaagtaggt aacaacatta taaacattca
142701 gtagcaggat tatcaaacag agccgtaagt aacatattta tatacttgtt
142751 tgatgatgtt gctaaagttt gccagaaata cccattgcaa acctttctat
142801 aaagaaacat agagttgatt gttttatgaa tttttaaaga aagtcttttt
142851 aaaaatagaa aggagaagtg aggccttaat tatgactttc cacattttct
142901 ccttggcttc tttgttaaat atgcaaaagg gtaaaataag atcaaatgag
142951 gacacgataa agctgaatgt tcgacaccat ttaaaagcag ttggtgagac
143001 attaagtcag aagttggtat acttttcaat atgctgttac aattttaggg
143051 gaaattatca ttattaaact agttcatagc caattcctaa attcacttgg
143101 tctcaattgc tttctccatg agtacggtta gatttggtac accatgacca
143151 tagtagtttg gtgtgctaga aagtgggtcc ttaggccggg agtggtggct
143201 cacgcctgta atcccagcac tttgggaggc tgagacgggc ggatcacctg
143251 aggtcgggag tttgagacca gccgggccaa catggcaaaa cctcatctgt
143301 actaaaaata caaaaattag ctgggtgtgg tggcacatgc ctgtaatacc
143351 agctactcgg gaggctgaga caggagaatc acttgaacct gggaggtgga
143401 gggtgcggtg agccgagatc atgccactgc actccagcct gggcaacaag
143451 agtgaaattc catctcaaaa ataaatacat aaataaataa tattaaaaag
143501 tgggtcctta aggaagtgag taattcacgg ttagtccttc actaaattca
143551 tctgtaattt tgcttatttt cagtaagacc acacggaaac tattctcatt
143601 cttgttctac atacttttt ggctgaactg tcaagccgac ttttatattc
143651 tggaataagc tggggacaga acttcttgtt ttgaagggaa tagctattat
143701 agccaaatgc taggatctga gtgacagact agtgccatat ttggcactgg
143751 ccatgcctga gttccagcag ctctgagcga gcaaacgaca cagaccattt
143801 tcttacacct tacatggttt ggtgggaagg ggcaacacgg ccctttgcta
143851 tcaaggttaa cagggaaagg aaagggagaa gatcatctca taatgtatcc
143901 ctcaatccat attgggcaca tctctgggag agtcaggacc agagacaaaa
143951 gtctcctgac ctagtatctt agaattacac ttcagcactt tcattttgca
144001 agtgaaaaaa tgcatccagg tggatttgcc caaagtggct gctggcaact
144051 gagacagaac aaagaccttg ctctcttgac ctccatcggg gctttcccac
144101 cacactatcc tgctcaccaa tagtaggaag cacgtgctga gcctattagc
144151 aggctaatga gagtcagcca ttaacaatcc agcaaagaca ttttcaggac
144201 tgggttccac attctttgca ccctacggaa ggtgctctgg ggaaaaaaac
144251 ctattaatta aacgatgtga aaacaatcct aggacttagc tgttactttt
144301 ttctaaataa caaaatattt ttggcaagta aacaatgtag ttcatacttc
144351 agtggaagga acatagccgg ggtacggggc aggccaagtt acacacatac
144401 aagtaaacaa gcggtcaact atttttaaat gtacctaccc tgtccaatga
144451 ttaggtgacc caaattctga tcttctcaga ggatggaaat aggttatttt
144501 tattttgcaa cccactgttt ccttctatat ataatactgc atttttgaac
144551 aaaattatat gaagtttatt ctcatttaaa gttctgtggg agctgaatga
144601 tatgatacac agccttctac aattccttcg gtccaagggt cttgagaggg
144651 cctatcattt tataatgtgt aggcattttc caggcctaca gcactctatt
144701 tttgtttcat tctttttttt gaaacttttt atgaaataat tctaacacat
144751 ggaagagtac aagagtaaca tatcagactt catattccca ccattggctc
144801 tatcaaaatc taatatcttt tgccatactt gccttcagat tttttttta
144851 ataaaatatt acagatatag ttgaaggcta ttggacactc ctgtatgata

FIG. 5 CONT'D

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144901 tcgcttattc tcttccctac ttcttctcct gagatgacca ttatcctgaa
144951 tttggcattt ggcattccca tgcattttgc aattttgttt gttttttga
145001 gacagagtct cgctcagtca cccaggctgg agtgcagtgg cacaatatcg
145051 gcttactgca acctctgctt cccaggttca agtgacaatc ctgccctagc
145101 ccactgagta tctgggacta caggcatgca ccaccacacc tggctaattt
145151 ttgtgttttt agtagggact gggttttgcc atgttggcca ggctggtctc
145201 aaactcctgg cctcaagtga tccacccacc tccgcctccc agagttctgg
145251 gattacgggc atgagccacc atgcccggat tccatgcatg tttttggact
145301 ctaactgcat atatatgaat ccacacttag tgttcttttg catgttttca
145351 aactttaaat aaatgacata tttaaatatt tggtcattcc actcaacaaa
145401 atgtttctaa gattaggcaa agcgatccac ataactctat ttattttaac
145451 ccattattat gtgctattgt atttgtgtag cacaatttat tttcccagtc
145501 tcccactggt gcccatgtat ggcttttccc attttaaaca atgttgcaat
145551 aaacatcttt gcacagtaag tccttattta aggtggataa cttcttagaa
145601 attgtaactt taagcaaaac aacagataag gcaaacaatt tttccatcaa
145651 atttacaaca aaacatggtt attcgaggac ttgctgtaat gtacatggtt
145701 ttgtttaaag tctgcttcca agcacctatc aacgacttta agagaggatt
145751 tactgtacat aacccccttat gcacacatcc aagagtgtct ctaagaaact
145801 gcttagaaat ggatttcaga gttgaagggt atccacagct tcaagagttt
145851 attttgctaa actgttctcc aaagtgatta caccaattta cacagtgtat
145901 gacagctccc actgctgtcc aatcctacaa aaatctgata tggttggaca
145951 ttttcgccaa tatgaagaac ataaagtggt atctcattga tattttaatg
146001 gccatttcca caattacaag taagaagaac acctatttat tggccaatca
146051 ggtttcctca tctgtaaact accaacttgt atcttttacc aatttttctg
146101 ttatttgtct ttttcttaaa gacttgtcag ttatatatgt cacattctat
146151 cctgtctttt cagtttatga tttctttttt gaacagaagt ttaaaatttt
146201 agtgtggtca catttttaaa tattttctat tatggctggg tatggtggtt
146251 catacccagc cataatagag gccaaggcag gaggatcact tgagcccagg
146301 agtttgagac cagcctaggt aaaacagcga gacctcatca ctgcaaataa
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146401 actcaggagg ctgaggcagg agaactgctt gaggccgaga ggtcagggct
146451 gcagtaagcc atgatcacac tactgcactc cagcctgggc aacatagtga
146501 gaccctgtct caagaaaaat ttctattatg ttttgtgact ttttatttct
146551 ttttaaagga attcttccta ccccaatatt atatagacag cctcttattt
146601 tctcttctaa aagttaaaaa aaattgcttt tctagtgcag atctttatct
146651 agaacttatt tctgtgtata ctgcagggta agattctcta cacagacaac
146701 ccattatcca agaaacattt attgaatatt taacccttтc ttcactggtt
146751 tataatccct ccatgatcaa atatcaagtt tcggatttat ataggtttat
146801 ttctgggccc tctactctgt tttgctgttc tatttatcag cttctaaggc
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147101 gagcttccag agagccgaac acatggagac tcctgagggg tggctgctca
147151 gggaaggcat ggaagctcca tgccccтttc cccatacctt gtcctacata
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147251 atatatatat atatatatat atatatatat aatgatgtaa taaatatctg
147301 gtggctgaaa gatcaactaa aaatgtctta cttttcaaag caacaattac
147351 cttataaact gccatgcctc ccatttatgg acttacaaat tctatcacta
147401 aacattcttt ataaaaactg agatcaggtg ccatggttca cacctataat
147451 cctgtaacta ggcagcttaa cttcaaagtg catttaaaac atttttcccc
147501 tttctcttgg gtttaaaaat gtaaccttga agcaaactgc agaagtgttt
147551 tcccttagtc ttaaaataga ctccacgacc caccccтttc tcactgtcta
147601 tactcccttc acatttatct aactgcatgc tggtatctaa ttatctgcct
147651 acttagaagt tccaggggct aaacgtgaat cttgagtcag acagaccaag
147701 cttggagacc cagctgcaaa attccagaga taacctcaag gtggctagtc
147751 aacaacccag ccatcgttga gacgatgcca gcctgctttc cacctggact
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FIG. 5 CONT'D

147801 gggacccaag acagctacca gaacaagaaa tacagacact gtactcagca
147851 taatttttac atgccttcca tatcatgttt tctcttttta aaaccttgcc
147901 ttgcccctaa aattcaaagt agttgcgttg gatgggaatc tggccacttt
147951 cctattatta cttttggcta ataaagtaac tttcttttta ccagacctgc
148001 ctcttgttaa ctggactctg cgtgtggtga gcaatccaac ttgtgttcat
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148151 ataaaaaact tagctgggcg aggtggcacg tgtctatagt cccagctact
148201 tagaaggctg aggtgggaga attgcttgag cctaggaatt tgaggctgca
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148601 caatgataca ctatgatggt gagaaatata ctggctctaa aaactattta
148651 tagcaataat gaaaatggtt acttatggta tagcattaag taataaaatt
148701 aggatatcag ttgttggtac actgtgaata cagctgtaga aaaaactctg
148751 gaatgtgtgc actgaaaaat aaaatgtact aaactattta caatagttag
148801 gctgggaata cagaattaca aatagaattc tcccacctac tccacctgtt
148851 aaaaaaatct attgtagggc caggcacagt ggctcatgcc tgtaatccca
148901 gctctttggg aggccgagga gggcggatca cgaggtcagg agatcaagac
148951 caccctggct aacacggtga aaatcgcttt tactaaaaat aaaaaaaaaa
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149151 aaacaaaaaa caaaaaacaa aaaaaccact attgtctaaa ggggttactt
149201 ttctatcata acaaaataca ttgtaaaaaa ataataatat taataatgtg
149251 agtagtaccc gactgtgtct tcagggcgtc atttaaagtt cgaagagaca
149301 gtgcttgtag gaagcaaagc attcaaggcc gacactcagg gtttgggatc
149351 tagctcaatc actgattgtt ttagaagttt tgggaaagag tatcatgcat
149401 tttctccgtg aaaaaataaa aatatttaga tgtatggatt agtcagcaaa
149451 cctttatgaa tgggcattca ttaagataac tctgaaattt catctaaatc
149501 atgcaaaaca caaagactgc ctatttcatt ttctttcaag tatgaaggag
149551 agtaaagagc agggagtttg ccatttggaa ctggaaaaaa aattgcctac
149601 aacattgttt ccagagcttg tacttttttac cttaaaaaca tgaaaggctt
149651 caaactggat gttgggactt ttatcccgaa ggaggttcat catgagtttc
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149851 aaaacaaaat ataaatgtga gtaagaatgg tgttgtgaaa aaaattagag
149901 tgtccttaag tgcatctcaa agcacaggca taaaagcaat agttattgag
149951 caatttttc acactgcttt gctgatgtca gtgcttagta ccttttttta
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150601 ctatttactg gacttttttct gaaggcctca ggggagtaac acatcattac
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FIG. 5 CONT'D

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150801 gaagtataca acctgaggtt attttaatgc atgaaaataa cgtttgtcaa
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150901 ctcatacaca tggaatagca accacgtagt caaactgtta atctgcaacc
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151451 tttcaccatg ttagccagga tggtctcgat ctcctgacct ggtgatccat
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153551 aaaaggcagc aggtagcaac tactttggaa tcagaaaata gcctagtact
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FIG. 5 CONT'D

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153701 ttatacagaa acacagttgt gtcaaaatag aatatactgc taccacagat
153751 ctaattacca aaaggaaaaa ccaaaattgc atcagtggag cttccagaat
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FIG. 5 CONT'D

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159351 cacagtaggg tgactatagt taataattta ctgtatattt caaaatagct

FIG. 5 CONT'D

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161051 tgcagtgggt gtagtaactt gcccagggcc actaaggagg caggtcttga
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162101 aagaaaaact ctggtgttaa acctagtgtt tcaaattcat attgttagat
162151 ttatgataga aataatttaa ctggtgaaac aaatggaact tgagatgagt
162201 taatttttttt ttttttttttt tgagatggag tctcactatg tcacccaggc
162251 tggagtgcag tggcatgatc tcagctcact gcaagctctg cctcccgggt
```

FIG. 5 CONT'D

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162301 tcaagcgatt ctcctgcctc agcctcctga gtagctggga ctacaggcgc
162351 ccgccaccac atccggcttt ttgtttttgt atttttagca gagacgggtt
162401 tcaccgtgtt agccaggatg gtctcgatct cctgactttg tgatccaccc
162451 gcctcggcct cccaaagtgc cttaaccact tttaaaatgg gcgcctcgga
162501 tactggaagc ataggactga catttagcag tgtcaaacca gtattgttcc
162551 tgctcttggg ttaatgggat gtaaggtgtt gtgcaagtta ctaagtagca
162601 caatccatcc tttcaaaatt gaagatgagt agccctatct tatggcagat
162651 ataaacttgc agaaaactga acaaagcatg aagaaacatt tgactgtctt
162701 caactcatac ctaaattata tccttaactc actttaatgt tgtaggaaaa
162751 caagcctcac ttaatccctt ttatatgctt agaggctaaa tgccctgtct
162801 aggtgctatg aaaaatttaa ttaaaaacat aacaagaatt ttaaagtttt
162851 ccaaaataaa ttcttttaat acatatttaa ttaaaatttc ctaaaagcat
162901 atagaaggta cacaacataa cttcacaaag aaaaggcaga taacaaccat
162951 aataaaaccc acttatttct actttaattt tttaaaaagt aaaatattta
163001 aagcattgtg tactataatt ttcaaattca aaaataataa gagtggctct
163051 taattcccta ttgctatcac acaacttgat caaccactgg gcctatcagt
163101 ggaaacatgg tgtttttccc ccccagtgga gcagagcatt cattaccact
163151 ctggaactga agttctaaaa tggaaaacca tttacagggg ttccgttccc
163201 accccgtcaa aggtcttgat tcaaactagt tcctgcatca ggggaccctt
163251 gaaagagtaa ggtagttcca caagatcctt tgaggtccct actcttttt
163301 ttaaaggata atattggtgt catgctttca agcatccctc ccctaacatc
163351 atagaaaccc catgagcagt aatagaaatt ttctgagctg aaccagggca
163401 gagggacccc cctctatggg ctgcagcaga cactgtggat tgctgcaccc
163451 atgggagttc tctacctgct tcaactatcg tcagcctttg aaagtgagga
163501 ctgggttccc cacactgcag gcccagcgca cacagcccca gtggcaacaa
163551 aaagagcagg ttgcagatca gtgctgcctt gaaaggttgt gtcatacatt
163601 agtgttaccc caaagaaaaa gggatcagga gggagttagg ttaaaaccaa
163651 cactttcaaa ttccaaggca agaaaacctt gaaacagctt gaaaatccag
163701 tattaggaaa ccataatagg gtggggtaga attcctccag catatatata
163751 tatgctagat atatatataa tatatatata tatatatata tatatatata
163801 tatatatcat atcatggata cagccaataa acaatgcaca cattccctct
163851 ctcacgccca catttccact ccagtgtgta atgggattga tacatggata
163901 taccctcaaa tttatgtaca taataaatgt atatacaaac cacatataca
163951 tacacacagg cttatgtaca cataatacat agacaaatat aattgctgca
164001 ttatagatca cataactgag tgaaaaaaaa aaaaagaaac cacaaaaaaa
164051 acagctagga tcctacccaa gaaggaaaag acagaaaatt gtgaaggaaa
164101 ataaagttca aactccaaag aatttagaat ttaaaaacct taattcaaat
164151 agtgtactct ttcatcctac ctcctaacaa ttctgttttg agaggcctaa
164201 gttttgcata gtatattatg ctgaaaaatc tgatatctat atttttaatg
164251 aatactgctt gagagaaact tggggtagag tgagagagac acttaattgc
164301 agggacataa aaggctgagg agccagcgac agctgccgtt tagagggctg
164351 actgtgctgg ggagtgtacc gagcactttg caaatacggt ttctgatctt
164401 cacaagtccg tgaaaaaggg atgattttct tcatttcaga tgtggaaaat
164451 aaaactcaaa ggttaactaa attgctcaag gacatccagc ttatcaggtg
164501 gcagagaaag acagaattca aaccacttct attatgggaa tttttagagg
164551 gagggatgaa agagattatg gttgtatgga atccttttg ggaaaagact
164601 tttggtagac aaatctatgc caaaataaaa aactaacaat gttacaatat
164651 taataactaa actgagcaac agtcccttta agagctcaaa accaaaaaga
164701 ttaggaggtt ataaaaaacc caaaaccaat gccaaaatca agtcaatcat
164751 ccaaccaaac aaaacccttt gaaaccagct actttaaaaa aaaaagtgat
164801 ttatggtcat tgttacatta tattaaccat aagcatttgg taaaataaag
164851 aaaattggtg tttccaaaac tgacagcata ctagaaaact ttttatgatt
164901 atttagattt taaaggattg acttaaattc aatggaaaat tggcttaaat
164951 acaaatcaaa acaccattta tttttgtcat tcaatattgt tgctgaaaat
165001 taaattgggc tgaatatatg acagcaagaa attactatca agtacatctt
165051 attctatcaa atgtttaaaa acctttgggg aaattttcag aaatacatat
165101 taagtatttg ctttcctcct ctattggcgt ttgttctatg tttgtaatta
165151 tgtgaaggct tacttttttt taaaaaatga atttacttgt ttccatgaca
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FIG. 5 CONT'D

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165201 gcgaagagcc atctgatagg aaaggggaaa aaaatgggac tgtagtgtct
165251 attattagca aacacctcct tagtagttta gacacagaca ttttggtaga
165301 aagaaatgga atcatccttt gtatttaatg tcattcttca tgttggatgc
165351 aaccgaggcc tatctcacca ctagctctag atccaccttt tgaggggatc
165401 atctctagcc gctgtacaat ttttgtcttc cggggtgaga aacagccact
165451 cctgggattt ccaacactcg gagcccggag ccatgctgcc ctcaccgccc
165501 ctcccttcac ccagcagtca cttccaggag tctgttccca agcccttcct
165551 ccttcttttc cttccttcct tccctcactc ggctgttctc ccgagatttc
165601 agtttcctta ctccaagctt cccattcttc atactccgcc tctcgttaac
165651 tccccttctt cccttccccc tcttttcctt gccctttttct gtctacccag
165701 acctcccctg tgggctcctc ctctcttccc tgttttcttc agggagacca
165751 taggacgctg gcaggctgaa tggaggcctg tggacacccg agcaggctgc
165801 aaactccttc ccttcaaacc cggacgctag aggccttgtg tttgttgcag
165851 ttttgcctga ggctttgggg aaatgatggc attgcggttc ctttcctctg
165901 atgtctcggg caattcagtg cttgtccgaa acccgcacac cctcctgctt
165951 acgacaacaa aagtgccaca gtggccgggc gcagtgactc acacctgtaa
166001 tcctggcact ttgcaggggc caaggcaggc ggatggcttg aggtcaggag
166051 ttcgagacca gcctggccaa catggcaaaa ccccctctct actaaaaatg
166101 caaaaattag ccgagcatgg tggtatgcgc ccgtggtccc agctacctgg
166151 gaggctgagg tgggaggatc acctgagcct gggaggctga ggctgcaatg
166201 agctgagatt gcaccactgc actccagcct aggtgaggga gtgagacctt
166251 gtctcaaaaa gtgctgcagt taactgggct taccctgctc ctaggcagct
166301 gttaacaacc agctgctgtt gcttaagcct gccctggaat ccacccccag
166351 cccaccccaa gtggcttcca aatattccca tcattctcaa acagtattct
166401 ccctccagag ttcttgtcaa ttaaattttc ctttgcatcc tgtatttcca
166451 gagatggcct ggttgccttt atagatcgtg tgccaggcag ctgccaggac
166501 ttgcctcccg cttaaccacc caccactctt tggtcttctc catcacaaca
166551 aatctctctg acggcccagc ctgcaggctc cgcctccagg gagaccacgc
166601 cccgtccctc accctccgcc aggcattctt ctccctaagt cccagcttcc
166651 ttctgcccca ctgacatctc ctacccttta ccactctctg acactctctc
166701 acactttgtg tcaccatgtg acctaatata cctttcaaca gatttatggc
166751 accttctcag aacaggctgg gtaacttcct agtctgcaga taataggtag
166801 ttttcagcag agcaaaccac tgctttcccc tttttccacc tctggagagc
166851 tatttaaaag aactatttac catctaagtc ataggcaact ttcaatcact
166901 gttcataaag taatacgatt ggagtatgta ttaatattag tatatggact
166951 atatcgatat tattgaaata catatttaag gtaatatata aaaaataaaa
167001 attcatacat ggattacaat taagtaaaac ttgtaaaaaa aagttacata
167051 cgtatatcct gaaaaaagta taaattaatt tggagttatg taaatagaac
167101 aattaaattg ctaaaatgct tttgaagaaa tgaatctgaa tacatatata
167151 tatatatata tatatacatt taaatgagtc ttacctactt tttaaacctg
167201 aaaacctatt tttttcaatg atgctgttac attgtcagtc tatagtattt
167251 tttgaattcc tcttctcaaa cagcttcaga gctgatttgg tagacattga
167301 agaaaatcat atctatttta tttctattta tatcttaaaa ttagttttct
167351 tataattatt atccctcccc aaataattct agctaacttg atcacccact
167401 ttatacacta accggaatgt caaataggct tttgtttcca aaacttttat
167451 ctgcccttga atgataaaag tttgccatta ttgaaaaatg agcatgtaat
167501 acacattgat accaacttca aaatatgtta aataatagca ggatcataag
167551 cctaagtaac tggttttcta aaatagaaat ctcgaatgta acatcactca
167601 ttagatgact aagttttggt atgtttgtct gcaaattagc tgcactcttt
167651 tctgatatat tctctgaaca tttttttgat gataaaatac agaaaccaaa
167701 agtaaaatga ttgtcagggg ctggagggag gaggaaatgg ggagttatta
167751 tttaataagt atagaggtag agtttgaatt tttcaaaata aaaaagttct
167801 ggtagttggt tgcctaacaa tgtgaatata ttgcatccta cgatttccta
167851 catagtgaca aagtagataa tacatgatca aactatagat gattatgaaa
167901 caacgacaat ataatttctt actattttgt ttcaccatgt ggacatttaa
167951 aaatttcatt cataaaataa catgatgtcc ttcatattca aagatgtaat
168001 tctccatctc ccttcactac ctagttcctt tccccagaat taatcactgt
168051 tgctgtttcc tatgcatcct tgcagaggta ttcagtgcat atgtacctta
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FIG. 5 CONT'D

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168101 agtggaagct tatgcccttt aatctgtttt taacataaat gacagcatgc
168151 cacacacaga gcactacata ttcctttccc acgtaactgt atatactgga
168201 attcactcca tttgagcttg tgacaaatat tttgagttgt tttcctgcaa
168251 taggacagac tggcctcata gactgcattc tatttacaga ttcctcttat
168301 gatccacatc atacatggtt ggctacactg aggcctaaga agtaaaattt
168351 cttgcttttt aaaattaaat tgcctcttca ggggccaagt gactataaat
168401 tgacctagct gagttggaaa aaaaaaatta ccttgaaagt agcaaaggca
168451 tctgaagcaa tatcaaatgt tgacaactcc acgtacttaa agaaatctct
168501 gaattgatta gaaaagagga tgattttggc aagtggttca tgtcgaatac
168551 attctctcag cataatccca caacgtaagg caatctgtgg ggcttcatat
168601 ctaaagcgta aacaagagag aaatagagaa ctctgttatc ctattaaaat
168651 aatattaatg gcatcaaaag aaccatttca atactgctat taatggaagc
168701 atacatacca tttgtcacga ttcattcaat atccactgaa gatctactat
168751 gtgcctggca ctattgcaga cgtattctgg aatttgagtg tattctgaaa
168801 cacttagata tactcaaata tgaacatggt gacagctggg ggtgggggga
168851 tgaggcagaa tgtaaacaat gaaaagataa tttcatacac tgagaagggc
168901 tgtaaaaact gttgacaata aaatacgcca cattataaag gtgactaaat
168951 tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgagtg actacttaag
169001 ttactttact ttagactcaa ggaaaaggca aaatgttcca ggcaaaggga
169051 aaaaactgtt caaaggctcc atggcaagaa caggcttggc gaaacagaga
169101 aggaggaata aagcctgtgt gattcgattg tagaggaaga accgtgagtg
169151 gtgtgaaatg aggcaggggt ggagagaagg gcaggggcca gatcccagat
169201 cagatacagc tttgtcagcc aaggtaagca gttggtttta ttttaagtgt
169251 aatgggaagc ctttggagag tttaaagcaa gaaattgaca agactaactt
169301 atgctttaaa aagatcactc tggcttcttg ttgagaatgt ctgtaaaaca
169351 gcaggagaca tataagaaca ggagcagaac ccaggagagg gaacgggggc
169401 ttggcctggg gtggcaggag cagaacagag gactgtgggc aggtggtgga
169451 tactgttcgg aggaagagtc aacaagactt gctgatgatg tagctggagt
169501 tgggtgaggg aataaatttg gaaactgaga attcacgaat gattcctatg
169551 tttttggctt gaatcactgg gtagatggtg gtgctattta ttaagatgaa
169601 taaactagta gaggaacaag ttagtaaaga aattaagagt ttgtggttga
169651 ccacattagt tttgagatgg ctgatatcta agtagaaagg tctccttggc
169701 agtatgatac acttatctgg actttaggaa aaagatagga gagacctata
169751 taaatatatg atttgcatgc agtaggtggc taatacatag ctgtggactg
169801 attgactcac ttaaatccta agtggaatca tggctcacag caaaaaatat
169851 gctagacaaa cgaaacgtct actgtgggaa acaattcagg actggcatac
169901 cagattggtt ccatttctaa tacaacaaca atctctcaaa gtcaaattca
169951 gtctctaagt aagtttaaga tatattccag tgtgtgataa gatttcaaga
170001 aaatgaataa tgcttagccc aagtacaaca agccctgtat tgaaataata
170051 cagttgacaa ttgtgtggta aatataggaa gaatagaaca aagaaagata
170101 tagttgtgat acactgggaa gtgagcagaa tatagggccc cctccaaaaa
170151 aaaaaatctg gtggggcgtg actgctcact cctgtactcc cagcactttg
170201 ggaggctgag gtggatggac tgcttatgct caggagttcg agaccagcct
170251 gggcaacatg gctgacttta caaaaaataa aaaaataaaa aatttagctg
170301 agaccctgac tttacaaaaa ctaaaaaaat tagctggaca tggtggcaca
170351 cgcctgtagt cccagctact caggaggctg aggtgggaga ttgcttgacc
170401 ctggaaagtt aagcgagact ctgtctccaa aaataaaaat aaaataaaat
170451 aaaatctgac catattttta aagagatatc attgaccatt tcaactgaat
170501 actagttttt atggaacttt tatgatacta taaaacttta agatatttta
170551 ttactcatca actactagta acaacatttg ttgaacaata agtaatgtac
170601 tactctttat aagattatag aattttcatg aaagacagat tcaagaataa
170651 agattcaatt gaggaaatag actactttcc aatatcaaat ttacaaatat
170701 tagtagaaga aacagcaaac aaagatacca gggtggtatt tattcatttt
170751 tgtcctgttt atgcagaatg atattcacaa atattgagta ttccctgaat
170801 aactcatagt aacattaaat gctgatacat tcagatagtc atgattcttt
170851 gtagaatata aggaatgcca atttatagtg ctagcaattt ctcttattag
170901 aaaaacctga aactcagcct attggctcac aaggaacagt tgtcaggtgg
170951 ggttttatta aagatgttgt aaagaggggt atatgttctg aaatgtaaag
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FIG. 5 CONT'D

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171001 gagaaaagca ctgtcattta ttgatagagt actcaagaga gtataaaata
171051 aaggctgttg gcctagagaa agaatctaag ggaaggacaa ttaaaatcca
171101 gacttattga tcagcaagat atatgtggat ttttgtaatt tggccctaac
171151 cttaactttt cagtttcatc tcccatcaca ttcgttattt ccctggagcc
171201 cctcattccc tcaattggaa tgcccttctt acattcccac aactcagatg
171251 cttctcatct ctcaaggctt agttcaaatg ccatctcctc cttgaagcct
171301 ttcctaatca ctacaattca ggattattct ttctgccctt cacactcaaa
171351 taacagcttg tctgtaattt ctctttaaca ctttttttcat tctgtattat
171401 gttatactgc agtaaattgc tataggtcta ttttcttcat tacaatcaat
171451 ttaattgttg gggatatgtt ttacttatcc tgttaccttc tcctctcctc
171501 ccctatcccc atctccattt ggtgtctatg tcatttattg ctactttctc
171551 ctgtccctac cccagtctcc gaagagtgcc tattataatg tttttcacga
171601 agcatgcata taatgaattt aatgaacctc aaactgaaga aatgtcttaa
171651 tactagagta ctctaatgag agtcaaactc tgacgtatac aaaatatgca
171701 tcatctctgg ccaacatttt ctcatttctt aattcaattt ccaaactaag
171751 accatctata aaaagtttcc actctaactt ttgggtataa ttagttctct
171801 ttttcctttc atttcgtgaa gcttattgaa accatctgtg atgcactgac
171851 agtttattct tgagaatcaa aagaatgttt ttaaaaaacc aagactcctc
171901 tgggtcagca cacttgtcat ttcatcccag cagtttgaca tctgtcattc
171951 tgagattaca acttcttaaa ttcagaaata catagggata tacagagata
172001 tatagggaat tctaattctc ctcagtactc tttaagtgat ttataattca
172051 catagatcat ttctacctga ctaccctcta gtatattgac ttttgatagg
172101 ttattgctta ctatttaaag aagtgctcca aaagataagc ttaggttaag
172151 tttcaaatcc cactaacatt aatatcctta ggtctgttaa agaatcaata
172201 tgtatcccac ctaatctatt ctactcatag ataagcttcc tgatggcaag
172251 gatcctgcct aattactgca ttttccacaa tggctaaccc atggcaggtc
172301 cccagtaaag gttaatctga tgaatgctga atcactattt tatagaactg
172351 aatcttatct tccctcttga tttgtaattt agatcatata gtctggacta
172401 taatgaactg tgtcagtgtg gagaaggcac tatctaggca tgcccatcaa
172451 ataatgacag cataatgaaa agtctctctc aaatttaatg aaagccaaaa
172501 tgtaagagca atggtctcag ctggcagtga gctacagtaa tcattacaca
172551 gaaaatggtc agaagaatga tcttgtgcaa gaatatttca atttaagaac
172601 aaagattaca ttatgtaagg gggaaaatga cttttgtgat tattgctgga
172651 agtaaacaag gccaggaaat acctggaaag cttttgtaaa atgccattca
172701 acaaacactt ggcctcctca atatagtcaa gaacgtatgt ttctaatcta
172751 gaaacatttg ctgactaaaa ataatgagtt aggccaggca tagtggctca
172801 tgcatataat cccagcactt tgggaggcca aggcaggagg attgcttgag
172851 cccaggagtt tgaaaccagc ctgggcaaca tagtgggacc ctgtttctac
172901 aaaaaaaaaa aaaaaattaa ttagctaagt gtggtggcat gcacttgtag
172951 tcccggctat ttgggaggct gagtcaggag gatcacttga gcctaggagg
173001 ttgagactat agtgagctgt gatcacagca ctaccttcta gtatgggcaa
173051 caaagcaaga ccctgtctcg ataaataaat aaaataatga gttagttctg
173101 tccaccaaaa aggcctagaa gcaataacaa tccaatgtca atgagcaccc
173151 ctagcaacca gattgtagtc tctaagaacc atttctctct aaaaagaacc
173201 aacatccttg gtagaaattt caggtctttg tcagcaaatg tacaagttgg
173251 gtggcatatc tcgttacacc agaaagcaaa gaagctctca gaaactattt
173301 tagtgatgtt aagagatatc acctagaagg ggccacagat ggccaattga
173351 gcattaaaaa aacatgtgta gaactaaata agacatatag aaaacattaa
173401 atccattagt tcatcagata ctagaagagt gtgtgtctct gtacatatat
173451 aaatatatat atatatttat acacacacac atatataaag gcaggggggag
173501 ggagggaaat aactcattag acaccgatga aagttcctag gatatcttat
173551 ttttctctaa aatgataatt aaaagaaaag aattgagcat ttattctgcc
173601 tctctggtat gaattatact tcagagtatt ctaacacctg aagctgtggt
173651 gggtgaatga cagtattctc tataaaacta ctttagccaa taaaaaatac
173701 aaaaggaatg acagaattca aaattacctt tttgtcacct ctagcaaaat
173751 gacggaatca ggcaatgttc atcaatggat ggtaaaacaa ttaagtttaa
173801 ggttgatggg aaactttata gtggattaga ctgtcaccaa ctgaacccat
173851 tgctcagtct tagcattact aaaagtacat ctcctaatgt gatgaaatat
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FIG. 5 CONT'D

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173901 gaactacata gcaccatcta caaaataact gccaaaatga aactgcttaa
173951 aatttttat aataaactta aaaaaacagg ataattggga gaaatttatg
174001 attttaacat cagccttctg gaacatagtc cactggccac agttctttat
174051 ggatcactga gagctgttca gtgacctcat tctcaagttc tctcagtacc
174101 ctggaatgtc atttgcctga gccagaagac aaattcattt agagtgagta
174151 agtccttatt tataatcttt tcatagaact tgggctccaa atacatttta
174201 ccatgtttaa taccacatat ccagataatt ctctttgata cacaagtatc
174251 aattgctttt tgtcttatat tctttatggt tagacttagg ttctatacag
174301 aatgttacta tcatactctc atttatatta ttgtttgatg tgtaaatgta
174351 ccaatcaagt tatgccctag gttttaaagt gacttcacaa ggataattcg
174401 gtaaaaatcc tgacttttaa gaagggctaa atctctagca ttcagtgcta
174451 aattagaaaa tggtaacagg ggctgggtgc ggtagctcat gcctgtaatt
174501 ccagcatttt gggaggccga ggcaggcaga tcacaagacc atctggctaa
174551 catggtgaaa cctcgtctct actaaaaata gaaaaaatta gtgaggcgtg
174601 gtggcatggg cctgtagtcc cagctactca ggaggctgag gcaggagaat
174651 cgcttgaacc tgggagggag aggttgcagt gagccgagat cacgccactg
174701 cactccagcc tgggcgacag agcgagactc catctcaaaa aaaaaaaaaa
174751 agaaaatggt aacaggtaaa actgattatg gtacaactgt tccactaccc
174801 tgtcctcagg agcatcaaca attcccgctc ccttcacatt tgaacagtcc
174851 tcgaatcttc ttaaaggtat attaatggta aggaacatgg gatttagtgt
174901 cagatctgca tggaaaacta ggctctgtca tgtattagcc atataacctt
174951 gagcaatatc cttactctct ctgagtttca gtttcctcat ctgtaaaatg
175001 gtaaaaaaat aatatgtagt cctcatagta ttggaaagta aacaacataa
175051 cataagtaaa gacattacaa cagctggcac atagcaaaca atgagtaaat
175101 ggtttataca aaacaggatg tgaaggaatg agttaaaagt ttgggttgaa
175151 aaacagaaga ataatcattg caatagagaa ttaaaaccag aggtgtagtc
175201 cccaaattgt cactaatgat ttcgtttgga gagattatgg gatgtacttt
175251 ctttttctgt tctacatttc taaaatgttt tagtttttaa ataataacca
175301 tgtattactt ttgaattgga aagaaatgga aatgttttca aatacgcatt
175351 ctcttcattc tcagtatctc cattaaagtt ctgatgataa tctcttcccc
175401 agactcttcc aagctggaat ctcagcctcc caccccaagc tattttctat
175451 gttgccacca gaactcctca tgtctagtcc ctggatgact ccatgttgcc
175501 tacagaatga cattcaaact ccctagtagg acttggaaag ctcttcatca
175551 tctggtctca gtatttccaa cttcatacgg caccttccc tctgactcac
175601 acagaactct agtcacacca gaattcttgt cattctccaa acacataaaa
175651 tctcttatat actttcacct ttctgtgggc cgaaatggca atgaacaaag
175701 tgatcttaga tagcacatgc tgaagatgac agaaccccct gatgaactag
175751 aacatctgct ctgcactatt acatgagaaa tatacttatc ttgttgtgga
175801 gccaattcac tttggggtct atgtgttata gaagctttgt atcccctaac
175851 taatagatga tacaaggatc tttccctttc cagagctgaa agaaacaatt
175901 ctccagtaaa acaattattt tgtacccaaa acaaaagtaa tcatagtaca
175951 ctactttgct cactagtgaa taataactgt gcaatcataa taatctaaat
176001 gtgattatta aaatttaaaa ttatgataaa gtttattagg aagataaggg
176051 aaaggaaata gaataatggt ggcagtaaaa agactatcat ctagtttatc
176101 ttgtcaaaga tactgcttaa aattgataag tgaaaaatta gtataagccc
176151 attatttgta acacagaggt aaatatatga tgaaaacaat gatgaacaaa
176201 taaaagagat aaaagtggtt gtctttgggt aataggactg aaaaatagag
176251 aagaaagagg caaagaggcc aggcgcagtg gctcacgcct gtaattccag
176301 cactttggga gtctgaggca ggcagatcac ttgaggtcag gaggtcgaga
176351 ccagcctggc caaatagtga aaacctgtct ctactaaaaa tacaaaaatt
176401 agccatgcgt ggtgatgggc acctgtaatc ccagctaccc gggaggctga
176451 ggcaggagaa ctgcttgaac ccaggaggca gaggttgcag tgagccaaga
176501 tcgcatcact gtactccagc ctggacaata gagcaagacg ctgtctcaaa
176551 aaaaagaaag aaagaaaaga aaaaagagac aaagaactgc tatttattga
176601 tatatctgat ttttaaacta tgtattattt tgatacaatt aaatatttaa
176651 aatgtacaag agagaaaatg aacacaggtg agatggacta ggtatgaaac
176701 agcagaattg aaaacaggaa tacaataaaa taaagagacg tcctggtttg
176751 agatggtgga gtagaaagac aaggggagga agaagatggt ctgctgtcct
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FIG. 5 CONT'D

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176801 caagctttgc tacacctaga tctccagtct ttatgattca gagtagcctc
176851 caaatgccca agaaacattt ataaataagt atacataaaa ataataatca
176901 gggattctat cacccacctc gacttcagtt ttatggcttc cctatagacc
176951 catatacatt caccttggca gatgctagct actggaaaaa ctctcatacc
177001 tgtatttcat ttcccagaac cagaatatat atgtgtgtgc ttatgtgcgt
177051 ggtgagggca ttcaatctca tgcaagcagg aaaagggtaa gtgggcagct
177101 aggaataggg cagataggga agcataagca atactgtaat aggaagagac
177151 agaaatagca gaaatgtgga ggaaaggaag gcagtaaatg gaaacataac
177201 atttagaaac attaaggtgc aaagaaagga ttttgctgca gtaatcatag
177251 agacagatct ggagggctga cctcacacat gacaaatacc tttactgcag
177301 ttccaaaagg gaactcatca tatctcaaat gagactaatg ctatgcactt
177351 ttaacaacta ttaaaaactt agccctactt gaaaggaagc catgtaccta
177401 ccctttgagg agcataaaca ggatatgagg atgagcacta atatactcca
177451 cagtaggact ccgagtgcct atctgtcttc tcaagatgtt gttaaatatc
177501 tgggtcacat ctttttttcc ctgttaaaga aacaaacaga aattaaattg
177551 tacactctaa atggatgaat tgtatagtat gtggaatata tacatatata
177601 tatacacaca gacagaaatg gtaccatcct ttctaatatg caaaaaaacg
177651 ttaacttact cttcccatag acccctaaca agctgtgctt gcaaacacag
177701 tctacaaaat ggatgcagct ccttgccaca ggatgtgtgc tgggggaaat
177751 ttgaccaacg agaaatccat ttcccacaga gcatggaagg acataaagtg
177801 aatatgacag aactgaattc tttgtttttt cactgtctac ctttatgcaa
177851 gaaaaaaatt atgattatca tttttaaacc ttcatgaata aggaaggaaa
177901 acagaagaag aaaataagat tttagtaaaa tgtaggttag aaccaaattc
177951 ctttttctta gatctacttt ctagtatttt ttgctttcac gttatcactt
178001 tattcactgt tcttcaccct agtgccttga cttaaaaaat aaagtgggtt
178051 ttccattagc tggaaatatt tgatctaggt gatcataaca aatcacatct
178101 agcctagagg aacagaagag atcaccgaat cagtgagaca gaggaaccag
178151 atatgcaatc atggataggg cttcttagag tcctcatgga caagacctgc
178201 actctcatac accttacaac ctgtctagcc tggttttcca aaagaaatct
178251 tggactggac ctgagtttac tatatgaaaa ataagtacaa gaatgactga
178301 tatggtttgg ctctgtgtcc tcacccagat ctcattacga attgtaatcc
178351 ctataatccc tatgtgtgga gggcaggacc tggtgcgagg tgattggatc
178401 atgggggtgg tttccctcat gctgttctca tgatagtgaa tcagttctca
178451 cacgatctga tggtcttata tgggactctt tccccttttgc tcattcactc
178501 ttccttctcc tgctgccatg tgaaggtctg tgcctgcttc cccttccgcc
178551 atgattgtaa gtttcctgag gcctccccag caatgtggaa ctgtgactca
178601 attaaacccc tttccttttt aaattactca gtctcaagta tttccttata
178651 gcagtgtgag aacatactaa tacaatgaca ttgcattctc aatcagtatg
178701 gccctagttc tggccttcat ctctcaacta aactatgaaa gagcttgctt
178751 cagttactgt ctccacttca aagcatcctc accctgcaga gtgagctagc
178801 tagaaatgca aatatgacca tgccatctct ctccttaaac acttcaacgt
178851 ctccctttg cttagaaaaa agtccaatac aaaaaggcca ggcgcagtgg
178901 ctcacgcctg taatcccagc actttgggag gccaagtggg gcagatcaag
178951 aggtcaggag ttcaagacta gcctggccaa tatggtgaaa ccccatctct
179001 agtaaaaata caaaaattaa ccggctgtgg tggtgtgcac ctgtagtccc
179051 agctacttgg gaggctgagg tagaagaatt gcttgaaccc gggaggcaga
179101 ggttgcagtg aaccgagatc gtgccactgc actccagccc aggcaatgga
179151 gcaagacttc atctcaaaaa aaaaaaaaaa aaaaaaaaga gacagaaaga
179201 aaggaaagag agagagagag acagaaaaaa agagagagaa agagaaagaa
179251 aagaaagaaa gaaagaaaga aagagagaaa gtccaatacc cttcaatgac
179301 ttgacagcag ccaacttttc cagtctcatc agctaactat cacttccaat
179351 tcctacatca agttctatta gtaccaaatt gctgcaccac atatacacaa
179401 cattttatgg ttctatatct ttgttgatgc tcttcctttt ttcatgaact
179451 ctgtcattct ttaagattca gttcaggagt tttctcccct gggatgagtg
179501 cccctctctg tactacaacc atgtcctttg ccacatcgat cagtacctcc
179551 tctttcccac tacctctacc tccaccttca cagcagcaaa tacttactga
179601 gtgcttactc tgtgccaggc acttatgcta agagctttac aggtattatc
179651 caattttcac aacaacctta ttttttaaa tttcatattc tttttgttat
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FIG. 5 CONT'D

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179701 ttttttttctg gcatgcatac aaccacctta taatatacat attataaaaa
179751 agaaattaag gatgtataat atatgtttta taaaatgtac aaatgtaaat
179801 atgtatatat acatattata aataaggaaa ttaaggatta ttgagattgc
179851 ctagatctca ctgtcctgtc agatactgat aaatatctac aagcactaac
179901 accatccaag aaaacatgac ctcaacaact gaactaaata agacaccagg
179951 gaccaatcct gggacaatag agatatatga cctttcagac agagaattca
180001 aaatcactat tttgaggaaa atcaaagaaa ttcaaaataa cacagagaaa
180051 gaattcagaa ttctatcata aatttaatac agattgaaat aattaaaaat
180101 aatcaggtag aaattctaga gttgaaaatg caattgacat gctgaagaat
180151 gcatcagagc ctcttaacag aactgatcaa gtagaagaaa gaattagtga
180201 gcttgcagac aggctatttg aaaacatgca gttagaggag acaaaagaaa
180251 aaagaataaa aaacaatgaa gaatgcctac gagatctagg aaatagtcta
180301 gaaagggcaa atctaagact tactgacctt aaagaggagg tagaaaaaga
180351 gataggggta gaaaacttac tctaagagat aatatccgag aacttcccaa
180401 acctagagaa agatatgaat attcaagtat aagaaggtta tagaacacca
180451 agcagattta aaccaaagaa gactacttca aagcatttaa taatcaaact
180501 cccaacatca aagaaaaaaa aatcctaaaa gcagcaggtg aaaagaaaca
180551 aataacatac aatggagctg caatatatct ggcagcagac ttttcagtgg
180601 aaaccttaca ggccaggaga gagtggcatg acatatttaa tgtgctgaag
180651 gaaacaaatc ttttacccta gtatatctgg caaaaatacc cttcaggcat
180701 gaaggagaat taaagacttt cccagacaaa caaaagctga gggatttgat
180751 caatactaga cccatcctac aagaaatgct aagggtagtt ctccaacctg
180801 aaagaaaagg atgttaatga gcaagaagaa atcatcttaa ggtataaaat
180851 ccactggaaa caggaagcac atagaaaaac acagaatagt ataatactgt
180901 aatggtggtg tgtaaactac tcttgtctta aggagaaaga ctaaatgatg
180951 aaccaaccaa aaataataac aacttttcaa gatataaaca gtgcaataag
181001 acataaagag aaacaacgaa aagttaaaaa gcaggggggag gaagttaagg
181051 tgtagagttc ttattagttt tctttctgtg catttcttta tgtaattagt
181101 attaagttgt catcaattta aaacaatggg ctataagatg gtatacgcat
181151 gcctcatggt aacctcaaat ataaaaatac aatggataca caaaaaaata
181201 aaaaacaaga aattaaagca tagtgccaga gaaaatcaca ttcattaaaa
181251 ggaagataga aaggaagaga agaaggaaga gatgactaaa aaacaaccag
181301 aaaacaaata acaaaatggc aggagtaagc ccccacttgt caataataac
181351 attgtatgta aatggactaa agtctgcaat caaaagacat aaagtggcta
181401 cttgggaggc tgaggtgtaa ggatcacctg agcccaggag gtcaatggtt
181451 cagtgagctg tgattgtgct actacactcc agcctggatg acagagtgag
181501 accctgtctc aaaaaaaaaa aaaagaaaag aaaaagaaaa aagacacaga
181551 atggctgaat ggatgaaaaa aaaacaagac ccaaatgatc tgctgcctac
181601 aagaaacaca tctcacctat gaagatacac atggactgaa aataaagaca
181651 tggaaaaaga tattccatgc taatgaaaac aaacaaacaa aaccaagcag
181701 gagtagctat acttacatca gacaaaacag atttcaagac aaaaactgta
181751 agaggagaca aagaaagtca ttatataata ataaaggagt cagttcagca
181801 agaggattta acaattgtaa atatatatgc accaaacact agagcaccca
181851 gatatgtaaa gcaaatatta ttagagctaa agtgagagac acatcccaat
181901 acaacaatag cagatcttag acctgggaca tgataacttt taccactgtt
181951 actcaacata atattggaag tcttagctag agcaatcaaa caagagaatg
182001 aaatgaaggg caaatattat tagagctaaa gtgagagaca gatcccaata
182051 caacagtagc agatcttaga tttggagcat gacaactttt accactgtta
182101 ttcaacataa tattggaagt cttagccaga gcaatcaaac aagagaatga
182151 aatgaagggc atccaaattg gtagggaaga agtcaaatta tccttgtttg
182201 cagatgataa aaccttatat ttggaaaaaa ctaaagactc cacaaaaaaa
182251 ctattagaat tgatgaacaa attcaataaa gttgcaggat acaaaaatca
182301 acatacaaaa atcagtagca tttctatatg ctaacagtga acaatctgaa
182351 gaagaaatca aaaaagaaat cccatttata atagcaacaa ataaaattaa
182401 atacctagaa attaacttaa ccaaagaagt aaaaaaatct ccataatgaa
182451 aactataaaa aaatggatga aagaaattaa aaaggacatg caaaaaagga
182501 aagatattcc gtgtccatgg attgaaagaa acaatattgt taaaatgttc
182551 atactaccca acgtaatcta caggttcaat gcaatcccta tcaaaatacc
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FIG. 5 CONT'D

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182601 aatgacattc ttcatcgaaa tagaaaaaac catcctaaaa tttacatgga
182651 accacaaaaa acccagaata gccaaaacca tcatgagcaa aaagaacaaa
182701 actgaagaaa tcacatgact tgactttgaa ttatactaca gagctatata
182751 gtaaccaaaa cagcatgata ctggcataaa aatagacaca cagaccaatg
182801 gaacagaaca aagaatccag aaacaaatct acacacctac agtgaactca
182851 ttttttacaa aggtgctgag aacatacatt gaggggaaaa gacagtcttc
182901 aacaaatagt gcagagaaaa ctgaatatcc acatgcagaa gaatgaaatt
182951 agacccctat ctcttgtcac atacagaaat caaatcaaaa tggattaaag
183001 acttatatct aagatctatg aaactatgaa gctactaaaa gaaaatattg
183051 gggaaactct ccaggacatt ggtctgggca gaaacttctt gagcaaaacc
183101 ccacaagcac aggcaatcaa agcaaaaatg gacaaatggg accacatcaa
183151 attgaaaagc ttctgcacag tgaagggtac aatcaacaaa gtgaagagaa
183201 aacctacaga acacaggcct tctatgaaaa ggtgctcaac atcactgatt
183251 atcagagaaa tgcaaatcaa aactacaacg agatatcctc tcacgacagt
183301 taaaatgcct ttcatgtaaa cgtcaggtaa caactattgc tggtgaggat
183351 gtggggaaaa ggaacccctc atatgctgtt ggtaggaatg taaattagta
183401 caactactat ggagaataat ttggaggttc ctcaaaaaac tacaaataga
183451 gataccatat gatttagcaa tcctactctt aggtatatgc ccaaaagaaa
183501 ggaaatcagt atatcaaaga gatatctaca ctcccatata tgttgcagta
183551 ttgttcacaa tagccaagat ttggaaacaa cctaaatgtc caaaaacaga
183601 tgagaaaatg cggataaaga aaatgtggta ccctatacac aataaagtac
183651 tattcagtca taaaaaggaa tgagattctg tcattgcaac aacatggatg
183701 gaactggagg ccattatgtt aagtgaaata aaccaggcat agaaagacaa
183751 acatcagatg ttctcagtta tttgtgggat ctaaaaatta aaacaagtga
183801 actcatgaaa atcaagaata gaagcatggt taccagaggc taggaagggt
183851 agcaggggag tgtgtcaggg tgagatgggg atggttaatg ggtacaaaaa
183901 acaatagaaa caatgaataa gatctagtaa caccaaggat aaatgcttga
183951 gaggatggat acccaatttt ccatgatgtg gttattacac attacatgcc
184001 tgtactaaaa tatctcatat acactaccta ctatgtaccc acaaaaatta
184051 aaaagaaaaa aagagaaaaa agaaataaat aaaaacccat gctctcacga
184101 ggtcaggagt ttgagaccag catggccaag atggtgaaac cccgtctcta
184151 ctaaaaatac aaaaattagc taggcttggt ggcacgcacc tataatccca
184201 gctactcagg aggctgaggc aggggaatcg cttcaaccca ggaggcagag
184251 gctgcagtga gctgacatcg tgccattgca ctccagcctg ggcaacaaga
184301 gcgaaactct gtctaaaaaa aaaaaaaaaa aaaaaaaccc atgctctcca
184351 aacaccctcc ctccaaaacc caacccccca tcaaagccca aaaaacttaa
184401 tagtatgaaa aacaaacaat ctgccaggca tggtggctca cacatgtaat
184451 cccagcactt taggaagcta aggcaggcag atcaccagag gtcaggagtt
184501 cgagaccagc ctgaccaacg tggtgaaacc ttgtctctac taaaaataca
184551 aaaattagct gggcgtggtg gtgcatgcct gtaatcccag ctactcggga
184601 agctgagaca caagaattgc ttgagccctg gaatgagctg agattgtgcc
184651 actgaattcc agcctgggca acagaccaag atcctgcctc aaacaaacaa
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184751 ataatcccag gcaagaaatt actttggaaa gctgaagcag gattacttga
184801 gccaggagtt tgagagtagc ctgggcaaca tagcaagacc ccatctctac
184851 ttaaaaaata aaataaaaat aaacaaaaca gagaaaatgg ctaaaagaca
184901 tgaagacaca ttttaccaaa gaggatatac agatggcaac aagcacataa
184951 aagacgttca acattgttag ccattaggga aatgaaaatc aaaaccacaa
185001 tgaaatatta ttacatgcct atcagaatgg ctaaaataaa aaatagcaac
185051 aacatcaaat gctggcaaga atgaagagaa actgtactca tacattgtag
185101 tggaaatgta aaacagtata gccaatctgg aaaacacttt agcagttcct
185151 gaaacagcta aacatgcagc taaccataac agcaattgcg ctcttggcat
185201 ctatcacaga gaaatgaaaa ctatgttcac acaaaaacca attagtaggt
185251 gaatcttcaa tttaaaagaa tactccaaaa tcagttgctc tcataatttt
185301 aaaacactaa aaaatgttta taggccgggc acggtggctc atgcctgtaa
185351 ttctagcact ttgagaggcc aagcctggag gctcagttga acccaggagt
185401 ttgagaccag tctgggcaac atggtgaaac cccatctcta caaaaaaata
185451 caaaaattag ctgggtgtag tggcacatgc ctatagtctc agctatttgg
```

FIG. 5 CONT'D

185501 gaggcttatg tgggaggatc acttgagcct agaaggtgta ggtggaaggt
185551 gtaggttgca ataagctgag atcatgccac tgcactctag cctgggtgac
185601 agcgtgagac cctgtctcaa aaaaaaaaaa aggttgaatt acataaattt
185651 tatttatact gatgttaaag actatatttg ctgtataaaa aaagatatag
185701 ctgtaagcat aaattgattt taaaatgaaa gaaatcatct gtttcgttca
185751 aacctttcta gaccctgcag tgtaatattg cagaataaat atcaaccctc
185801 tttgaaatgt cataggaaca tgtttttcat acttcccagt gaaatgtcac
185851 aagaacattc catacagcat tccagtagaa atgaagctct gcagaactct
185901 atccaacttt tacatagagg aaaacattct tctagttcat tagcaaatgt
185951 gtgcaaaggc aaaggaagcc ccctgtggat aacaaaagca ggttctgcta
186001 ccagggaccg cttcccaaaa cagaggaaag gattagaata gaaaggatta
186051 cagaacactg aaacaggtac aagctggtga ataatgatct ctacattaca
186101 cgttaatctt tgtagctatc aatttgtcat gccaaatcta actggagtga
186151 aaccttaact atttcaaaac cagtttttg caacccgcag gctgccagat
186201 ctcaagccct ggactcagaa gtggccagaa aaaaaagaca gaaaaaccct
186251 aaaaatatat ttgataataa agaagcaaca tccagaaatg gcccaaaatg
186301 ccaaaaatta gctggcaatt ctaaggttac atacaatgta accaataaga
186351 tcccaaacct gaagaagccc ttgtgtttgc tggcaaattc aaaaaagtca
186401 gctttaacat gaaatgctcc ataattattt gctgaatgaa tgaattatat
186451 atatggaagt attaactcaa atcaaataag aaaagagaaa aggagggaag
186501 aaagaggtgg tgaacagcag tcacagcaac cagaatgatt gctgaaaaag
186551 agcatccctc acagatagca tagatgagaa aagggaaatg agaaaagaag
186601 gcggagacta gaaaacaccc acttcaaaac acaagccatt gacttttata
186651 tagaatatat ataaagaatt ctcaaaattc agcaacgaaa ttaaaaaggg
186701 gcaaaagata tgaataaata cttcataaaa gaagagatat ggtagcaaaa
186751 atgtacatga aaagatgctc aacatcatta gtcattagag aaatccaaat
186801 taaaatcaca atgagatatc acaaaccctt attagaatgg ctaaaacaat
186851 aaaacaaaac aaaaagttga cattccccaa cagccctact cctaggtatt
186901 tatctaagtg aaaggaaaac ctatgttcac actaaatact atacataaat
186951 ggttaacggc agctttattt gtaattgcta gaaactggaa atatgtaaaa
187001 tatcccacaa gtggggaatg gataaatgat ctgtggtcca tccatgcaat
187051 ggactactac tcagcaataa aaagcaacag actcctaata catggcaacg
187101 acatggatga atctcaaatg cgttatgctg acagaagcca ggctcaaaag
187151 gctacatata tatgattctg tttacccaat ctttttgcaa tggtgaaaat
187201 ataaggactg aaaactgatc aatggttgcc agaggccgag gacaggaaaa
187251 ggagatgatt acaaagaggc aaaggagatt ttttttttt tttgagacaa
187301 agtcttgctc tgtcacccag gctgaagtgc agtggcataa tctcgactca
187351 ctgcaacctc cacctgccag gttcaagtga ttctcctgcc tcaacctccc
187401 gagtagctga gactacaggt gcacaccacc acacccggct aatttttgta
187451 tttttagtag agacagggtt tcaccatgtt ggccaggatg gtctcgggct
187501 cctgacctca tgatctgccc acttcggcct cccaaagtgc tgggattaca
187551 ggcgtgagcc accgtgccca gccggcatag gagaattttt tagggtgatg
187601 gaactgttgt tcttcattac agaactgtgc actaaaaagg gtgaatgtta
187651 ctatttataa attgtatcat aatttttaaa aatgaaaatt atagccagtg
187701 aagtcaggga cttctctatt cttgctggtg tgttgcgggg gagttgaggt
187751 gggtgggagc aagtggttgt gctgaatttc agtagcagaa gtggataggc
187801 agaacagtct accgggtgag gggtagccac tgaatggatt agtgagggat
187851 cttgctgggg actaaaattc aaattggact aatttataga tattgggaaa
187901 gatataggga atgaaactac aagctagctc aaagttgctc tcaaaaaaat
187951 ttaaatatat taaatttata tattacatga aatccatctg tgggaattta
188001 tatgggagat tatctccccc actgccccaa tatctttgtc attctatttt
188051 ctctgcaggc tggcttcttc tgtttcttta ggccacatag tgaaaaatac
188101 gaccactgat ggaaaaactg catttactat ctttagcacc tggctaaaca
188151 ctggggttct gtctcagttc tagttccaga attcctgcag aaagcctctg
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188251 ccagggtgtc atatcaccca aaatggttgt tcccatggta accatgtgag
188301 tggagaagga gggagcattc cccagaaagc agagggagtg ggcagacaca
188351 acactttata cacagcacaa gcagtcttca tccttatgca gattacattc

FIG. 5 CONT'D

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188401 cttaaaatgt ctggtacgat caaactaatg gtcactgtct taattttatt
188451 acaaacaatt aacaggtttc acatctaatt aagagcctga tgccaaatgc
188501 catttttaat cacccataaa ttatattcct ttataggata aaggccttct
188551 aaagcttata ttcattaagc tttagggcaa tagggtaatg ataacataaa
188601 atgccatttt ctatgacata gtatttccct acctgagatt gtaaattctt
188651 taatttgtcc agtgaggggc acaaaatata tacacaatca aataaaatca
188701 agaccaaaca taattaaata aaatcaatgg ctgacacgca tagtaagcat
188751 ttcaaattgt taaatgtata atgtacagtt aaagctggta ttttaaggct
188801 ttatgatttc tgttatattt ttacagtaat aaaaccaaag gtaaagagcc
188851 attttttttt ctttttcttt ttctttcttt ttttttttt ttgagatgga
188901 gtttcactct tattgcccag gcagaagtgc aatggtgcga tcttggctca
188951 ctgcaacctc ctcctcctgg gttcaagcga ttctcctgcc tcagcctccc
189001 aagtagctag gattacaggt gcatgccacc atggccacgg ctaatttttg
189051 tatttttagt acagataggg ttttgccacg ttggcgaggc tggtctcgaa
189101 ctcctgaatt taggtatccc aaaatgctgg gattacagac gtaagccacc
189151 acgcctggcc aagggccact ttaatcaggt ccagggaata gaaaaagatt
189201 attagaggat aaacatttac aaaatgtagg actacaaaat ggcttaatga
189251 aaagtggaaa agttgatcct ggagtgtttg ttttgctatt ttttttttctt
189301 ttgagacagg gtctcattct attacccagg ctggagtgca gtagcacaat
189351 cttggctcac tgtagcctca accacctggg cccaggtgat tcttccacct
189401 tagcctcctg agtagctggg accacaggca ggcatactct gctaattttt
189451 tttatttttt gtagagacag ggttttgcca tgttgcccag gggggtctca
189501 aactcctggg ctcaagcaat cctcccacct cagtctccca aagtgctggg
189551 attataggcg tgagccactg cactgggcct gttttgctaa ttttttttaa
189601 tgtagcgaga aataatcatt agggattaag ttaccataga agacaatttt
189651 ctgcttcttt gagctgctta ttcagcctga acagttcact ttgcatccac
189701 cctggttttg caaggcacac ctgcctttaa aatgaatgta tcagacctta
189751 caggcaatac attttccctc ctttgatctc ttatcacgtt gtgtttcaaa
189801 acatcaaaga gtctaaagct gtgtcttgaa tagtagccaa acctcaaaaa
189851 acacagctga gtttgatcct gagcccataa aaatcagaag ccttgcaaac
189901 tcagccacaa atcatttttt gaacctcata atagtgtgct gaaatggttc
189951 ttttctgtct gcaattttaa ggcttaaagc attagataaa aatttatagc
190001 tacataatga gatttttatt taacccaaag gccgacctcc taactagcca
190051 ttattcacat gatgatagcc ggatcctcca gtattgtccc taccccagtg
190101 ggccactttc ctctagattc ctgacagaga agtaggtttg tcaaagattc
190151 ctgagtcagt ccctgccatc cagtttaagt cagtgctgcc agccaccatc
190201 actgctgtca gctcagggtt ccaaacccct gctcccagcg cccttcaacc
190251 cccattcatt gccttgtttc ctgcaactgc ttatttttttc agcactcagt
190301 ttactccaag tgtagaaaac caccccttct tcactcaact tgtttttttgt
190351 tgttgttttt gtttttgttt tgtttggaga tggagtctcg ctctgtcgcc
190401 cagtctggag ttcagtggtg caatctcggc tcactgcaag ctccgcctcc
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190501 tacaggcgcc cgccaccacg cccggctaat ttttatattt ttagtagaga
190551 tgaggtttca ccgtgttagc taggatggtc tcgatctcct gaccttgtga
190601 tccgcccgcc tcggcctccc aaagtgctgg gattacaggc atgagccact
190651 gcgccggcct caacatgtat tattagtaca aagttccttt acaaaggttt
190701 aaggtgaaca aaggataatc acagcacagt gcagaaacac cttcaagctg
190751 aagtctacag atcactttta tgaaaggttc ctcagtcttc ctgatcatct
190801 ttctccatga acatcttcct tttgtcatgg ttctggatac ctctctctcc
190851 ctccctccaa acctttctcc tttcttctat ttcctactcc tatcaacctt
190901 ggccaaagag ggcatttctc aaatttctgt tacttttctc tgccaaggaa
190951 atctaagctt ttttctttca gtcttttcct tacagacatt gcctagagac
191001 ttcagccttt caaactaaca aaaaagccaa tcaaggtatc ttctaaacaa
191051 aaattcactt tttttctctg taaggaatgt gccattctcc taggttatct
191101 ggcaaaagct gtagtccatc cttaaaataa taatttttcc tttctgttat
191151 caaaacatac cagaaatttt acagtcaaat gactgttctg ctatccaaag
191201 aagcaccagg agaggctatt cacgtactga aatcatataa tcatcacccc
191251 aaagagtttg aattatcttc taaacaattt actgattcct tcagaaaaat
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FIG. 5 CONT'D

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191301 ggctcactgg tatgtcccaa taccttcttt tggtccaatt cttttacctc
191351 tgctttgata tctcattctc attactacat tcattcaaac aattcacaaa
191401 ttaacatgcc actaggtgtg gcaaacacag tcctcgtact caaggtaaca
191451 cagaagtggc tgtcccagtg caagccatga accaagagac atgggggtgg
191501 gggttctgtg tcgctggagt aagtctgaag tcagaaggaa ttttatcaag
191551 ctgtcagtag cttacataga tactttaggc ttgagaagga gagttgctgc
191601 ctgcaggctg atcatccatg cctccagttc atagagataa catagtacat
191651 ttctataagt aggctaataa tgctaggaat gctggctgcc tccttcctga
191701 aaatactgta tgtagttgga atgcttaaaa tggaactgta ctaaactttc
191751 actccttttc attcattcat ttattcattc aaccaggaag tatatatttt
191801 tctacaggct agagaaggat aacggctgca tctatggagt atcacattca
191851 cttataatta tgttctaggt atgtgtcacg tcaattgaat aaataaagtt
191901 aagaattgcc tatcttatta tcacaataac aaatcttcat aatagttttg
191951 aatcatcagt ttaaaaacgt attatatcta gtattttatt ctggagggaa
192001 ggcaagtata taatacattt tattttaaaa attaaagtaa tccacaagag
192051 taatcaattt aactctgcat ttgaaggctt aatcttcagc tatatggaaa
192101 attcaaatgt tcagaaagat acttcttttc tccaaggatt ccagagaata
192151 aaagtttact tgataaaaat gtacaagtct attttaggca attaaatgtc
192201 ttaattccaa aataatttt aaatgaactt cttctcaaaa tttttaattt
192251 atatttgatg tgccacataa aagaagggga acttgcataa ctgtttctta
192301 cattccactt ttgttatctg agccaatgcc aaagaaagtt ataaggcacc
192351 caaagttttt ctttggtata ctcctcccta actccccaat tcttggaaag
192401 cactttgaac ctatgaggtt ctgtggctgc tcaaagcttc tacaggtcac
192451 tgaacctgac gacatctcat ccctgactca ttcttcaaaa cataaccatc
192501 cttagtcata ttccttctag cactccactg caaattgggt taatctcata
192551 aactaactca agcgtactta tgaattaatg acgacagtag cttaatatgc
192601 tgctgttctc agagaaacaa gcaaaacaac agaaaattta taaaactata
192651 ctactataag aatagggaat cattttccta tttatggtca ctgaccaact
192701 aaatctaaaa aaaatcaagg gttataacaa aaacaaacca gcttacactt
192751 aactttagtt cctgagtttg agaaaaagag gaaatgaaaa aatactacta
192801 cttgacattt gtatacagtt tgcatttata tttagtgtcc ctatataaca
192851 caacatatat atgtatatat ttttatttag tttaatattt aaaacaatgc
192901 agtaagttcg tattattcct attttataga tgagaaaact taagctcaaa
192951 gaggttaagt tactgaccat gaaagagcag agctgggact ctaaacaatt
193001 ctaattccga gtcaagtgtg tttttcacta tgccacagct tctacaagtg
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193101 atacagtaag actatacttt aatttcacat atagctgatt ttaaatctaa
193151 gatggagacc taagatggag agggagagta agcaagccaa gcaagaggaa
193201 aaagaaaaag attctgagca aactgtcgca aagacaaaaa accaaacact
193251 gcatgttctc attcataggt gggaattgaa caatgagaac actgggacac
193301 aggaagggga aaatcacaca ccggggcctg ttgtggggtc gggggagcgg
193351 ggagggatag cataaggaga tatacctaat gtaaatgacg agttaatggg
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193451 tgtgcgcatg taccctagaa cttaaagtat aatttaaaaa aattgaaaaa
193501 aaaaagaaaa agattatggg tcagaaaatg ccaaaggcag agaaagagat
193551 agaataagga agggaaagaa agaaaaagac agctgtaact gaaaggatga
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193651 aactggactg cacgcctcct ggctctgcac tcctcctcct ctgcttcggc
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193751 ttccacagat ccccaaagcc ctgacctgat cttggtctaa tcacagtaat
193801 cactgtcatt agttttcctt ccacttattc agtgaacaaa actaaaagct
193851 attcactttg catatctcct ctatctctga gaatgaatgg agacccaagt
193901 acctacctga tacgaacaaa attcgtatta tgatagaaac aaagcaacaa
193951 agccaaacca ggacttctgt cgcctcaaca gtcaatgccc aaacttgtct
194001 atgtatccat ttctcactga aaaatcacca cctctgagtt acacaataga
194051 taataaaatg actagacata ttcaccactt acatttctaa gcttttgttt
194101 tagttagtca gtttattatt taggtaaatt aggtataatt gccttcaaaa
194151 ggagataagt atattactag cacttaacac atttcttaaa tcattggtat
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FIG. 5 CONT'D

194201 aatatgttca ttaaaagaac tgtctgaatt tgaagctctg aagtaagtga
194251 gtgactttgg gcaaattact taatatcttt gaactttagg ttcttcatct
194301 ataacatggg gctaataata cagtattaaa cacaaaggta gttttaagaa
194351 ttcaacgagt tgaatgcttg aaactgtacc tggcatatag caagcattca
194401 acaaatgtta cttcttatta ttacttctat taaccgttat ctttgctacc
194451 tagctgcata aaacttaact atagtttggc tttttgcttt tgtaaaaaat
194501 agattaattg tagacatttt agaaaaaact ttaaaaaata acacatggaa
194551 agccataatg aaaagcaaaa gttgaatagt agatagatag atagatagat
194601 agatagatat taaaattgaa aagcaccact gacatccttt tacagctggc
194651 ttacctcaaa gtctatcagc tgcaggtcag ctatcagtgt cactagcagg
194701 ccactgctgt agagttcttg tgctagctga gccactgctt ctgttggggg
194751 ttctttctcg tttgtaccac acagaatttc tttcattgct tgcagtgatt
194801 tagacacttc ttctgaagcc tagtgaccaa aacgtatgct aacggttaaa
194851 agaataaaaa tgtttaggcc ataaacaaac aaacaaataa tccaaaaaac
194901 cacttcttgg tcttgggctc tgtttattta taatgaatgg cacagttaca
194951 aacaaacaaa aacagtgagg ggaatcacca tgtttgggtg gacctagttt
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195051 cggggctata caagaaactt tttcggctct ccctctccct ctccctctcc
195101 ctctgtctcc ctctccccac ggtctccctc tcatgcggag ccgaagctgg
195151 actgtactgc tgccatctcg gctcactgca acctccctgc ctgattctcc
195201 tgcctcagcc tgcccagtgc ctgccattgc aggcacgcgc cgccacgcct
195251 gactggtttt ggtggagacg gggtttcgct gtgttggccg ggcaggtctc
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195401 gagtgcagtg gcgtgatctc ggctcactac aacctacacc tcccagccgc
195451 ctgccttggc ctcccaaagt gccgagattg cagcctctgc ccggccgcca
195501 ccccgtctgg gatgtgagga gcccctctgc ctggctgccc agtctggaaa
195551 gtgaggagcg tctccgcccg gccgccatcc catctaggaa gtgaggagcg
195601 cctcttccca gccgccatca catctaggaa gtgaggagcg tctctgcccg
195651 gccgcccatc gtctgagatg tggggagcgc ttctgccccg ccgccccatc
195701 tgggatgtga ggagtgcctc tgcccggccg agaccccgtc tgggaggtga
195751 ggagcgtctc tgcccggccg ccccgtctga gaagtgagga gaccctctgc
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195851 ccccgtctga gaagtgagga gcctctccgc ccggcagcca ccccatctgg
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196601 ccggccagcc gccccgtccg ggaggtgagg ggcgcctctg cccggccgcc
196651 cctactggga agtgaggagc ccctctgccc ggccagccgc cccgtccggg
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196751 gggaggtggg gggggtcagc ccccccgccc ggccagccgc cccgtccggg
196801 aggtgagggg cgcctctgcc cggccgcccc tactgggaag tgaggagccc
196851 ctctgcccgg ccaccacccc gtctgggagg tgtgcccaac agctcattga
196901 gaacgggcca ggatgacaat ggcggctttg tggaatagaa aggcaggaaa
196951 ggtggggaaa agattgagaa atcggatggt tgccgtgtct gtgtagaaag
197001 aagtagacat gggagacttt tcattttgtt ctgcactaag aaaaattcct
197051 ctgccttggg atcctgttga tctgtgacct tacccccaac cctgtgctct

FIG. 5 CONT'D

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197101 ctgaaacatg tgctgtgtcc actcagggtt aaatggatta agggcggtgc
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197201 tcatcaccaa tccctaatct caagtaatca gggacacaaa cactgcggaa
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197451 aaaatattat aagtattata aaatttattt atataaaaca gctctttggt
197501 atttctactt agtcaacata cactaaataa tctttttttt ttttttttag
197551 atggagtctt gctctgttgc ccaggctgga gtgcagtggc acaatcttgg
197601 ctcactgcaa gctccgcctc ccaggttcat gtcattctcc tgcctcagcc
197651 tcccaagtag cggggactac aagcacccgc caccacgccc ggctaatttt
197701 tatactttta gtagagacag ggtttcactg cgttaaccag atggtctcga
197751 tctcctgaac ttgtgattcg cccacctcag cctcccaaag tgctgggatt
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198051 atccatttat tcctcacaca gaatcactgt ctttttgct atctatgaaa
198101 cttaaaaaaa actcactata ttttaaagaa tactaggcaa atccatagag
198151 gcagaaagta catagattag taggtattag ggcctggggg agagggaaat
198201 aagtaatgac tactaatggc tccagggttt cttttgggag tgatgaaaat
198251 gttctagaat tagatagcgg tgagttgcaa aactttgtga atgtactaaa
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198351 ttaatatctc aatttaaaaa tctttaaaat taatataggt aggaaaggag
198401 agcagattaa tttagttaac aatttgtctg aatattttaa agaaatatac
198451 tttcattact tttaagtata atattgtaat cattataaat gaagaaggaa
198501 atgagtagaa taaggcaaat tacataaaaa taactcatgg tagcatgatg
198551 caacttttgt tatttattta tttttatttt tctctagttc tgcttcttgg
198601 gtgacgctac ttttatttat ttgtttattt ttaagatgga gttttgctct
198651 tgtcaccgag gctggagtgc aacagcacaa tctcagctca ctgcaacctc
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198751 gattacaggc acccaccacc gtgcctggct aatttttgta tttttagtag
198801 aggcggggtt tcaccatgtt ggccaggctg atctcgaact cctgacctta
198851 ggtgatctgc ccacctcagc ctcgcgaagt gctgggatta caggcgtgag
198901 ccactgcgcc tggctgacac tacttttaaa aagtaatttt tcatatcctt
198951 aatagcctga ctgaagcaat ccttaatgta ctaaagaccg gaagcatctt
199001 aaattgtgag atatatccac agaagagtgc tttaaacata catggagagt
199051 atgtttaaga gagagttaag gataataata aaggaaacat ctttatgacc
199101 atcacccagt caagaaacag gacattttca gcacccagga gtcacctgaa
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199401 ctaatgttcc acactaatgc ctataccaca actttttat tggttctact
199451 gttcaaggac attgggttgt ttccatgaaa ggatttttat taacaacaat
199501 gctatgaaca ttcttgtaca tttttcctgg tgcagatgtg caagaatacc
199551 tctagagttt ataactagga gtggcactgc aggcacatgc atatcttcgt
199601 atttcacaga taataaactg gttttcaaag cagttacatc aatgtatatg
199651 tcatcatcca cagttaatga aagtcctcat tgctctccat ccttgtcaac
199701 acttaacatc atcacacctt ttcatttttg ccaagacagt agttgtgtaa
199751 tctgaattta ttgtggtttt agttggcctt ttcctagtta ctaatgaaaa
199801 tgtgtaaaaa ggtttttttt tctttttttct ctcttctacc atttagattt
199851 atacttgcaa aaaagccatt tttcttctat ttgggccaag atttggctca
199901 atattacaaa gtgtactaga attagaataa gctatttcta cacccccttgt
199951 agaattcaat attgtatcat ttactggaat agaaggatac tatgaactcg
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FIG. 5 CONT'D

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200001 tgtatttctt ttatagatat cttgaatctt gccataaact ttagagagaa
200051 atcgaatata taggattcaa tatccctttg aaggaataac tagcattcct
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200151 cactgtaaca gaaactatca gtcaatcttt aaataaaaac tttttacctt
200201 tcatgtaaat gtaacattac acaccagtat aacctttag atctttaagc
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200351 atcaacttaa atctatttat agagggtcta tgtgcacatc acagaccata
200401 ttttgaattc ttcattaagc ttttacattg gtttttggca ttgcgatgca
200451 tgtactttaa tcataatgtt actgttttag ctcttacctt gtctgtcttt
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200651 aaaattataa ctttaactct taatatgctt aaatttttat accaatgtct
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200751 caaattaaaa tgagtttcaa gttttatgcc aaatttaaat acatatattt
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200901 agtccaagtt gatatgtaaa actagatatt ttgaccaaag aaagtgataa
200951 taataataaa tatattctat aatgtttagc tatatgtatt ctataatgct
201001 tagctgctat tattacaaga agttccatga catagttaat gaactatttc
201051 acaaaagaga aaggcacagt agtttagata tgattctatc ttaaatgtcc
201101 tagacatttc tggctctttg agtcaattat acctttttcc attattttaa
201151 aaaacataaa cttattctct gaatgcataa taatcaatga tcaaatattt
201201 tgcattaaag tagaatttta aaaagaagcc aaatgcattc atgtatagac
201251 atacctagga gatactgtag gttcagttcc agaccattgc aataaagcaa
201301 atttcccaat aaagtgagtc ataaaatgta tttggttttt cctagtacat
201351 ataaaagtta tatttacgct atactgcagt ctattaagtg tgcaatagta
201401 ttatatctaa actgatgggt gcagcacacc aacatggcac atgtatacat
201451 atgtaactaa cttgcacatt gtgcacatgt accctaaaac ttaaagtata
201501 ataaaacaaa aacaaaagca aaaacaaaat gaaaacaata tgtataactt
201551 gatttataaa aatatttatt gcctgaccct tcagtgagtc ctaatctttt
201601 tgctggttgg agagtcttgc attaatgttg atggctgctg actgatcagg
201651 ttgttggctg ctgaaggatg gagtagctgt ggcgatttct taaaagaaga
201701 caataaagtt tgctacgttg actcttcctt tcatggaaga tttctctata
201751 gcatgtgatg cagtttgtta gcattttact cacagtagaa ctgctttcaa
201801 aattgaagtc agtcctctca aaacctgcca ctgctttatc agctaaattt
201851 atgtaatatt ctaaatcctt tgttgtcatt tcatcttcag caggagtaga
201901 ttccatctta agaaaccact ttctttgctc atccatagaa gcaacattcc
201951 tcacctgttc aagttttatc gtgagattgc agcaattcag tcacatcttc
202001 aggctctatt cttaattctt gttcccttgt tatttccacc atattggcag
202051 ttacttcctc cactgaagtc ttgaacccct caaagttacc catgagagtt
202101 agaaccaact tcttctgaac tcctgaaaat gttgatattt tgacctcctc
202151 ccatgaatca caaatgttct taatggcatc tagaatgatg aatcttttac
202201 agcaggtttt tctattaagt ttgcccagat ccattagagg aatcactatc
202251 tatggctgct tgcatcttat gaaatgtatt tcttttgttt gttttttaa
202301 cttttattag aacaatatga acatatgaaa tgtatttctt taacaagtct
202351 ggaaagtcaa aattactcct ttatccatgg gctgcagaat ggatgttaac
202401 aggcatgaaa acaacattaa cctccttgta aacctccatc agagctcctg
202451 gatgatgagg tacattgtca atgagcagta atattttcaa aggaatattt
202501 tattctgagc agtgggtctc aacagaaggc ttaaaatatt cagtaaacca
202551 tgctgtcatc aggctttgtt gttccattta tggagcacag gccaaataga
202601 tttagcataa ttcttaagag cctagggttt ttggaatggg aaatgaatat
202651 tagctcctac ttcaagttac cagctgcatt agctcctaac tagagagtca
202701 gcttgtcctt taaagccagg cactgactcc tcctttctag ctatgaaaat
202751 cctagatggc atcttcttcc aatacgaggg tgttccatct acactgaaaa
202801 tctgttgttt tgtgtggcca ccctcaccaa tgatctcagc tagatcttct
202851 ggataacttg ctgcagcttc tataaatagc acttgctgct ttttcccctg
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FIG. 5 CONT'D

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202901 cacttttatg ttctggagat ggcttctttc tttaaacctc atggagcaat
202951 ctcttttagc ttcagacttt tcttctgcat cttccttacc tctctcagcc
203001 ttcacagaac tgaagaaagc tggggacttg ctctggacta ggctaaaggg
203051 aatgtgtgtc tggtttgatc ttctatccag accactgaaa ctgtcttcgt
203101 attaacaatt agctgttttg ttttcttatt atttgtgttt tcactggagt
203151 agcacttttc attttcttca agaacttttc ctttgcatcc acagcttggc
203201 taacttactg atgcaaaagg cctagctttc agcctacctc cgctctggat
203251 atgccttcct cactaagact aatcattttt ccatcttttg atttaaagtg
203301 agagatatgt gactcttcct tttccttgaa cacgtagagg ccacttatag
203351 ggttatgagc cagcctaatt tcagtattgt tgtatcttag ggaacaggga
203401 ggcctgagga aagtgagaca ggggaacggc cagtcgatgg ggcactcaga
203451 acacatgcaa catttatcga ttatgggcac agtctgtggt gtcccaaaac
203501 aattacaata gttaacatca gagatcactg atcacagatc accacaacat
203551 atgtactaac aatgaaaaag tttgaaatat tgtgagaatt aacaaaatgt
203601 atcaagagat acaaagtgag cacatgctgg tgaaaaaaat ggcaccaata
203651 gacttcctca atgcagggtt gccataaacc ttcaattttt caaaaacacg
203701 gtgtcttcaa agcacaacaa aggtgaaaca caataaaata cggtatgcct
203751 gtaattgctg tctttctccc tgtagttcta tagcactaag ggaaagatat
203801 ataactgtag gaattttaaa tactccctga catcaaaaca gagtacaaat
203851 tataacatgg tatcatagat atgatatgat tttttgtcca ttattacttt
203901 gcttggttct cactgtaaca agctaatgct aatttactta aattaaaaac
203951 gttttcaggg tttccatgtc aatctggtga taagcatttt ctgattcact
204001 atctcccctt ttcatctgat ggtgggtttg ttcatttatt cattgaataa
204051 ataatctgag taattactga gcacaggcac tttgctaaat actagggata
204101 gagccacaaa caagaaaaac acaatccctg ttctttgaag cctattatta
204151 agtggaaaaa gcaaacattt tagggcaatg gggttatata atggggaaat
204201 aacacacagt atactgcctc aatacaatct cctttaaaaa ttactttcat
204251 attttactat acctacttat tgtaataagt ataatatgat tagtttaaca
204301 atgttttaaa atttcatctt atcattattc ttctattttg ggatccatat
204351 tttgaaggaa atcaaagttc atgctcttaa actatgcttg agttccagca
204401 cccagacccc ctgcaaatta aggcagaact ctcctgcctc tcccagttct
204451 tctcagacca tggccagccc cactccattc ccagactaaa cacctccccc
204501 actcccagac taaacacctc ccccactccc agactaaaca cctcccccac
204551 tccaagacta aacacctcct ccatcacctg gaaacttgag gctgcctttc
204601 tcacactctg ggcgaccatg ctggtcacta tatatacatc tactccaatc
204651 acatcattta gcccactggt ggtcatttaa gcaatgaagc aagtagcact
204701 caaaccttct acacaaacac aagacacgta aactccctct agttgattgt
204751 aactgatctg ctgtatgatt caaaagaagt taatcacccc cttctaggtg
204801 tcacttgttc tatctgtaaa acgaagttgt tcttaaagta agattgagca
204851 tcagggctct aggttattca ccactgtccc acacccattc tgagtcttta
204901 acccccagta tcctatcatg ataaagataa agccaaaaat aaagtgctta
204951 agctgggaac aaaaggaatg gagaggcctg acaatggtgc cttgtgggga
205001 taaggtggca ggaaagtaat ttttccataa agtctacctc agagttttaa
205051 gaacatacat tctgtttcag caaagcaggc agtggggaca ggaaaagacg
205101 catgttagtc cagaaggctg acactagata aatgcctcct aggcattgaa
205151 aacggtgttg agaccacgca catcaacgtg ccctcagcat taatgctgac
205201 agcaggccat gcagcacaga aatgttagtg gactgacaat ggccctgtta
205251 tacttttcct cttccagcag tcagtaagca gaataaacaa caaataggtt
205301 gtttattatt attaaaggaa cacaatgaaa ggaaataaat gccctgcaga
205351 cttgggcaag aaaggttgct tctgaaatta attctctata aagctagaac
205401 agatataaat ttaagaaaag aagaaaagga gacaaaaagc tcttttagac
205451 aaaaaaaaga gctagccaag gtaaaagact gaaaatacac acatatatgc
205501 acatataaat acacacatgc ccaagatgca gactgggaat cccaaactgc
205551 atagagcaga ataacaatac agaaaatggg tctggggcaa cttcaaggta
205601 caaaattagt tagtgtgcat gtattcattc gaaaagtatt tactgagcac
205651 ttataatgta ctaggcactg aacaaggaaa tacgaaacaa agaagcctca
205701 aagggctcac gatgtagtga gagacacaga cacgtgcaaa attttcccag
205751 aaggcgagaa aaggtcgaaa aaactaaaat gatgaagaaa agatatagag
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FIG. 5 CONT'D

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205801 tgtgtatgga tacatatctt tatatctata taggtatttt atagcgatat
205851 gaagaaaatg gagtgttatc ccctaacaaa caggtgttac aacaatggag
205901 gggggaggat aggaagccaa aaacagcaaa ggcattaaaa ctggaacaga
205951 atcaaagata taacagcgta aacagaaaaa caatctaaac ttgatcattc
206001 gaacgatttt tctagttgag attcatgata agacccaaca ttcagtgtct
206051 tgcagctttt aaaataaaca tttccttctc agatcacatt ccaacaaaat
206101 gaccttaaaa aaacaaacga aagcataaaa atcaggttgg ttttagactt
206151 ccatgaacca aatgccccaa ggccatggag aaaacctaga gttctgataa
206201 gtaaagtcta taacaccata attaaatcct tagccaatat accatttatg
206251 tgtgaacaga tagtgtatat ttactaaaaa tggaacaaaa agatgagatg
206301 gaatgaggcc cacaaagagc tcaacaaaat taatgctaaa aaatcagaaa
206351 tagttcttga aaaggagcct gtatattgtt ggcagaacat gtgggagggt
206401 gagaatctac aattataact cattcatata ggaataaaaa taaataagga
206451 ttcaactaaa gaagttaaaa aggaaactgc cccaaaaatc tccaagaaaa
206501 gatggatgga aataatgata gaagtagaaa taactcaatc agagaagtaa
206551 aagaaaagga agaaaacctc tggtagctat ttggtccggg tttcttctgg
206601 tgatagatgt gtctgcccta cttcccacat cacctcaccc caacaaaagc
206651 gggggaacat gacccaggtt tggccacagt attccctgtc ctggatgcag
206701 caactagcta gtaaatagat tgtgacatag ccaatcaaaa taaaaaagaa
206751 gaaagaaaag tgttgatgag aatgctgaga aaagggaact cttgtacatt
206801 gttggtggga aggtgaatta gaacagccac tataagaaac ggtgtggatg
206851 atatgccaaa aataaaaatg gaactaccac atgatccagt aatcccactt
206901 ctgggtatat atccaaagga actgaaatca gtatgtcaag gaaatatctg
206951 cacttccgta ttcattgcaa ccttatttac aatagccaag acatggaacc
207001 aacctaagtg tccatcaaaa gataaataga taaaaaatgt agtacaggct
207051 gggtgcggtg gctcagtcct gtaatcccaa cactttggga ggccaagatg
207101 ggtggatcac ttgagtccag gagttcgaga ccagcatggc caacatgggg
207151 aaaccccgtc tccacaaaaa atacaaaaat tagctgggtg tggtggcagg
207201 cacctatact cccagctact caagaggctg aggcatgaga atcgcttgaa
207251 cccagggggc agaggtttca gtgagccaag atgtgccact gcactccagc
207301 ctgggtgaca aaacaagact ctgtctcaaa aaacaaaaca ctgctttaaa
207351 atagattcaa agcagagaca aaagagaaaa tggctatatc ttcattcgat
207401 atagccaaat tgctttctca agtttttatt ccagtttata ctttcacagc
207451 tgtgtagtgt gagttgcagt tatcacccat ccttcctaac atttggacct
207501 gtcagaattt aaaaatttcg ccagtatgac agctgtaaaa ggttgtccca
207551 ttatggttgg agtgcagttg tgtaataacc gcttgctgca gtcttgacct
207601 gttgggttca agcaatcttc ccacctcagc ctcccaagta gctgggacca
207651 caggcatgtg ccaccatgtc cggttaattt ttgtattttt agtagagacg
207701 gggtttgcca tgttacccag gctggcctcg aactcctggc taattttaat
207751 tttatgtaga gacatggtct ctgtatgttg cccaggctgg tctcaaactc
207801 ctgagtttaa atgatcctct caccttggcc tcccaaagtg ttggggttac
207851 aggtgtgagc caccacacct gacccatact agctttttaa ctttcttatt
207901 ctgtacattt cctaattcta tactttgccc atttcatatt taaaaaaaat
207951 tttagagaca agttcttgct ctgtcaccta ggctggagtg cagtggcagt
208001 cacagcttac tgcagcctcg aactcctgac cttaagtgat cctcccacct
208051 cagccttaca aagtcctggg ataataggcg tgagccactg tgcccagcta
208101 ctttgcccag ttctttaagg tggctgaaga aagtcatatc agctgccaat
208151 accaactagt acagtccctc gctaataaat ataaatcacg tgcaagaatc
208201 atgaggtgtt tgatgaaaat caagaatata aaagagaaat gtaaaaataa
208251 atagagcaaa ccctgggggg gatggtaaaa attatattat atttatataa
208301 ccaaaagata tactatgcta tcacatccat aaaataagaa caggctgcta
208351 tgaaaaagaa gtaaacaatg aatgagaaaa cattcttgga actaagaaca
208401 tgcaatgcaa tagaatagct gattggtaga agggtataga attgaaaaac
208451 aaatccacaa tttaaagacc aagccatgga aatctggaat gaagagtaaa
208501 atacaaagaa aagcaaagaa ctaattcaca gaaaagttgg aaatatacag
208551 ggtagagctg gagagccaat attgattgaa tataaatgct taaaggaaaa
208601 gaaaaaaaca gataactgat gagagagtaa caaatacatc aacaaataaa
208651 aaggaagcaa aattcctaga gctgaacatg tcttcagatt taagtaaact
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FIG. 5 CONT'D

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208701 aatggttatt acacagaggg aatgcaaaaa ggcctattcc aagatacact
208751 gtgaaatttc tgaactctaa agcgaaatcc cacaaacttc cataaagggg
208801 aaaaatctag agtggcacct aagaaccaga ctgtcagagt ggaatcagga
208851 ttagtaactt cacaccaaat gacagaaggc agtgaaacac tgtttacata
208901 gtttctaggg aaaaagattt ttcacctaga attctatact ttaccaatta
208951 tgcagatgtg agggcaaact aaaattacct aaggacaaag atggtgaagg
209001 agtaggggga agagaaagga agatggagga gaaacagaaa aatgagaaaa
209051 cagttgaaaa gtaagcagtt gagcaaagaa accaataaaa tacatggcta
209101 aatctaagta aaggttgata atgtgtctgt gatgcttaat atgactgcta
209151 aaaatgtatt cctgaagtat tttgatagag gcaaaatgtt ttttaaaaaa
209201 tccaaccatc tggaaaaata caactaaaat tcttttatag actttgttca
209251 aggaaaagga tagaaataat gattaaatca taataaaatt tatatgggtt
209301 tgtcatgcca aactaattta agtctctggg ttttctataa tcacatcata
209351 cacaaattaa gataaacctg tttcttgaat tgtttattaa acatttaatg
209401 atgaatatta gaataatgga agtaggatgc aaccaccaga agggggaaaa
209451 caggaacaaa aataatttga ccaaatcagc aaaaatcagg aatgaaaagg
209501 aaagtataaa caaatagtaa acagagaata taaaacaata tagaaggaat
209551 aagagcaacc aataattaca atacatacaa atgtgttaaa ttctactact
209601 aaaaaaccaa gactctcaaa ctctcaaatt gggttcacac acacacacac
209651 acacacacat ttctgctcta aattctgcaa gagccataat agaaacaaaa
209701 cgacacaaaa atgttcagaa taaaaggatg cataaatata tatcaagcaa
209751 tattacaaca tgaatataag aaatgcagag ttcatgagaa attatacaca
209801 cacacacaca aagcatttaa tatatgtatt tagttgtcat gaagagaata
209851 tatagaggtt attatactac atatacagtg tatgtaatag acataatcat
209901 acatataaag ccaattaccc ttgcaaattt aatactattt catatgtata
209951 ttaggtacaa taaaggctat attaaatagt tttaatttgg tgaccttaat
210001 atgctctagg tagaacaagg aagtcattgc ttgaaaggaa acagaggaac
210051 aggcggtggt tcacgcctgt aatcccagca ctctgggagg ccgaggtggg
210101 cagatcacaa ggtcaggagt ttgagaccag cctggccaac atggtgaaac
210151 cccatctcta ctaaaaatac aaaaaaaaat tagctgggca tggtggtgca
210201 tgccagcaat cccagctact caggaggctg aggcaggaga atcactggaa
210251 tccgggaggc agaggttgca gtgagccgag attgtaccac tgtacttcca
210301 gcctgggcga cagagcaaga ctctgtctca aaaaaaacaa aaacaaaaca
210351 aaacaaaaaa cagaggagtc tggtagggaa agagataaaa gatagctact
210401 gacagaaatg agaacaggag ctactgggaa agtgatctac attattttca
210451 gtttaaatat gttcaataca gaccctaagt aaaattctgg ccaataaaaa
210501 tcaaaagctg tgtttacaaa acaaaatacc aaatcaggtt tttaataata
210551 gaaaattgat gaatataata aattatatca ataagtcaaa taaaaattat
210601 ctcagtggca tctgaaaaag ttatctaata aaattaaaac caagagagat
210651 acaaatctta gctcaattta caaaaaaatg gttaatggag gcatacttac
210701 taaaaggagg tataaaacaa aggtcatcac aatcacgcta tcattaccat
210751 atgttgtgat caatgcacta aaatataaaa cataaataaa tgctacaaaa
210801 tttgggaagg atgtgacaaa attgtaatta acagacaata tgattatata
210851 cctaaaaata tgaacaactg aaattagtag aaattaggtt aagtagtcaa
210901 atacatgata aatatacata cagctttcac atataagaaa ttgccagtca
210951 gaaaacataa tgaaaagcat attttgatca tactgccaac taaatatgta
211001 caaaatctat accagatctg tattttaaaa aactacaaaa ccttaatttc
211051 gaaaatagga taattactct tcctgaaata gaaaactaac aaataaaaca
211101 gagaaataga agatgtactt atagatgtat gtgtctattt atctattcat
211151 cccttcagct agccatcctt ttaatcttat agtcacagaa tgattctaga
211201 atgtggctta gctaatctta atgacattat ctaaattatg agatttgtga
211251 tggtttaact ttcttcatgt aggtattttt ctgcattatt tataatgagc
211301 acatttcttt tttctgaaat aataaagaga ctgtggagaa aacctacata
211351 attaagatag gaaagatttg aggttaaaaa aaacactcta ttttgttctt
211401 gaatagacag aataaatatt atttaaatgt cagttattct taaagtccac
211451 agtttgatac agttccaatc aaatgtccaa aaaaattttt ttggtatcta
211501 aatttagtca agaatactaa ataagcaaga ataacaaatt ttaaaaagga
211551 aaattaggag gaaatgaaat gaaaagtgtt ataaagtact gtaacacagt
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FIG. 5 CONT'D

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211601 aatagcacaa gaaacaaaca catcaatgaa caacacagct cagatataga
211651 tgttaatata agtgactttc aaatttctgg atgtgaaata gtttctgtaa
211701 ttttataagt gataaaataa atttcaaaga aaaagaccaa caaatcaaag
211751 ttaatacgaa tatgccacaa acacaaaaat ttgaatttct atagataaat
211801 aataaaaaaa attataggca aacaacaaac tagagaattc tgtgatatga
211851 atctgaaaga tggagggcta atatcattac aaaagatctc tttaagacaa
211901 ttaagaaaat cattaaggaa acatacagat aagtgaaaac cataaatgag
211951 gaattacagt taatgaacat attagtaaat gtttaaccat tctctataat
212001 aaaaaaaaat gcaaactcaa agtgaaagac tattttgtcc attatgttac
212051 taagtttttt gttgttttga caaactcaat tctattgatg gtattttgca
212101 acaggctctc atttcttact ggtgcagata taaattagac aataatttga
212151 caaatatgaa tctagaacct taaaatgttc acaacctctg gctttatagt
212201 aattccattt ctggtaatct gtcctaggaa aataaactaa aataaaggat
212251 tatctttaca tgcaaaaatg tttactgcaa ttttttatca taaaaaactg
212301 agaaatatct aatctaacag agggaaataa ttaaattgtg atatacccag
212351 ttgatggaac attagcatat gtcacagatt ttttaaactt ttaaactttt
212401 tacaattatt ttacatttta acattttcaa agcttaggtg tgtcttacaa
212451 ttgttggtgc cttacactaa caggcagatt cttttctttc tcggttgtac
212501 ataaagtaac catatgtctt aaaaccagcg acttattaaa tttgatgaaa
212551 tatgtctagg aaaatatttc caaagaatgt gaaatagaat ggaaatgtta
212601 atgttaaaaa caacatccca aattacagag cataactaca actatgtaaa
212651 gcaaacaaaa acacaaacac acaaaaccta tgtatagaaa aaataatttt
212701 gaaatgttaa cggtgattgc ctctgagtaa tgtagtttgc ttgtggatgc
212751 ttaatttcct tctttcttca aatgttctgt tttttccgaa gcttgtataa
212801 tagatcatgc aaatgctttt atagtagaaa tgtctctctt aaatggtatt
212851 ttgaatgaat aaacaaataa ccttttttttt ttaagttcaa actgtggaat
212901 atctgattgt catgtctttt ctttcttttt tttttttttc tgagacggag
212951 tctcactcta ttgcctaggc tggagtgcaa tggcatgatc tcggctcact
213001 gcaacctccg ccccccgggt tcaagcgatt ctcctgcctc agcctcccga
213051 gtagctggga ttacaggcac tcaccaccac gttcggctat ttttgtattt
213101 tagtagagac agggttttac catgttggcc aggctggtct ggaactcctg
213151 accttgtgat ctgcctgcct cagcctctca aagtgctggg attacaggca
213201 tgagccacca cgcctggcct gtcatgtctt ttcaaagcat tattcaaaca
213251 tgatttcttt ggctataaag tttcataaag agtagtactt ggctcagatt
213301 ctggagagaa agccaaaaaa gatcatccaa ctctgctccc agggaactca
213351 caccctgtag attttgtagt agattttggc agcattctct ttcctaatac
213401 acagtaaaat atttcatatt cctaacttgt gtgtgagcac cattgaagat
213451 ggcccaaaat caaccaccca attgagtcat ctgaatatgt tcagtgacat
213501 aaatggaaag gagagttggc agggggcagg ggggtaggag aggacctagg
213551 ggaagagggg aatagccact tggagcatta aatgcccttg ttgttatccc
213601 acttaaaata tttcaaaggg aaaaatgtct aatatctaat ctctaactat
213651 gctattcaat aataatttga ggccaggtgc ggtagctcac acctgtaatc
213701 ctaacacttt gggaggtcaa ggctgcagtg agccatgttt gtgccactgc
213751 actccagcct gggcaacaca gtgagactct gtctcaaaaa aaaaaactta
213801 aaaaaataac attttgaatg tcaaagtttt cccaggaaaa ctgaagggag
213851 tgggaaattt atatctgaag ccaaaagaga tgtctcaaca tttccagagg
213901 tataaccaaa ctgctaactc attttaagaa agacaactaa aaaatgaacc
213951 ttcttttcct cacataagtt tattttacaa tcaacaatga gttagacagg
214001 aacatttcca aaatgatttc ttaagagctt gttaatttaa cttaaggcac
214051 aggcaccttc tgttaaacta aaaaaattaa aataaaccta ccaccacata
214101 aaaaaaaatt tcagggccag gcgcggtggc tcacacctgg aatcccagca
214151 ctttgcgggg ctaaggtggg tggatcacat gaggtcagga gattgagacc
214201 agcctagcca acatggtgaa acctcgtctc tactaaaata caaaaattag
214251 ccgggtgtgg tggcaggcgc ctgtaatccc agctactcag gagggtgagg
214301 caggagaatc acttgaaccc agaaggcgga ggttgcagtg agccaagatc
214351 gcaccactgc actccagcct gggtgatata gcgagattcc atctcaaaaa
214401 aacaaaaaaa aaattcagaa aaggtcaggg atgctattcc tttacctgta
214451 ttccaaatag gattcacaga tagaaagaaa tgaaatcaag tgtacatggc
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FIG. 5 CONT'D

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214501 aaaaaattgt gcctgtaaga ttcatttttt aaaattaaat gggatggagg
214551 ttacatgagt acatacatat gtcaatacta attgaaccat tctcctaaaa
214601 tgggtgcatt tgattatatg aaaatcttaa aacaaaaaag tgcaccttaa
214651 agttctactg tatttgctac tgtatccaag aagactctcc cccaaaaaac
214701 ataatttaga attgccttca cagagatggt taagttacaa agcatatcat
214751 tatatatgta ataataccat atcattatga accatattat atatgtcaaa
214801 gaatcttcca atcagtatct tctatgcttc aatttttcca ttttaaaata
214851 tgcatcctaa atgtaattac aaagcaccac aactgaattt tgtacttgaa
214901 aacctataga tatgagtgaa acaataaagt ataaataaca actttcactg
214951 acaatccctt tttcagttaa aaatgactaa gaataacttg tttttataag
215001 ttttattaac caaatttgag ggagaggcac tttctaaaaa tgggcaattt
215051 acacagaaat ggaaaagttg tgaggagctt tttatgagtc ccattcatct
215101 ggaagcctca gtcagactta catcagaaga aaaactcttt tataagagaa
215151 actcatgtcc cttgttaatt actctttatt tctaatgtac agtaacactg
215201 aaatacattt ttaaaaataa ttaacatata aagttaggaa tatatacaac
215251 tactactaca tttattatct aaggatccta ctaggctatt gtagttccag
215301 aaaaaaaaac tagtaacttt attcattacg ttcacactga tgtttctgtt
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215401 ttaataattg tcaatgattg aaaattttat attagaattt tacaatctca
215451 acttatagca gcgatctgaa ccaaagtcag tattctcaaa aactggtaac
215501 tatcattaaa gcattagatc ttactgaaat taacaaatgg ttactcttta
215551 aaaaacagaa ttatcaaggg agactcataa ttcagttttc attctttctt
215601 gtaagcacat acatattaca cataacaaat tttggttagt tactgttatt
215651 gatattaaga catggtttat acaaatagtg tgaaatacaa ctatttcata
215701 gcttcagtaa gccctgtgcc tgtctatgac ctgtcaatct ataaaaacat
215751 taacatgaga gaatagagat gaaagtgatt ttgctaaagt tatctgttat
215801 ccccaagctg ttcaaagttg attcggtttt tctggctgag taatttgata
215851 taatctttca tccttccaaa gttggaaggg actatatgag tttctgctag
215901 aagtttgaga catttaagtc acaaaactgc aaagtatgtt atctcactta
215951 taagcagtaa agatctctgt ttaaactaat taattagtga aataccaact
216001 ttgactataa ttaatagaca tgctaatata gttttaatag atttttcttt
216051 gttatgtgac tatcagctaa atataatctt taagccacat tacgaatata
216101 tatgtgcatg taaacacagt catatatata tcccagaaat ggaaaattgt
216151 ccaaatctac ctgtatccat tcagtaaata cttgttaaga acctattata
216201 taccatttag gaccactcaa aatcattact ttttacataa gatttacaat
216251 agactaaaga aagtatttct tgatcaaatg caagagtttt tacgccatta
216301 caaatcatcc aagataacca aaacctgcat ctactgtatt gtttatttca
216351 ttattatttc attacatatg catattgcat tactgacttt taaatttcat
216401 atactggcaa ttcacagaga ctttcaggac cagtaaagtt aacttggata
216451 gacccaagac aagttttcca aataagtcac atttcttcat atgggtccta
216501 gtaaacattt gcaaatacat aatccttctg agttaaagtt gacacctgac
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216601 ctcagcacca ttcctactca ttcaaggcag caaccaagtt ataccatggt
216651 cttttcttgt tctcttcaga gttagaccta ttctatctta cttttgcttt
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216901 cttaggaatg gctaagtaca aactcaatgg ccagaaatat tcttgtagca
216951 agaaaaagag aaatcactga tttcaatgtc agattagatc tcaaaaacag
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217101 tatttagaat aaaaataata tcttatccaa cataattatt ttatatttag
217151 tttcgtcatt ggaattgact ttcttatatt tttcaaggta gcaatggttt
217201 ttctacagca tgggtaaaat acatgcttag actataataa acgcccaaca
217251 gtcacttgat aaactgtttc ccagggaaaa tgggttctaa atttccaaca
217301 acccattcac aagtaaactt ctcaaataca aagtgtttgt aaattgggaa
217351 tgcattattc tttatttcta tatttacatt cctatgggcc tgggaaatgg
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FIG. 5 CONT'D

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217401 taccatcact aaggtaacac agtgaatgat tagtttaaaa taaaaaatta
217451 ttctgaagag tgtgaagctg tatgcaaata attttccacc agtctaagaa
217501 ggactgagca tgggaaaatc tataaagaag taaaagtaag tttgtgatat
217551 tatctctatg atgtttactt ttaagtgcaa gatactaact agcccagaaa
217601 aggttcccac agaccagttg agctgcttct tatacatagg tcaacagtct
217651 aaaaaaaaaa ttaaaacctg caaaatccca caaaacaaaa cctgttttac
217701 aggcttctgt acacgtagag gaaatgttag agaaattaca gccattttat
217751 ggtctatcta gggtacaagc ccttctaatg tgtttactga tactctgcag
217801 aagttttcat ttcagttgtt ttgccttaaa ggattcactt gaatcaataa
217851 ctaaagacat atatattttt tgaggctagc agagggtaga ttagaaactc
217901 tgcttagagt ggtgtatcct catgcagtga ctcaatttca cagttaacaa
217951 catacacttt cttcctccta cagaacaatg attacatgcc tccctccatg
218001 cctttaaaaa gatatatata attggcatac actctcctat tttaagatta
218051 tacaaaaaaa gttttattgg aatgtgaata gatattttta agagtttatt
218101 tttctttgct ctattgctta tacaaacaca aacacacaca cacacacaca
218151 cacacacaca cacacatggt tatattagct cttcaacaga ataagattat
218201 acgagaggaa agcttggtat aaactgtaag aacaaaataa ctgctttatt
218251 ccttacttag aaacccaaat gcattcattc attttacata aagtaggaaa
218301 aatcaggtgt cacttattgg gtctaaaaga agcagtcaac atttaaatta
218351 tatatccttt gaagtaacag tatcaacatt tttatttaaa ttatgagaga
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218751 attaaaacta aagtttacca tattccttcc atttctataa accagtatag
218801 ataaccttgt tgatactcac caaatgttac agaaatgcct aggcttttct
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219051 cgttaccaga aaatgatcac ttgaacactc acatagggca gctgtaaatt
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219901 ctaaaggcta caaaaaatta ttaaagtgat tatacacata caattataga
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220051 tgtaggattc tttggaatta ggaggcaatg tatgcagctt ggaatacgtg
220101 ctggctctgt atgaatgcta gtcagatcct gctttggagt tctgttccag
220151 ttccttagcc cagaacactt ttaggttctc catctcccac tatgtcccca
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220251 acagaagtag ttattagacc tattattaag taacacattc ttattctctg
```

FIG. 5 CONT'D

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220351 acatctataa acagttgttt atatccctta agaaaaataa gtcagtaaaa
220401 gtcggcctta aaatataggt gttttgatct cgtttattta aagtagaatt
220451 aaaatttaac tatattatac agttatttgg ttatttctta gcacctatta
220501 aataggtatc aaagacgact agagattagt ctgccaattt ttctttcaat
220551 tagtagtttt ataattttta gagttttatt tctccttttt aaagagatgt
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221801 agtatagtcc tagcagtggt ggtcacaaga gggcttgcac catccctccc
221851 cgaactgtag gcagctcagc aaggagagac agagaaagac tcagtaaggg
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221951 ccaagaccac caaggcagta tctcctcaag tctgcaagtc acaacattac
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222751 tcaagtatga gaaggttata gaacactaag cagattttac ccccaaaaaa
222801 ctacctcagg acatctaata ctcaaacaat gaaaggtcaa ggataaagaa
222851 agatcctaaa agcagcaaga gaaaagaaaa gaataacata taaaggagcc
222901 ccaacacatc tggcaacaga tttctcagtg gaaacatcac aggccaggaa
222951 agagcagtaa gacatatttg aaggtctgaa agaaaaaaac cttttatcct
223001 gaaatattat atccagtgaa aatatccttc aaacatgaag gagaaataaa
223051 gacattccca gacaaacaaa agctgaggga tttcatcaac ccagacctgt
223101 cctacaagaa atgctaaagg gagttcttca gtctgaaaga aaaggacatt
223151 aaggtacaat aagaatcatc tggtcatctg ggccaggcac ggtagctcac

FIG. 5 CONT'D

223201 atctgtaatc ccagcacttt gggaggctga gacaggagga ttgcttgagc
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223651 caattgaact cacagagata gagaggagaa tgatggtggc aggaagcagg
223701 gcaaagggga tagttaatcc actaatggga tgagtataaa aatatagttt
223751 aatacaatga ataagatcta gtatttgata gcacaacagg atgactacag
223801 ttagcaataa tttgttgtac attttagaat aactgaggga atacaattgg
223851 aatgctcttt ttttttttt tttgagatgg agtcttgctc tgtcacccag
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224751 aagtagagac tttaacaacc tataaatggt gtagttcaat ggagttgtct
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224851 caagttacag tcaaatggca tcatggcatg ctaaatatgc aatgattcta
224901 cagttatttg aatacaaaaa aatggtagga aaattattta tcacttaaat
224951 gtggtagctt tggtagctta actatgcaga attccaagtt acctcctcca
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225151 aaacattagt ggttaaaaaa gagttcattg tcaacaataa aaacaatggc
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225901 taattgagag acgagtcaag atcacaaggc attcccatgc ctgtgtgaca
225951 gtaagcaggt tataccttta aaacatatag gaaccacagg aagaaaaata
226001 aattttatga aatagccagt tagttgatat ataacaagtc cgagatgcca
226051 gcaaggcttc tggatataaa tgcccacagg cagctgaaca tacagaacta

FIG. 5 CONT'D

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226101 gaacttggag agaaaacaga ctggagcaat atatctgggg gtcatccatc
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226201 caagaaacat ctacaggtgt tggtagaaaa agggcaactg gctgggcgta
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226701 aggtattagt gggaaagggg cctttagaga accacttggc ccagagaaag
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227201 gaagatgaga aagggataat taatggggca tgatctttga gcccacaatg
227251 ggagggatca agaacataag tggaataata tatatttttc taaaatgaga
227301 aggaggagaa agcattagta gagactgccc agggaaagag gaatgaagtt
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227401 atctgaagag aacaaaggta gagtaaaaga atatgtgttt gagcagagtg
227451 aaaattggtc ttatcagaaa acccacatgt ggctgggcac agtggctcat
227501 gcctgtaatc ctaagcagtc tggcaggaag taggaggatc ccttgagtcc
227551 aggagttcaa gaccagcctg ggcaacatag ggagaccctc tctctattta
227601 aaaaaaaaaa aaaaatccac ataaatacag taagaagaaa agctaaaagg
227651 tgtgactcat gtacaccaaa tcctaagttt aacagttaaa gttccgctta
227701 tatccacaca attccactta tatctaaaca atataacaac gctaagtaca
227751 tgctatgctt ttccaccaac tgcccaattt aaggaataac aaaggatgag
227801 gttaagaaac agatcttgga gccccaagat tcgatataca gctagtatca
227851 taacaacaaa atgggcttag tgccataacc acaggcagat ggtgatacta
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227951 ctccacaact ggtacgctta tgaaaagttc ttgctcaagt cagttaagaa
228001 cataagatac cttttagtaa aagaacaatt cccaccctgt tgagaactga
228051 tgtacattct ctttttatga ggtgtgtcat actccaattt tccaagtttt
228101 tacaaatttt cacttttcta caaattattg aaaccagaac tatacaaaaa
228151 ttttatgttg gagaatcata ttattactgt tataaatctt taaaagtaca
228201 acttgtaagc tggtgctctg aagccaagaa gaaaaacagg atctaaagag
228251 aacacagaaa gaaaggacaa agaaagaagc aggctgagtg aagggacaga
228301 aaaccttgag ttataaataa cttggtttaa aatgtcaaga gaaactagtc
228351 tcaaagtatc tctttctaca gagttataat gctttttaat aatgaaagta
228401 cttcacatga caattttcaa agtcaaagcc atttatggca aacaaacaca
228451 tagcatttgc aatataacat attcaggtaa tttactgaat ggaaaaatct
228501 ctatggaatt catccagtaa ttatagtggg ttccatttat aaaacatatt
228551 ttaccacaaa tctgaagact tataaaacat gatctagtat aggagaaatg
228601 attataatcc tttaataact attaatcaca gaacaattag ttttaataac
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228751 aaattaaatg tccattaaaa aagtattttt tattttctat gcttctctat
228801 tgttttaaaa tcccagcccg gtgtggtgac ttgtgtctgt aatcccagca
228851 ctttgggagg ctgaggctgg tggattgctt gagtccagga gtttgagacc
228901 agcctgggca acatagtgag acctcgtctc tatcaaaaat acaaaatatc
228951 agctgggcat ggcggtgtgt gcctgtaatc ccagctactt aggaggctga
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FIG. 5 CONT'D

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229001 ggtaggagaa tctcttgagc cttggaggcg gaggttgcag tgagccgaga
229051 taacgtcact gcactccagc ctgggcaaca gagagagact ctcctgagaa
229101 aaaaaaaaaa aaaaagaaaa tcccccacct ccctcttctc taattcccct
229151 ccccaagatt aagcactatt caaagtgcta tccttccaga ccctttttcc
229201 aggcatacgt agatgtatgt atttgtttga atacacacca agataatttt
229251 ttaaatgaga taatactata cacactgcat tataatttat tttatttctt
229301 tatagtagat cttggatttc tctacatttg gtagctctat ctcattcttt
229351 taaaagtgtt gcatggttgc acagtagatg cacttggcac tgaaaactcg
229401 acttaagtat atcccgagga tgaccctgaa tgtggttcac agttttgagc
229451 taaggaatct gggataagct ggagacccat tccttatcta tgaggaacat
229501 tcgagccccc agcctggctc atggaacaca gggcatagaa gggatcgagg
229551 tcctttgttt tgggttaaat gaaggttacc aggtggaggt tgttagggag
229601 aaggcattaa gtgaaaatgc tatgtaaact gcatgactgt tgcaagcagt
229651 tggttctctt gcctagccca ctgccactgg actctcttcc ctgtatgtaa
229701 actcccccca aaaccctctg tctcctttgc tggctctggg tctccttggc
229751 ctctagaacc tggtgccatc cccactggag ttgatagggg ttcagcacaa
229801 attggtgttc cttaatattg ctgtactaca gtttgtttaa ccacttctct
229851 atatatagac atacaggtag gtgagggtgt tgtttttgt ttttgttttg
229901 ctatcttata atctatttta aaattagtca ctgataacat aaacaaatca
229951 gaatttaaaa acacaatgtt aattctcctt ggaaaaaaag ccataaagtg
230001 attatttgta ttattctaat aatacagata aataaaattt acctttgcca
230051 tttaaaaaaa aaaaaatggc aaaaaccaca attacttttg caccaaccta
230101 ataataagca ttttttttcat tttaaatatt ttggtttctc acagttgata
230151 aacatgcaaa atctgtcatt gttttcaata caatgttatc aataattctg
230201 aaaatttaca catgcaactc attttcaaat taactgcaca ttatggcctt
230251 tggatatgca ttggataccc aatgtgtttg agggctaaat ctcactaatt
230301 ctccactatt actcaattac gttaagccag cagtccccaa ccttttcgc
230351 accagaggat ggttttgtgg aaagccattc ttccacggac ctggaggttg
230401 ggatgcaggg gatggtttcg ggatgaaact gttgcatctc aggtcatcag
230451 gcattagagt ctcataagga gcctgcaacc tagatccctc acatgcacag
230501 ttcacagaag ggtttgtgct gtctatgaga ctctaattct gccactgatc
230551 taacaggagg cggaattcag atggtaatgc ttgccagcca gccactcacc
230601 tcctactgtg ctgcccggtt cctaacaggc catggacagg tacaggtctg
230651 cagcccaggg gtaagggacc cctgcattaa gcaactcttg attggtgttt
230701 tcagaagcct agtgtgatac taggttctct aaggaattca aaagaggtct
230751 gtgataaaag atctgtcttc aaggagcttg tacaactttt gtgaaaacaa
230801 aacaaaacaa aacaaaacaa aaaaccttag ctatctatat aaaatcatta
230851 cacctgaata caaagttttg aagaaaatac aaaaggaaga agaaatatgc
230901 aagggaccaa ggtatatttt accgtatttt atcataaggt aaaatataga
230951 gattacctaa gtgaggaaag aaaaggagta agtgaaagaa atgggacttt
231001 tttaattgta caaaaatcat agactttata aattcttcta aaacaacata
231051 tttcctgagg atttgttagc aaatacctaa gaaatgggaa tttagatgca
231101 ctttgaaaaa gtactaggat ttggatatag tgagatagaa aaaggaacaa
231151 tatcccagca taggaaaatt ttttagcaaa aatgcaaaga ctggaatgaa
231201 agtagaaaag ggacggaaag agaggtaggg aaatgggaga aaagaaaatt
231251 gtggttaaaa gggaaataca tagggaagtt tttgaggtgg agtggtggac
231301 agggagggca catatatttg ttgtcaaagg aagaagcctg gagagaggta
231351 aaaagctatt ccctgtacac ttggcccaac acgttttggt cccatttcaa
231401 ccaatactca ccctttaac tggcttctac aagaaatcca gatacaccaa
231451 gtatttcctg gcttttgtaa gtttttatat gtgaggtcac agtgaagtgt
231501 cacaatacac gacatagcat ttctccagag ttcctattcc tttcctgctg
231551 gattttccct gtgcctttca agtttttctt ccctttttta aacagaaaat
231601 ttaaactcta tctcttctag ttccaaatat gtattcctaa ctcatcctaa
231651 actgcaacaa aacagagact cttccaacgg caaggacata cctccttaaa
231701 aggcaattta acaaccgtct ccaaatactt gaacaaaccc tttgtggagt
231751 caacattcat cacaaatgaa ttatccatgc ttttcttcca aacaaattct
231801 gcattttcta tacaattctt aatgcttact aaaagattaa caatttctcc
231851 attgggatag agtcaaaact gcagatgaaa gatttgcctt agtaaaaaga
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FIG. 5 CONT'D

231901 agcataatgt tataaaaaat gaatcattct tttcaagaaa tagaggcagc
231951 aacagttctt aaaattaaat aagaactaga agaatgtagt gagacagaat
232001 cttgtatact gctgagtaga acaaaatccc caggaacctt tctagaaaac
232051 aatttaccag aatattcatg ctttttaaca tatcaattct actaacaaaa
232101 agctatcctg agaaaataga gatggctaga tggtaaatga tgttattgca
232151 atgttattta caaaggaaag ccaagagtat ctacaaaagg gaaacagttg
232201 aataaattat gttatgctac catcttagaa tattatagac atataaaaat
232251 attttaagtg ccatatatag tcacataata aaatatgtta aataaaaatc
232301 aagaaatagg actaatactt caaattcatt ttaaaatcat aaatattata
232351 tatatacaac tatgtgtgtg tgtacagaga catgcataat tttatataga
232401 taaaagacta gaaggaaata caacaaaatt ttaacagtaa ttttctctgg
232451 gtagtaagac tacagattac ttttttcttc tttataattt tctgtaacaa
232501 tcaaattttc tacaatagca tttataagtg gaaaatttgt tttaaaaaag
232551 gagcagcttt gtttcgccat taagtaggca ttaaaaaaaa atgtaggctt
232601 gctgggcacg gtggctcatg cctttaatcc cagcactttg ggaggccgag
232651 gtggaggtgg atcacttgag gtcaggcgtt cgagaccagc ctggccaaca
232701 tggtgaaatc ccatctctac taaaaataca aaaagttagc tgggtgtggt
232751 ggtgcgtgcc tgtggtccta gctacttggg acgctgaggt gggagaatca
232801 ctgaagcctg ggaagtcgag gctgcagtta gccaagatca tgccactgca
232851 ctccagtctg ggcaacacag tgagaccctg tctctagaaa ttttaaaaat
232901 aaaaataaaa aataaaaaat gtggccaggc gcggtggctc acacctgtaa
232951 tcccagcact ttgggaagct gaggtgggtg gatcatgagg tcaagagttc
233001 aagaccagcc tggccaatat ggtgaaaccc cttctctact aaaaaaaaaa
233051 atacaaaaat tagcggggtg tggtggtaca cacctgtaat cccagctact
233101 caggaggctg aggcaggaga atcacttgaa tctgggaggc agaggctgca
233151 gtgagccaag atcgtgccac tgcactccag tctgggtgac agagcaagac
233201 tctgtcttgg aaaaaaaaaa aattaaatta aaataaaatt aaaaatgtgg
233251 gctctgatat atttatgatc tatacactct acactatggt actggtgaag
233301 cctatagact tctgagtttc cattataacc ccatgttgag taaagtttta
233351 agggcacagg aagggtgctg atttggacct catacagaac aactttagtg
233401 acactagaat gtgagctttg tgagggcagg atgttggtgt gttttgctca
233451 ctgcttcatc ctcagcacct aaaataatgc tttgtacacg gtaggcactc
233501 aacaaatatt tgttaataaa tctccaacta atttttaaa aattataaat
233551 tactttcctg ttttctacta tgccttttgt ctctaatcat aaggaaaaac
233601 agagaggaag tgctgacttt tagatgatga gtggggaagc tcataaagac
233651 agaactggag ttttttggtt ttcattgtgt tttttgtcct acaaagcaaa
233701 taatgctttc tctcagaaag aagctcactc aggcttactc tgacatgttc
233751 aactttacta ctgactttcc taacaagcaa agagcattta tgctgaacca
233801 catcttctgg aaagtcttgc ttttacccca actgtctcac tgttcatgga
233851 tggggaggtg caactaaact gggttgtagt gaggacagaa catgtcactc
233901 tgttactggc tttagaaaaa gtagagccag tggcctatga ttccaaatag
233951 aagaactatt gcccttctac agaatgtgct ttcaaacctt gcccctgacc
234001 cacaacaaaa aatacggcta acacaaaaac cccagtaaca agctaacatg
234051 tgtgcaagta aagcaaaagt ttcacaaaac aactgctctt accacatctg
234101 atgcagtctg atattgtcta tgctattcaa tttaatattt ttaaactgtg
234151 gattacagct cagcaaactg attttatgac ctactagtga gtggaaagcc
234201 acagtttgaa caatgctgac aaggagacag tgctttcttc ccctggacct
234251 gtaggcacta tgtaacggag tatctagtca tgaagaaaac tggctctgga
234301 gcctcctacc tgacttcacg tactgcctct gcaacttaca aggtgcctgg
234351 acaaattact taacctctct gggcccctat ttcctcatat gtaaaatgga
234401 aataacatac ctatgtcata ggattattat aaggattaaa tgaattaatg
234451 tataaagtac tcagaatagt gcctggtaca cagtgagcac tgtataaata
234501 ttagctaaga ttattattat taatgtgcct actgaggagg aaaaacacac
234551 actgagaatt aggtaagatg taagagaagg tcaagaggtc ctacgtatcc
234601 tgatgctctt gttagaagca gaaaaagaaa actgataatc tcaaaatctt
234651 ctacatagaa ccaagcaaat gttagtctat agtaatttgg tgtttctctt
234701 tgatgcctaa atagatattt gaattagatc tcacagttta tgttggcatc
234751 taaaatctca ctggctctta tctgaaccca atccactcct gattaagata

FIG. 5 CONT'D

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234801 atggttggat agtaatccat tcctgattag tgttgaatag ttaattttga
234851 gatagtgggc actttatatt ccaattttta aaatagcctt attgagatat
234901 catttacata ccacaaaatt tcattatttg agtataccag ccaatgattt
234951 taggggattg aggagagttg tgtaatcaac gctgcaattc aatttcagaa
235001 cacttccttt actcctattt gtatcatctg cctacttgca gtctgcctat
235051 tttaaatgag gaaaacaatc atgcattgcc aggccatcca aaaaccccaa
235101 ctaattcccg caaatatgac taacataccc aacttaacta tttaacacta
235151 ctgtaccaga tagaaattac attttccttc tacagtgaag ccaacatgtc
235201 ctgtaatgta aataaacaat agaataatat gttaacgata ttaaaaatat
235251 tatctaaatt ggactcaggc acctggcaga agcaaataac agaagcaaat
235301 aacggaagca aaaaccttca gggaaaggaa agagaaaata acaataaaat
235351 acacctttgg gagcttaaga ggatggggat attctatcag gggaagactg
235401 aaataaaact gtaatagcct cttatgtttt ccccaagaag ttttcagcag
235451 tgcttacagg cagaattctt atcccatgtt ttcaatccag aaattaaaat
235501 ctgagttaaa aaaaaccctg caagtcatta tgctaaatat tcagaaagtg
235551 agaataccca ctagggatgg ctataatgaa aaagacatac taagcactgg
235601 caaaaatgta gagaaactgg aactctcaaa cattgctggt aaaaatgtaa
235651 aatggagcag ctgctttaga agcaggtcaa tagttcctca gaaattaaac
235701 acagccaccg tatgacccag caatcccact cctaggttta tatccaagag
235751 aaatgaaaac atacacccat acaaaaactt atacatgaat gttcaaagca
235801 gcattatcca taataccccа aaagtagaaa aaaaaatgtc cattaactgc
235851 tgaatggata aatgtggtac attcataaaa tggaacatta tttggcaaaa
235901 aaaggaatga agtcctgata cataatacaa tatgggtgaa aacactatgc
235951 taagaagcca gtctcaaaag gtcacatatt gtatgattcc attcatataa
236001 aatgtccaga ataggcaaat ccagagacat aaaataggtt catagttgtc
236051 tagagttagg agggttgaga ggaaagggga agtgactgct aagggttaca
236101 gagctgcttt gcaggaagat gaaagggttc taaaataatt gtgaggatag
236151 ttacacaact ctgtgaacat actaaaaact actgacttgt acacttcaat
236201 gggtgttcta gaattctagg atacattaat tctatctcaa taaagcaaac
236251 acattttgtt tatttatttt tttgagacac agtctcgctc ttgtcaccca
236301 ggctaaagtg cagtggcatg atctcaactc actgcaacct tcccctccta
236351 ggttcaagcg attcttctgc ctcctgagta gctgggatta caggcatgtg
236401 caaccatgcc cggctaattg tagttttagt acagcccggg gtttcaccat
236451 gttggccagg ctggtctcaa actcctgacc tcaagtgatc tactcaccta
236501 gacctcctaa agtgctggaa ttacagacat gagccaccac gcccagccaa
236551 gcaaacatat tttaaaagca tcattttgcc atgtgctttt tactctttca
236601 cctcatgtat atttgaaaag aaccttatgt ttttaattaa tttacatttt
236651 attcatcaaa atgttttgtt ttttgagatg gagtctcact ctgttgccca
236701 tgctgggtgc agtggtgcga tctcggctca ctgccacctc tccctcccag
236751 gttcaagtga ttctcttgcc tcatcttcct gagtagctgt gattacaggt
236801 gcatgccacc atgcctggct aatttttgta ttttagtag agacgcagtt
236851 tcaccatgtt agccaggctg gtctcgaact cctgacctca agtgatccac
236901 ccgcctcggc ctcccaaagt gctgggatta caggcgtgaa ccacccttag
236951 tcatcaaaat attttcaaag aactattcga taaatatcaa gtctttcaaa
237001 agttcttcaa aagcttattt tcctcctttg aatcataaag ttctattcca
237051 ctaaaaaata tgaaattcca gcctgagcaa catggcaaaa ccctgtctct
237101 caaaaaaata caaaaattag ccacatgtgg tggcatatgc ctgtagtccc
237151 agctgctcag aggactgagg tgggcggact gcttgagccc gggaggtcaa
237201 ggctgcagtg agtcaagatc ataccactgc actgcagcct gggcaacaga
237251 gagaaaagaa accctgtctc aaaaaatagg aagaagaaga aatgaaattc
237301 aaaatgtaaa atttccagtg cttgaatcac agttttcaaa ttcagcttca
237351 gtactgtcaa ttggcaaaac aacaacaaca aaaaccccaa actttattat
237401 tttaatctat ttggttcata ttttgcaaga gatggtggat ctagaaaact
237451 ttaaccggga ttttatgacc ttcccctccc caccccgcca aatctgaaca
237501 aagagctcaa actacttttt ttccttcttt tattccatat catatagaag
237551 aatgccacag ttgcaaaaga gcaagctatc tctaaaatcc agggccaaga
237601 tcagcaatcc cagtacttaa gtcaaaagaa tcaataaaca gtaaatagga
237651 ttaattaaat tcattctatg tttcaatttg tccaggtttt aaacacatta
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FIG. 5 CONT'D

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237701 ttcaatcaca gccatcataa aataagaaat attatattaa acgcattaac
237751 tttagattag aggatgacaa gtttaaggaa gttgcagaca tccatttaga
237801 tatctgtgaa aggacaatta ttttaatatt ctttaatgta caagatttta
237851 ttaatatttc tacagcactg tcaagaaaaa aaggaggccc caatgaactg
237901 acaagtaggc taacatatag atttgtcttg ccatatttct ctatgtaagt
237951 aaattcagtt ctgaaaaata atgcataaat atactttaat gatacaactt
238001 catttatcct caccttgttg acttttttcat cttatgttcc caaatctact
238051 cctctgctgg gttattagca ttttgcagtt atagttatat attttatcaa
238101 tgtattagag acagctaatt gccttccaat atctgttctc cacttcttcc
238151 ctaacaaaac gctgtttatt tcatcacttt gccaaacagt ataaaagctc
238201 aattttccag gctgtcgcct cagcttccca agtagctgga atgtcagcta
238251 aaggagtcag tgtgacttag tcctggacaa taaaatgcaa gtaggggctt
238301 ctgggtagac atatttttct ttattcttct aagtaaaacc aaaagccatg
238351 tacattatgt ttattatata aaatgtgttt gctttattga gatagaatta
238401 atgtatccta gaattctaga acacccatta ttctaacttt attagaaatg
238451 ctaagcatca gtattactgt tggaattacg agaatttgaa agatagctgc
238501 atataaggtc aagaatcagt aagtagaact acaaagcaga aaaaaaatta
238551 ttacatttaa tataacagta aattctaagg gacttagaaa taaatttagc
238601 aagcgaagaa cacatctgca tgaagaaaaa aataataatc atatctaagg
238651 gcaaagaata agatctgaac tagtgagcaa aatatctgta cattatattt
238701 caactaaaac caaaaggatt ctgaaaggtg gagagacgac aaactggcta
238751 gggacctcag gacccaggag aaaacatggt aatgatatcc tgaattttct
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238851 aggaacacca agtgcaaaga aactgcctcc cctctctgcc cgcccctgga
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239001 aaactccacc cgacccccac cagcaaaaac caagtggaaa gcctagactt
239051 ccatccctgt ctggctgtaa gaggaggcac cccaagctct ttccctaaat
239101 ggggaacaag gggaaagttg ggacattcat ccccccttgag catgatctaa
239151 tatccccctt cccatctgcg ctagtggaga ccactttagg agcctggact
239201 tgcagcccac gcatcagtca caaggtgctc ctccccccgac tgcaggagtg
239251 gtgccagagg agacttgttg agtgctggac tttcaccacc acttagcagt
239301 accaaggcct cccctccaca tggtgtcagt ggaggtccat cagagagcag
239351 taataaggca ctcctctacc tcctaatgag aggggtacca gtggaggcct
239401 agtggagagc ctgaacctcc tcctctaccc agcagtaaca agcaaacccc
239451 ctcccctagg tggtcaactg agaacaggga gagaaccaag cccctctggt
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239551 gctaaaacac agatttaagt aagacccaga gtcttataac ataatacaca
239601 caaaaaataa taataataca caaatgtcca agtttcagtc aaaaatcact
239651 tatttaatca caaagagata taccatttgt ttgatggggg cggggagaga
239701 gggataactt ataccaagaa ccaataaaga tctcaaactg aatgattaaa
239751 gacaatcaaa agatgtcaac actgagatga aacagcttga ctgtgcaaca
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239851 gacattgcac ttatacagta aaagccttta ctaatttata aattataaac
239901 tttgtgataa aggaaagagt taagtatttc caaggaattt tagcccaagg
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240101 aaatacaaaa agttagttgg gcataatggc attagcctgt cttcccagct
240151 actcaggagg ctgaggcaga agaatggctt gaactgggag gtggaggtta
240201 cagtgagctg agattgtgcc actgcactcc agcctgggag acagagcgag
240251 actctgtctc aaaataaata aataaatata attttaaagt gtatttctcc
240301 cttaattttt ttttttttg agggatgagt ctcactatgt cccccaggct
240351 ggtctcaaac tcccaggttc agtgatcctc ccacctcagc ctcctgaata
240401 gctgggacta taaatgcacc cggcttccct tacttttta tttcttaaac
240451 ttaccgttga ttagaagcaa ccggaatgaa ttccttgcac ttctcaaatt
240501 tattattctc taatattagt taccgtgcaa ttcttacaag accaaaagca
240551 ttttaaaagt caatctttaa gtattaaaaa atatactgga aagactcacc
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FIG. 5 CONT'D

240601 aaaataattt atgaatgaga tgatactagg tcatttttaa gaacactaga
240651 aaatgttatt tttacattct cagtgtacag aatttttttcc aagttatacg
240701 taaaaactag gaaaaaacaa aatccacaga cctaatgcag aaatgtgata
240751 cagcttgggt gaggataaaa agaggaagaa acagctgtgc tactcatgaa
240801 ggactatacc atagatcatt gatgctctat cattagtatc atcaggatca
240851 cctggacggc aggtgaaaca gattactggg tcctttccgc agaatttcag
240901 attaaataaa tctagggcag gtgagaattg gcatatcaaa caagtcccca
240951 ggggacgttg attctgctgg tccaatgacc acattttgag aaccactgcc
241001 ttaaagagat gatgcctgtg cagatcacaa aatataataa taaaggtcag
241051 ctactggaag cctaactcta gtgaagcaag cagaacagct gtacctaatt
241101 ctgaattaag agtaagaatt agaggccagg gacagtggct cacatctata
241151 atcccaacac tttgggaggc caaggtggga ggatcacttg aggccaggag
241201 ttccagagca gcctgggcaa cagagaaaca ctcccatccc tacaaaaaat
241251 aaaataaatc atttttaaa aaaagagtaa aaattagtag gagagaaagg
241301 gaagtcagac cctaagttgc tgtaaaggta aaagttcata aaaaccagaa
241351 aataaaaaca agtaagcaac tctcttccca tacacgacaa ccttattaat
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241701 tccatactga cataagctat tgaataataa ataaacggga gagaagagac
241751 aatctcctgt gcagaagaat tccaagtaat tagcaggtgg aacataactc
241801 cccactccct gagtgtaagt tatagatcgt gacttctttc cagagagcag
241851 catgaaaaga ggggtaatgg aaacctgact gtggagaaac ctcaccaaca
241901 ctacctcacc ctagtgatca aggtcaacat caacagtgat aagtcacatt
241951 gacagtatgt gatgaaaatg gcactgcgct tctgcgatct tcctcaaaac
242001 tcgtaacccc agtctaataa agagaaaaac atcagacaag ttcaaattga
242051 ggaacacttt tacaaagcac ttaaccaaca cttctgaaca ctgtgaaggt
242101 cataaaaaac aaggaacgtc tgaaaaactg tcacagccaa aaggagccta
242151 aggagacatg atgactacat gtaacgtggc atcctggaac agaaaaggct
242201 cattaggtaa aaaccaagac aatttgaaca aagtatggac tctaattaat
242251 gataatgtaa aaatgtatca gtattagttc attaattgta acatgttaat
242301 atgtaacagt taataaactg gttgtaggat atatgggaac cctctgcacc
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242401 attttaaaac ttgagaatta acttctcaga acactaattt agtttttaaa
242451 agtcaaaaaa ttccaatgat ggaaaataaa ggaatacatg aatatattat
242501 ggaataaata agtatatgga gatttgctcc tgacaggaat ttctaaataa
242551 gtttaatgta tattttataa tgagaggatg ggaatatcaa attatatatt
242601 tttaagttaa tggtactgag ttcatttcac cagaattaca ccattataaa
242651 gctacgattg acaaaatcca caagaatgca ttaagcagaa aacacggcca
242701 aaaacttttc agtagtaaaa ctaatttaaa atgtaacaag cacaaagcaa
242751 ttccaattaa ataaataatg aaataggatg tcagtttaga aaagaatgaa
242801 tctgaattaa tatttcacaa tgcacatggt aatatatttc aggaggttaa
242851 aaaagtaaac ctaagaaaag tcaaaaaata actaaacagg agaacatttt
242901 tttactttac cttagaagaa aaatttgagt cctgaagaaa aagacaattt
242951 caatattgaa aacttttatt tttacatgaa aaataaaaac tttttatgca
243001 atcaataaaa caaaaattat aggaataaat gtaacagact aggagaaatc
243051 attacaaagc ttgctaccca aaatatccat atacaaaaat ataggcatat
243101 gtagaaaaat acatatgtct atacacacgt atatagagat gagtataaaa
243151 gttcagttgt gcattgccaa gggaataatt tccaagtagg aatacaataa
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243251 taaactatgc aaaaacaggc acaaagctaa aaatatttac tatttggctt
243301 tttacagaaa aggtttgcca acccctgggc taaagaagca agttaattca
243351 ctgacccaca caatttttag tgaggttgag atagtcatta cagacaatcc
243401 ttttcaaaaa aggagggaaa tgcaaagtac atagaatcag gttactaaaa
243451 tacagaggga aatgttggaa atctggaaat tcgttaagac tcagtcctat

FIG. 5 CONT'D

243501 ttccatcggg aaatgattct ccatggctct gggatccatc ttccaggttc
243551 agccctctga gacactcttt ctttttaatg aaaggtagca cttgctttct
243601 gctaagcagt tttctcatca tgcttcctac ttgtagaagt ttgggggtcc
243651 aaaggcatct tttcattttg tactctctga ccccttaat ccaaactagt
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246251 ggcaattcca ggcagagtct catttacaac acccaaataa ggaaggaaag
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246351 ggggaaaata ttgttcaggg agctctccaa taaacttcta tatctctttg

FIG. 5 CONT'D

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246501 taggaggttg gtatgacttt tgcatagaca acggtctacc acaaaagtta
246551 agtaaaaagc atagcaaaga taaacaagtc aatgattaca atcacatatt
246601 ttgaatatat atttctaaat tccagaaatt aaatggttta cttcaaagat
246651 gtctgaaaat ttgtttttaa gttgatataa atgtaaacaa aaaatgctaa
246701 attaatattc ctcactataa ttatatagca ttttataata tccagactgt
246751 tcatatgtat tctttacaat agccttgaaa gaaaactaaa gcaaatatta
246801 ttatgttagc cccactttac agataagaaa catgaatcaa tggtatgacc
246851 atagctcact gcagccttca actcccagac tagagtgatg ctcctgcttc
246901 aaccttccta gtagctggcc ctacaggcat gccaccatac tggctaattt
246951 ttaaaatttt tttagagatg aggtcttatt atgttgccca agctgctctt
247001 gaattcctga cctcaagcgg tcctcctgcc tcagcctctc aaatagctga
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247101 acactaatac tacagtaatt tgcttaaccc tctatcactg acattaggtt
247151 atttcccatt tgtcactctc atagtcaatc ctatcaaaat attttcatgc
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247301 atgctgattt ctaaaagcaa tttaatatag tttagttaac taaagatgct
247351 accagcatga gtataccatg aggttcacca aaacctcacc atccccaagt
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247501 gtgtttttca ctttgttctt atgagaacta taaattcata tctgtatttc
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247701 aattctattc tataaaatgc tcttcagtgt tttgttttgt tttttcactc
247751 caaaatggaa aagttactag ctgtccaaaa agttgataaa catgctacca
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247851 tgatattcaa tttaaattta gttgcacaat tcaaaaattg cacttaacta
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248601 tagaaactca atctgcaagc ctttcacatg aattattatc aagacatgtt
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249251 tgggcttggt ggcacactcc tgtaatccca gctacttatg aggctgtggc
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FIG. 5 CONT'D

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249401 aaataaaaaa caaaaaataa aataaaaaac aaaaagtaaa aaaaatctac
249451 ctaccattcc attcccagga attcactcaa aagaaaagaa tgcatatgtc
249501 catataaaaa cttatacatg aatattcata gtatctttat ctgtattagc
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FIG. 5 CONT'D

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255051 tctctctatc accaagcctc caggtagatg gtgacccttc caaggcaccc

FIG. 5 CONT'D

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255551 caggctggag tgcagtggcg caatcacagc tcactgtagc cttgacctcc
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257751 gtgcagaagc tctttagttt aattaggtcc tacttgtcaa cttttgtttt
257801 tgttgcaatt gcttttgaag acttagtcat aaattctttc ccaaggctga
257851 tgtccagaat gtttcctaga ttttttccta ggattcttac tgtttgagtt
257901 cttacattta aatctttaat ccatcttgaa ttgatttttg tatgtggtgt
257951 aaggtagaag tccagttttg tatgtggtgt aaggtagaag cccagtctta
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FIG. 5 CONT'D

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258001 tacacatggc tagccagtta tcccagcacc atttattgaa taggaagttc
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258101 gtacagctta atttctgggc tctctattct gctccattgg cctatatgtc
258151 tgtttttgta ccagtaccat gctttttttgg ttactgtagc ctcaaagtat
258201 aatttgaaac aagctacaca ttcagtagca ctgaatgtgt agcttgtttt
258251 gggcagtatg gcgattctaa tgatattgat tcttccaatc catgagcatg
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258451 gctatcgtaa acaggactgc attcttgatt tggctctctg ctccaacatt
258501 attggtatag aaacgctact gatttttgta cagagtttgt atcctgaaac
258551 ttactgaagt tatcagttcc aagagccttt ggtggagtct ttagggtttt
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258651 cctatgtgga tgccttttgt ttctcttgcc tgattgctct ggctagaact
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258951 tatataacta tatactaaaa ggaggttccc ggctaggtac agtggcttat
259001 gcctataatg ctagcacttc gggaagccaa agcaggagga tcactggagt
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259501 attttaactg ataatgccaa gtgctgacaa ggatgaaaaa ctactggaac
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260551 tgcgagatgt ctttatcatg tattgttgat taggttgttc atcagttaat
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260701 agcttggtct tcagatccaa tacattttcc cctcaaatga aagacaatgc
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260801 acaaggttaa gtcctgtctt cttcctccta ccccaaaaag agctcagaaa
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FIG. 5 CONT'D

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261051 atgcttggct gcccgctaat gtacaatttt gcccaaacgc agaacttgac
261101 gcccactatt accaaaggat ggccttagta aagtaacccc cgcgaagagc
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261401 aaaccaaaac ctgggatccc tactattacc accaccacaa ccatcaccac
261451 caccaccacc accattcctc gctctctcta gccagggatg agactcaggc
261501 ccaggaaacc catcctttcc gcaagtagga aggcgctggg tctcctccct
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FIG. 5 CONT'D

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263951 ccagattttg accttgagtt ttttcttgcg tgtcaaggtt atacttataa
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264601 tgagcatttt tagttttaat aggtcatgct aaatttgcct ccaaaaatac
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265151 attctccgaa tgtttcatca ttgagtatga tgtttgctgt cattgagtag
265201 gatgttttgg tagatagcct cgatcagaat aagaaagttc tctttttttcc
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265301 ttgttttgtt tttctgcatg aagtgatagt tttcctccct ttgcctgtta
265351 atataagcat tcacattgat aaacttttca tgttaaactt tttaggtatt
265401 cttgggataa actattttgg taatacattc ttattctact gctggatacc
265451 tttattcagt atttttgtgt ctaagaccca gtagtgattt gggccttgag
265501 tttttttctt gcatgtcaag gttatactta tctcataaaa aaaagttgag
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266601 tacataaagg gtcatgaata ttaaatctgg tgaattgttc tgtcagcata
266651 aaatatttgt gtcttttatt gattttcata ttcaactctt atttgatacg
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FIG. 5 CONT'D

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267651 atggaaagat agcttggctg gatatagagt tctgggttca tactgacttt
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267751 ctaatacacc ttccttttag ataatctaca tttttctgga aacatctaag
267801 actttgtgtt tttgatattc tgaagttagt cacggtttgt ctagcgatgt
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267901 gtgttttcca gttctgagaa attcttgctc attattgcct cctctccatt
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268001 ttactcaact cagtcttcca gcttactaac tggctcttca tgttagtctg
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268101 ccaagatagc taactggctt tttttcaaaa ttgtgtgtta tttcatggat
268151 gagatttcct tctttagctc agtctctttc atagtgtagc cttcttcaga
268201 tatttgagga ctctcagttg tgcattaatc tcctctgaga ggattcctgc
268251 ccatcgtttt gctgttgtga ttgtggttgc catcatctct atagcttccc
268301 atctgtttcc tttccccaga agggccttac tgacttggcc cttagagagt
268351 tccctttttg ttttcagcat ggctatatat atatatttta aatctcctaa
268401 catttccatg gtttggtgtg gaagtggcag aagaatttac agtatcttga
268451 ctaacatctt gagaattaaa attgttgatc tatttttgac ctattattct
268501 acctccagat atgttatcct agggaaattg ccagagatat gtataaagta
268551 tatttatttt agcattattt attatactaa aaattaatct ataaaggaaa
268601 acaatctaaa tatcgaatat agaggtttat attattaatt aatatttta
268651 ttaaaattta attattaaaa tatttaatgt actataatgt atgcgttatt
268701 gaccaaagta tgttatacag ccagttgtat tatacaaaaa tattagtgat
268751 ggaggaaaat gcaggaaatg tttttaatga aagattataa aaaattaaat
268801 atactacaat ccaaattttt gttttaaaac tacattctga aagaataaca
268851 ataattggta gtattccttg aatctttcgt atgtcaggca cattatatgt
268901 aattaagtct tgtcctcaga acaacctgtg agatagttag tattatcccc
268951 tttttaaaag gtttataaaa gacttataaa atggagatag taatataaat
269001 acaaatatat taaatatggg tgataggatt gggtgggcct tctctattat
269051 ttctaatttt gatactttac atatttttttc cagataacat aatgtttttt
269101 tgtaatggtt catgctgttt taaaagatca agctgttata acaatatctt
269151 atttccttat atatacatat atatatatat atatatatat atatgtggtc
269201 ctttacaaat atgcactatt ctttattgtt ttccttacag aatgtttcat
269251 ccatttgtgg accaaaagat ggagttggtt tttatttta aaaagataat
269301 gttaatgatc tgataccact acaaatattt acgtgagaag attcatggac
269351 ttgtcttttg gttggactgt cactcatttc tgaaagtttc ttcagccaca
269401 atttctattt gaaaattcaa gtatcaaagg ataccaggtt tagaatggta
269451 taatgatgta ttttgtctga ggactgcaaa ttttatagag accacagttg
269501 gattccagtg atattctgca atcaaagtga tttgataaac ctaattttga
269551 agcattttat atttataagc gacatcaaaa gatgggagaa aaaaatggta
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FIG. 5 CONT'D

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269601 ggttgaagaa cacactgtta cactttatat ctaaaagtat aaaagtatat
269651 agacaatgta agctgatgtg gaattgtcaa ggttttgcat tgcgaggaac
269701 ttttctgaat tagagggaat taagggttta ttcttgtata gccaccaatt
269751 ttgactgtct ttatcattag ttgtgaaaaa attgactttt ttgtaaactt
269801 ttttttttt ctttttttt ggtgatggag tctctgtcgc ccaggctgta
269851 gtgcagtagc acaatcttgg ctcactgcaa cctctgcctc ctgggatcaa
269901 gcgattctcc tgccacagcc tcctgagtag ctgggattac aggcatgtgc
269951 caccatgccc agctaatttt ttgtattttt agtagagatg gggtttcacc
270001 atgttggtca ggctggtctc aaactcctga cctcatgatc tgtccacctt
270051 ggcctcccaa agtgctagga ttacagcact tgcacctggc caaaataggt
270101 gagccactgc acctggccaa aatactttta gtgttacaga aaaattgaga
270151 ggattgcaga gttccagtaa acctggtact tagctttatc tatgattaac
270201 attttacatt tggatgctac atttgttaca attaatgaac caatattggc
270251 acattattat taactgaagt ccatagtata ttcacgttag tttttacctg
270301 atgtcttttt ccattccaag atcccatcca ggacaccaca ttccatttac
270351 ttgtcatgtc tgcttaggct cctcctagct gtgatagttt ctgagacttt
270401 tcttgttttt tatttttttg ggattttgta tccaaatatt ttgtaagatg
270451 cccctctgtt ggaattattg tctgatgttt ttccataatt tgactggagc
270501 gatgggtttt ggggagtgtg atctcagagg taaaatgtca ttttcatcac
270551 atcatatcaa gggtacatgc tgtcagcatg atttctcaga gttgatattg
270601 aacttgatca acagagcttg agctggctaa tgtaggtggt ggtatcaaat
270651 ttctccactg taaagttact ctttttctcc cattccctgc tatactcttc
270701 ggaaataaat cactataggt agcccacagt taaggagtgg ggatttatgc
270751 tccccctcct taaatgtgga atatctacgt taattatatt tggaatattt
270801 ctgcagggga gatttatctc tctctcttct tccctgttta tttattcagt
270851 taatcattta tatcagcatg gactcatggc tatttatttt atacttttg
270901 agttacaagc cagtactact ttatttattt tgtttttcaa attgtcccgg
270951 gtttggctat tgggagctct ttcagttggc tctttttttt ctttttttt
271001 ttaagatggc gtctcactct gttgcccagg ttcatgtgca gcagcgcaat
271051 cttggctcac tgcaacctct gcctcctggg ttcaagcaat tctcttgcct
271101 cagcctcctg agtagctagg attacaggtg tgtgccgcca cgcccagcta
271151 atttttgtat ttttagtaga gatgggggtt tcaccatatt ggccaggctg
271201 gtctcgaact cctgacctca agtgatccac ccgccttagc ctcccaaagc
271251 gctgggatta caggcatgaa ccaccatgtc ctgctcagtt ggctcttgtg
271301 tccctttgat ataccgtcat cagtgtaggt atttttttatt tgtctttgtt
271351 ttatagcact tccctttttgg cactcgaaga ttgctctaga ttgctctcgt
271401 atatttctta cgcatcttag agtgagccat ttcttgaata acctgtcaat
271451 atttttattg gaaaatggta ttagaaacca aggtctgaat gataggtgta
271501 tttgttgtta ctggagtgtc cttgtttata ggccctttca gctggcagag
271551 caatgaagta tatatatata tactaactta tatatacaca actcatggct
271601 ataaatattt ctatatgtaa ctgtttgtat ctgccttaag ctaaccatga
271651 aattacgctg atgtttccaa ctctaatcta ttaccacgtg gatcatttta
271701 gtctcctcac cttatctgta tgctcccact ccagtagtaa aaaacttagt
271751 tcccatcacc caccatccat ttacttaatt gttcaattcc agtatatata
271801 tgtagcagta tcagaattgt taacccttga ctgggcaccg tggcttatac
271851 ctataatccc agcactttga aaggccgagg ccaggagtta gaccagcctg
271901 gtaaacatgg caaaatcctg tctctactta aaaaaaaata ataatagtaa
271951 tacaaagtgg cacacgccta tatgtaatcc cagctattcc agaggctggg
272001 gcatgataat tgcttgaacc caggaggcag atgttgcagt gagctgagat
272051 tgtgccactg tattgcagcc tgggtgacaa agcaagacta tctcaaaata
272101 aataaataaa taaaaataga attttaaccc atccccaggt aggaaaatac
272151 tttatcaact agagtacagt aagtaagtaa gtatatgcag ttacttttgc
272201 ctttatttt acagactcca ctcatttcca aagttactta ggtcagtacc
272251 ttttccaccc agcccttggt gaagttgttt atacatttgt aatacagtta
272301 gattctcttc atagtctgca ttccttactg agatccctga cgtcctaaat
272351 gatttttaaa atttgcatac gttattagtt cattgtttac tctttaaatt
272401 ctgtgggttt ttacaactgc ataatgtcat gcatctataa ttatagtatc
272451 atacacaata gtttcggtgc ctttaacata gttgtaatgt atggattgtt
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FIG. 5 CONT'D

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272501 atacagatca tagtactgat ttcaccaggc tgtgatctaa gccagtggtt
272551 ctcaattttt tttttggtct caggatgact ttatactctt tagagtattt
272601 aaaaccgcaa agagcttttg tttatgtggg taacatctgt tgatacttac
272651 tgtaatagaa attgaaacta agaagtttca aaaaatatta attggcttat
272701 ttttaagaaa ataataaatc caacatgttg aaaatataaa tagaaactat
272751 tttctaaagc aaaaatatta gtgagaagga taacattgtc ttaccttgtt
272801 agaaatatct ttaataactg gcttattaga ttcttatatc tgcttctaca
272851 ttcagtcttc tgtgttatat tactttggtt gaactgaata aaagacaagc
272901 ttcacacaga caggaagctg aagaaggaag agtatttcaa tagcctttca
272951 tctaattgtg gatatttttc tttgttgact ccaaaactca acaggtagtc
273001 attccttaaa ggttagttgg agtgtggagt ctgacatatc attgagtatt
273051 tttacaatgt tacattaaaa tccattggtc tatcttgcac tttgagtaga
273101 tcttttacca tgtatgattt tacatgtatt gaccacttgt aaaatattgg
273151 ctcagtgaat tatgcagatc ttccaaatgt tgacacattt aatcatataa
273201 ttttaaaatc acatttgtta atatagctac tgatctcatt ttaaaagtgg
273251 ttaactcttc agaaactttc aggtttgcca tggcagatac aaggttttca
273301 aaattctcat tttcattctg tagcttgaat tttgtcatta gcaagaaata
273351 ttgttagttt tgtccttcaa gtgataggct cactttgctc atatgccaaa
273401 cactcaagtc tggaaaacta cagttttatc agtggttctt ttaagtaaaa
273451 atggttttca tttaaaaaaa aacaaaaaaa aactagatag tttagtttac
273501 aagttgaaca atcccactag tatttttttct tgagacagcc attgtactat
273551 aatggctgta caaatgattg taataactta tgttgtttca ttaaaggtgt
273601 acttagatga aattggtggt gaagatcaca atagtaagtg aactatcact
273651 tactgatagt ttgatgccac taacttgatt catgctaagt cactagcagt
273701 tttactcacc agtgcctttg tactatcagt tgtcaatata ataaaaacag
273751 caaatgtcct aatattattt tttaaatagt ttgtccttgt gtattctctg
273801 aaatgatttg gggagtccta ggggtccaca gaccacattt tgctaattac
273851 aggttcaaag ataccttaga gttcctctag accaataccc tataagcccc
273901 ttactacata tgtttctgtg tactgaggtc attattaatg tatttggtaa
273951 gtatttcata aatacttggc tagcaaatga attcagatca gtattattca
274001 tgagcattgt ctgtttacaa agactgtcta gagtgagatt ggtagacata
274051 gtataactat accatgtact tggcgtcctt cattacaagg ctgctacact
274101 tcttgcctca tggttatagt cttgcaatga atagtcataa ctggctaaat
274151 aaaaaagaga gtttgaacag ataataaagt taccagatgg tattcttcat
274201 ttctgggggc aaatagcagc aatattagta tgctgaattg atcttcaatt
274251 caggtacctg ctccagtatt ccttgtaaat atcttctagt aaaatatacc
274301 gaaatattta gttttaggtt ataatgctga gcatgcatac aatgccgaaa
274351 gaagtgaaga tcaggagcaa gaaactaaaa ttgtttgtat tgtagtaact
274401 atgtctacag tcgaaaccaa agtctcccag atgtttcttg tgatactcat
274451 ttagtctcct tgtgcacaga agttgttaac tggatctatt agtttcattt
274501 atcagaaagt ttggttacct cttttcttat tactgtggtt aagggcttcc
274551 atagcaagaa gacaaagaaa aatgatcaag aaggaagaca tgaggaacaa
274601 gtgccatttt aatgaaaatt aaacctagca atatgagata ataaggaagt
274651 cataaggaac aacatattta tttaaaaccc agaacaaata aatatgaatt
274701 gcttagttac attcatttat tgtagaagca gattcagtat tttctttgat
274751 tggctttgtg tttttaaatt atattaccag tgtccttttt tttttcaaaa
274801 tcatttccaa gattgatcat ttactctgtt tacttttaa ataactcatt
274851 ttaagtagtt cctaccagaa taatttagta gcatgtattg gcatttctaa
274901 gacttttttt tttttttga aagagtctcg ctctgtgttt tattaatcgg
274951 ttccaagatt gagcatttac tctgtttact ttttaaatga ctcattttaa
275001 gtatttccta ccagaataat ttagtagcat gtgttggcat ttctaagact
275051 ttttttttt aataactcat tttaagtatt tcctaccaaa taatttagta
275101 gcatgtattg gcatttctaa gacttttttt ttttttttt tgaaagagtc
275151 ttgctctgtt acccaggctg gagtgcagtg gcgcaatctc aacccactgt
275201 aacctccgcc tcctaggttc aagcaattct catgcctcag cctcccgagt
275251 agctgggacc acatgcgtgt gccaccacgc ccagctaact tttttgtgtt
275301 tttggtagag atggggtttc accgtgttgg ccaggcatgt ctcaaactcc
275351 tggcctcaag tgatctgcct gcctcagcct cccatgaggt gtggtggcac
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FIG. 5 CONT'D

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275401 cacacctagc ctctaaaaca attttaaatg ataaaaaaaa caaaaattca
275451 ttgagtcttg attgttgtct ttcagcatca cagcttttt ttcctcagtc
275501 caggacaaaa ttttatgtga ttccagaata ctttaatgtt accaaaagct
275551 atttttaaat acttccaaaa tacttgaaaa tacttcaaaa tacatctcaa
275601 tgtccacctc taataaagat aaatccctag taagaggtat tgactcatat
275651 ctgtgaaggg aaacttaaca ataatctatg aagtgctttg aaaaataatt
275701 ttgcctaaaa gtggtttttg ttgattatca gtgaaaaacc taatgatttc
275751 aggcaccctg agaaagccct gcttcacaaa atattttcct cattaagctg
275801 attgttctct aaaattccac agtgaaagat gaattccttt tgttcactgc
275851 agcctcgaac tcctgggctc aagcaatcct ctcgcctcag cctcctgagt
275901 agctcggact acaggcatgt accacctcgc ctggctgatt tttttgtaga
275951 gaggaggtct tgctatgtta cccaggctgg tcttgaactt ggcctcaagt
276001 gattctcctg tctcggtctc ctaaagtgct gggattacag gcctgagata
276051 ctgtgcccag tttgttattt ccattttata gatgtggtca cacagttaat
276101 aaatgggtca gaactagtat tcaaacccaa ctacacttga actccaaagc
276151 ctaggttgtt aatcaccact ctttttcttt ccttggcttc tgagatacta
276201 ctctcctggg tttctcttcc acctcagtct ctatagttcc ttttccttgt
276251 attgttgatg ttctacataa gacccttctt attctgtatg ttctccctat
276301 ggaattacat ctactctatg gcatcagcaa gtatttgtac gttaatgact
276351 ccaatttgta tttctgaacc agatcttact ctagagccta tgcatccagt
276401 ttgttcggag agcctcttac tacttgaatt tgccacctgt ccctctacct
276451 ttattcatac cttaatgaat agcattattg tccatatgat tgcctgaggc
276501 aaaaaagtgg agatcattca tgactcctcc cactgctacc tgagtgatct
276551 ttctggaaaa cataactaat cacatcataa gatccttata cctcttgggt
276601 agctttccat ataaaaggtg cttagcatgg cacatagggc cttcgatgtc
276651 atgccctacc tgccttttaa gcaccagttc tcatccattt tgtcctctta
276701 cattgctctt gtttaaaatc ttgaaatttt gtttgagctg tgctatgggg
276751 aattaaaagt aagcttagtc ttacatagta tacatcagtc cagagtatta
276801 gtagtaaaac aacacccctc cagaggccac tatgttggca gcagcactaa
276851 ctagccagaa gtcccctttg ggaaaggtga ctttcccagc aggaattgag
276901 actttgatac ctaagcccct tatgcagatt ctcccttctt tgccaaactt
276951 ggaggttctg ggtttaattt gtgttaggga aaatgtattt tttgtaagcc
277001 atctggactg tctactcatt aatcctccct gtgcctactc cagtgacctt
277051 tctaaaatgc aattattacg atgtctttcc tttgcttata ggccctatta
277101 gttaatttta aataatttta tacattgtaa cattgtataa atatgcttag
277151 cattttaggt atttttgtta cttttaaacg cgaagtgaga tttagctttt
277201 gacaacttat aattgttttt cttatatttt caattttgaa aggattgttt
277251 ctttaggaaa attttgaagt attagcttac tgggcatcag aaatgttggc
277301 tcatttatgt aactttctct gtacaacttt aaacattaat ttgcttcatg
277351 caattaaaca tatagaagac ttttttaaaa agcagtattg ttggacattt
277401 agttatttca gcagccattg agttgtctca ttctgaaacc acactcggtg
277451 gagattatac cactgagact ttttaaagtg catgtataat ctatacatat
277501 accccacaac cactctccag tgaagtcttc cttctgtttt ctagtcaaga
277551 aagtgtcact aaaatttttca atatatattt taaaaattaa cagaaatggg
277601 taagatactt agatcatatt gtttctagct ctttgtaagg aaacattact
277651 aaaatatttt cctcaaggaa aatgatagac cagatgagtc ttgatcttgt
277701 ttagaaacca agtagattgt tctataacat gttcttagat aaattatagt
277751 atttttctat tagctcttag gctagtcact tatttttatt ttaggcgatg
277801 caaaaacttt ctggatggag ctagaagatg atggaaaagt ggacttcatt
277851 tttgaacaag tacaaaatgt gctgcagtca ctgaaacaaa agatcaaaga
277901 tgggtctgcc accaataaag gtatgaagca ataaaaactt tgaatatgtt
277951 taatactaaa tatttctctc tgacagtaca gtatcattct atttccaata
278001 ttgctgtttg taaaagtaga tggatgtaat tacttttgaa taatacctac
278051 tgaatttctt tttatctcaa gctacttttt tccctcattt atctttttt
278101 ttaggggaat gttgcaaaag taacatctgc tcattatata acatttggca
278151 cttatagaaa aatataacaa ggaaaaatta ttccacattc agagacaact
278201 agtttttca tatgtatgtg taaaagtaca tataacttta ttttgcctgc
278251 tttaaacaga acttactcta ccagtcttct gaaagcaaaa tttgtgttct
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FIG. 5 CONT'D

278301 acataggcag ttagttcagt aatccaagtt tttatttttt ctatttgttt
278351 gttgtcaacc ctggttggtt gtagaacgta agacttgaag atgaaatcct
278401 ccttcaatcc atcaggacat acggttttga agcaaatttt tctccagatt
278451 atttttagta ctttctggat ggtcttatga cattattatt atgtgtttat
278501 caaaaaaaat tggcactgtt tttcatttta atcttccttg tcaatccttc
278551 atgagtcaga taaatctaga ttctaatcca gttgtactac ttcttagctg
278601 aatgtcctgg aataaatagc ttaacctctg agcctcagtt tcttttgtct
278651 ctaatgcaga tagtcctatt aacctctcag aggaatagtg aagattaaat
278701 gagataaaat atgtaaattg tttagcacag tagctggcac cataaataaa
278751 ggtaatggtg atgctgtttt tctgtcttta acagaataca tccaagcaat
278801 gattctagtg aatgaagcaa ctataattaa cagttcaaca tcaataaagg
278851 gtatgtacat ctctattccc attgtagagt attctctgat attttcttgc
278901 catgaagcag gatagcttta atatgttggg ctaattaaag ataatttaaa
278951 ataaaatcta acatccacat ttctaagtta cataaatcac agtttcctct
279001 gttaaatgaa aagtcctacc catctagaga tagtaaatgc acatccaact
279051 aagcagccta gggaaagaat taacaaatgt gtgtcgtctt tgggggaaaa
279101 aaagactttc ttatataaag agggcaaata gaattctaac tttaaaacac
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279251 cagtcttcca agctctaaat cagcttagaa ggatcaaaga taatgtacta
279301 aagaaaaact gtttctcttc tcacaaagct tctgacacca aatgtgggtt
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279551 gaggttccca caacccccctc ctcagattcc atgatttgct ataatggctt
279601 atagaactca cagaagtatt tactattacc agtttattat aaaggatatt
279651 ataaaggata caaatgaata gccagatgaa gaggtacaaa gggcaaagtt
279701 gggaagggcc tgagaacagg agcttctgtc cctgtggagt tttggggtgt
279751 accaccctcc cagtatgtag atacattcac cagtctgaaa gctctctgaa
279801 ccctgttgtt cagggtttt gtggaggtct cattacatag gcatgattca
279851 gtcatcagcc cattggtgat ttgcttaatc tgcctctttc tcttccctgg
279901 atatgggggt ggaaagagta gggatgaaag tgcgaactca ttaaccatgc
279951 ctttgtcaga agtgccttgg tctttctgac aaccagcccc cattctgaag
280001 ctgtctaggg atagctcacc tctcaacagt catctcatta gcatacaaaa
280051 gacactctta tcactactgg agattccaag ggtctcagaa gttcttatgt
280101 caggaactgg ggattaagac aaatattata acagaaggtg ctcctctcat
280151 acctgttact tgaaattaga agggttttag gaattaggtc aggagccagg
280201 gcagaaacca aatatgtatt tcttatgatg ttacatgtac taagacttta
280251 aaaagaaaaa ctgagaagtt attttaacag gatcaatcac cattccataa
280301 atcttagtct gtcacatttg ctgaagtttt aaggaagtac aatatttact
280351 aggtttgtat taatgctgtt agatgttgtc aataaatgtc aataatttttt
280401 gtcttttata atttggagcc ttaaggcttt taaatctctg aaaatatagt
280451 ctagcatcac cagtctattt taagtaaacc atttggtatt caaagtatcc
280501 tcaatttcag tgctacagta tagctttaga agagtagttt cttgaagaaa
280551 acagtcttcc tttcacagta tccttcagta acactcggaa ttgtagggga
280601 ggaaaaattt tatctcagtg gctgggggat gagggctgta acaaaagata
280651 gaagacaggt taacaggaga agagacataa acaaatgtgt taatttttt
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280801 ctcctgcccc agcctcccga gtagctggga ctacgggcgc atgccgccac
280851 acccggtgat ttttttttt tgtattttag tagagagagg gtttcaccat
280901 gttgcccaga ctggtcacga actcctgagc tcaggcaaac tgcctgcctc
280951 ggcctcccaa agtgctggga ttacaggcgt gagccaccgc gcctggtcaa
281001 cttttaattt tatatgcaca agtgttgcgg gaattaggag gaccagagag
281051 accttcgggt gaatacagga ggatctttat tgagtgcact cagacccagc
281101 agacttaaca tccaaaaact tggcccagaa caaagacagc acttgacttt
281151 tatacacaag ggggtgggct agcctgaaac aagcttacag tggcatgaag

FIG. 5 CONT'D

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281201 cgtagtggca tgaaagggta cagaggcaga acaaagacag ttaatcaaat
281251 tgtgacaggt tcataactca gcattacacg tttgctatgc agcccagatg
281301 tctgttatct aggtttttct ctagtgccta gcacagctta ttccatgacc
281351 ttcactgtgg tgcccaggtg gccataattc aggcctgctc agatggctca
281401 tgaccttcac tccaccactg cttagataaa acagaatact tgaagttact
281451 agttacagag aacaggaatc tatacactca taccataaga gaaaggaaaa
281501 tttgtttttc tcctctctat gttgagggag tgctgggaga gtcccagagc
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281601 gggtctgggc tgtgcctatt gctgcctctg ggataagtca tcctaataca
281651 ggaaagctta tttctctttt taattttatt tttctttctt taattccctg
281701 cctcacagga gcatcacaga aagaagtgaa tgcccaaagc agtggtgaga
281751 tttgagagca cattatacca ccctaatagg tgaaagggag gagcagaggg
281801 gcacttctgg aagaacacat gacttcaaag ataaatgggt cctatgagaa
281851 taagtgaaag atttgtaaca gtgtctgtct gagtatagta ctgacttcct
281901 ctgctctccc tgattagatg aaatcattcc tggttgatga aacttctggg
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282001 agataaggga actccagaga caacttcttc ctgtatttgt tcattctcag
282051 atgtcttcaa ttcaaaataa tctttatgtt actatatctc atctggacaa
282101 tccttaaggg attatattta gttttgcaag agagaggctt ttaacctcac
282151 ttgttaccaa gaaaaatggt aacaactaat tctaaacatt tcttttcttt
282201 ctgaagaacc ttttttttccg taaaaagtaa gttggttttt gtttggggtc
282251 ttttaaggaa ataattttat caatagaaat gccgaatatt ataatttcat
282301 atttttatgt agttggtcca tctgaaatgt aacaaatgca tcaagataag
282351 agtatattta tttgctagca gtgaagtgtt tttaagtaaa cagttgggga
282401 gagttatgta actgacactg ttggcaaatg taaggattga aaacctttgg
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282651 ggctgcagtg ggaggatcgc tcgagcccag gaaatcaagt ctgcagtgag
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282751 gaccctgtct aaaaaaaaaa aaaagtttca cgctagcatt tattttaaaa
282801 agaaggttgg gaatgagaga aacaaaagaa ctttgtgttg aggtcaaaac
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283551 tcaggtgcaa agtgtaaggg tagccatctg aggaccagtg ctacaccaaa
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283651 ggcaaaacag aggtgttgaa caggattaca gcatttttgt acaaagggta
283701 acatacagat atttgattgg ctactgttga ttacactcta agtgggttgt
283751 ccaacattct gttgtaaaca ggtaacagtc acaagggtct ctttctccat
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283851 gtgtctcagg cctataatcc cagaaccttg gaaggctgag gtggcaggat
283901 cacttgagtc caggagttca agaccagcca ggcttgaggt agagattcta
283951 cctctacaaa agaattttaa aaatcagtca ggtgtggagt tgcacacctg
284001 tagttctagc tactctggag gctgaagtgg aagggtagct tgagcctagg
284051 agttcaaggt cacagtgagc ttatgatcac atcaacgtac tccagcctgg
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FIG. 5 CONT'D

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284101 gtgacagagc aagaccttgt gtctttaaaa aaaaaaaaaa aatgtggagt
284151 ctagttaatg tgtaacatct caacacagaa gtcagaaagc aatggtcatg
284201 caccaaagaa aaaacaatca tgttacatga gtcctctttc agggcttaac
284251 ttttcccttt ggcataataa atttggaagg tcctaaattt ttattttctt
284301 tttacatagc tctcttcaac tatcagactt ttatttattc atttatttta
284351 gagagagggt cttcctctgt cgctcaggct ggagtgcagt ggtgcaagta
284401 tagctcacta cagcctacgg ttcctgggct taagcagtgt ttccacctca
284451 gttcctaaat agctagaact acaggcatgc gccaccatgc ctggctaact
284501 ttttttttt ttttttttc tgtcgtagag acagggcctt gttctgttgc
284551 tcaggggggc cttaaactcc tggcctcaag taatcttccc actttatcct
284601 tccaaagtga tgggattaca gggatgaacc ttgtgcttgg ctcagctatc
284651 agattttaaa cctttcttta cttggaaaat taaagacaga tatttgtttt
284701 tcagttagcc aaggagcaac cttgaaatac aatatccttt tattaaactt
284751 cttttgaggg ggaaagtaag ttataatttt tttattagaa aataaatata
284801 ctgggccagg catggtggct catacctgta atcccagccc tttgggaggc
284851 ccaggtgcac ggatcacttg aggtcaggag ttcgagatca gcctggccaa
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284951 tgcatgcctg taatcccaac tactggagag gctgcggcag gagaatcgtt
285001 tgaacctagg aggtagaggt tgcagtgagc caagatcata ccactgcact
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285101 gtgaacaact agatcaaaag agatacccag atacttcatc ccctccctaa
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285451 ccatatgggc agactctagt caatgaacat attacttggg tacttatagc
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285751 cccattaaag ctttaaaagt tgtatatttt agtattttat gtaagataga
285801 atttcatgag tctctgaata ggttattgaa tattcctagt taatcaagtc
285851 tttttataaa gtttagctta agatgtcttt gtgtatttta ttaatacact
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285951 gcttagatta tctggagaat ttaaaagtgt caaaatgttt ctttcagtat
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286101 actttccata aagattcttt ggcataaagg agatgtgcgg aagagtgaat
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286251 agagaacata gtttcaaaaa acaaagaagt atctttagaa agaaacttct
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286401 atagacactg tttcatataa tttggattta caaatattag agatgtcatt
286451 gcagtttgag tgggtctcaa aaggcccata aaattacttt aaaatgctca
286501 cagagaaagc taagttcaca ctttagctcc ttaattggcc atttcagtgg
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286601 taaaattttg taagttttta ggaacaaatt cactcagtct aaatctaaat
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286751 cctgtgaagt atcatttttt gctttaagtt cattatacca gcttatcaga
286801 atctttttga attttggaat atttttttgtc ccttttagct tatcatcttg
286851 tacaaataaa taagctttct aatcttcatt atggtcactg aaaacaatat
286901 tgaacaggac atgaccaaag ataaaaacct tgtggctggc tcactactag
286951 acattctttt tattacgctt cagaaagaac gctttaagca actgtgaatt
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FIG. 5 CONT'D

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287001 tacttctact gttgtcccgc ctacacttct cacttacaaa gtggtcatga
287051 aaaatcaagg ttcactgcca tagcattctg tggcattgcc agacattatt
287101 cagacttatt gaaaacgttg tcaaaaaaga aaattcagtt aatttggatt
287151 tttctcacct acttgttaac tcagcaccta gtgttggttg gccttttaaa
287201 ttcaaaatat ttagaagcca cacccttgat gccttcttct agagattttt
287251 aagagaccag tgttaagcta acctttctat attttctgta gcctgtcctc
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287351 agaaaaaatc agggcagtat tattttattt ttaatttttc tatatttgaa
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287451 taaataaact tgagttctag taccctctct ttaactgtca cagacttcag
287501 tttcttttta ttttttttcct cttgtttcca acttgagagc catacttaaa
287551 gatggaaaag acaaaggcag aattgttttt gagaaactct tccttctctt
287601 tgttatcagt taaccttatt tttctcctaa cagattattt tcttgttcta
287651 agcatagctt tagttgtttt ttgttgttgt tattttatta gcacttttgg
287701 aaacctcggt tcttactagg ctttgtgata cttttcttac agtttcgtac
287751 caatgttgcg tattcataat tagctgtctt cttttgtatg tatactttta
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287851 catctcttta ggactgttta tgattatata atcagaattt catttcctta
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288351 catggcaaaa ccccatctct acaaaaagta acaaaaatta gccgggcttg
288401 gtggcacatg cctgtggtcc cagctacttg ggaggctgag gtgtatcacc
288451 taagtccaga agatcaaggc tgcagcaagc catgatcgcg cctccgcact
288501 ctagcttggg tgacagagtg agaccctatt tcaaaaaaag attatacaaa
288551 ctatcaacgg caaaccccag gatgaaatct tgggtctaat aggacacagg
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289651 gtctagtcat gttgcccagg ctgatcttga tctcctgggc tcaatgaatc
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289751 acccaaccat tttttttaat atcttaattt aaattattga aagagacagt
289801 ataaaaagcc cagtatgtat acaagaccca acatctttga gtacactgaa
289851 attaatatac ctgcctttca gaagaggatg actaaagaag ggactgagca
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FIG. 5 CONT'D

289901 aaataccaga tttacctact gcagtcttta gatgaataca gtatacattc
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291251 aaaaaaaaaa attcataggc aaaatgtcaa atgacattta cagaataata
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291351 aaggacaaca gaacagttta ctatctctat aaatctgtaa gtgtataagt
291401 aacttgagag tgagtaacct atatcaaaac aaagaacaag gccatgagaa
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FIG. 5 CONT'D

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294101 tttttttaaa atgaggaatt gaactataaa tttgagatac taatgaataa
294151 tttattttaa cagaacaaca gaaaataagg aaattctctc tcttgaagat
294201 aaagttgtag actttagaga aaaagactca tcttcgaatt tatcttacca
294251 aagtcatgac tgctctggtg cttgtctgat gaaaatgcca ctgaacttga
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294401 cccttgtgga aggagtctac gaaacgtgga ggaagttttt cgttacctgc
294451 ttgagacaga gtgtaacttt ttatttacag ataacttttc tttcaatacc
294501 tatgttcagt tggctcggaa ttacccaaag caaaaagaag ttgtttctga
294551 tgtggatatt agcaatggag tggaatcagt gcccatttct ttctgtaatg
294601 aaattgacag tagaaagctc ccacagttta agtacagaaa gactgtgtgg
294651 cctcgagcat ataatctaac caacttttcc agcatgttta ctgattcctg
294701 tgactgctct gagggctgca tagacatgtg agtagaaaaa catggcgttt
294751 caaaaaaatc ttctgaatgt aaggacgctt gttaagaagt cttgctatgt
294801 attaatttgt ctatctaaaa cctgttcaag agttacagta agactgggcg
294851 tggtggccca cgtgtgtaat cccagcactt ttgggagacc gagtgggagg
294901 ccagcttgag caaaggagtt tgagaacagc ctgggcaaca tggcaaaacc
294951 ccatcttaac aaaaaattta aaaattagct gggtatggtg gtgtgcatct
295001 atagtcccag ctactctgga ggctggggtg ggagatctgc ttgagcccag
295051 gaggtcaagg atgcagtgag ctgtgatcac acactgtacc agaggcctgg
295101 acaacaaagc aagaccctgt ctccaaaaaa taaaaataaa aataaaagag
295151 tctacaatgg gaaaatgaac tctgtcacta gcagtaggaa aaaaaacctc
295201 taattatttg ccaaatatgg taatttgaaa catttcttcc aagaatgcat
295251 atttccttta atctagtact aatacattaa aagataatca atggcattac
295301 aacaaatgat atttaacagt gccagacact gtgacaagta cttcacattc
295351 attctcttaa tcttcacaaa aacccatgag gtataggtaa tatctcagtg
295401 ttatacatga ggaagttgag cctcagagaa gtcaatttgg agaggtcata
295451 gaacaaattg tagagacagg atttgaaccc atgttcttaa ccattgggtt
295501 atatgttgca ttttacttttt aaaaatcatt tgctggctaa tgtgatgctt
295551 ataactagta ttttcttaat catagaatag tattaacatc ccatgaaaaa
295601 atgaaaacat gttctaatat attaagactt tgaaaaacat tttaagggtg
295651 tgtagtacac atacattcgt aggtatacag atgtagagtg gtgttgcatt

FIG. 5 CONT'D

295701 atatgtactt ttaatttaat gcaaatttag ctacccatac ttggcaaaaa
295751 aagaataaga gaatgataaa taatttaaat agtataataa tagttttcac
295801 catcctctaa gttaattgga gtgtaaaatg agagctatat ctactgttac
295851 ctcagtttgg ctcagttcct tgaggcctct catagaggaa acctctcact
295901 gtgctgtttt attctgttta aaaatatgta ttttattttg taaagattac
295951 ctctaaatgt aacccaacta cctcatctgg ggacttggct cttcaaagga
296001 atagaaacag gtacctgcac aagactagga actaggccag tatctcacag
296051 ggcctggaat tgtattaatg aaaaccttgt taacagctgt aaaaccaatg
296101 gggtcagagc caaagcgttg gagaaagcac ccaatgtaga gcagcacaca
296151 ggactaaacc ccacagaagg tatgatttca aacaaacatt tacagcacac
296201 aaagatgttt aggaccatga aggcagcatg agtcccgaca agtagagaga
296251 attaacacct gaggaatcag aggtaaatgt tgaatctaat tgaaagggat
296301 tttaaaacag gtataattaa actgtcccaa gaggctgggc acagtggctc
296351 atacctgtaa tcctagcact ttgggaagct gaggtaggaa catcatttga
296401 gcccaggagt tcgagaccag cctgagcaac ctagcgaaac cccatctcta
296451 caaaaataca aaagttagcg tggcgtggtg ggacgccctt gtagtcccag
296501 ctagtcggga gtctgaggtg ggaggatcac ctgagtgcag ggaggtcgag
296551 gctgcagtga gccaagattg cgccactgca ctccagcctg ggcaacagag
296601 tgagacccct tctcaaaaaa gaaaaactat gaattgtata tgaagtgagc
296651 aatacctaat ccagtagaaa agttaaaagg aattaactag atttgtatat
296701 agcatggatg ggtctcaaaa acattatatt gaacaacaaa aaaagcaagt
296751 tatagaataa tacctatagt aaatttttta taatgaaaaa tacacaatat
296801 attgtttgta gatacatgtg tatataaaag cataaaggat gccacactaa
296851 atctcttgag agtttagtta tatctatgtt ttacttttta acttttttta
296901 agaagaccat atatatgtgg tgtatatgtg gtgtgtatat tttgaattat
296951 atatacaggg aagagaacta gacaaaatgc tgacaactaa ttctggatgg
297001 tggaaatatg ggtgtttatt attatctgta tttttctgta ctttttaaac
297051 tttgcacaca aaatcacatg ggaaagaaca attatagatt ttcatatctg
297101 taaacagaat ccaaattaat gaatttgttg attgttgtcg ttgttctttt
297151 ctcttgcaaa cagcagccac cattctgatg tgtattaatt aatacagaaa
297201 atacagaaga gaatcataga ggaaaagacc ttaaagtcac ttgttcagca
297251 aaggagacta agatccagag attttaacca gctcaccagc agtcatttac
297301 ctagttacac agctagagtc cccaagttcc ttactttgta tcaaattatg
297351 gttccctatc aagttagtta gtcatctgaa tagaggggaa agtacatgaa
297401 gttttatggt tgcaagcttc ctgcctcgca acagtatgaa aaaaggattc
297451 aataatagta ggcagatacc cggcatcaat ctccccagtc tgtttctgtc
297501 actggagtga gagagaactt aagacatctg caaaactatg tccttacaaa
297551 tttgacatat ttaagtttat ccattgtaaa agagcagaac tagcagaatt
297601 ctcacaaaca agcttctgtg ctgaacaggg aaattaaagg aattgatttt
297651 ggaaagctaa actcatatag ttaagtattt catgagcaaa tagagttgca
297701 gtgcagttta taattattta taaacttttg ggaggtattg tctttcaaag
297751 agatctattt agggaaaaag ctgatagtgt tcatgagcca aactattcta
297801 aatgctatta catcttttat tacatcattt acacatttat caagacagtc
297851 tcttgacttg acttgctgct ttttcattct ttctccatcc attgcctgcc
297901 ttttagaaca aaatgtgcat gtcttcaact gacagcaagg aatgccaaaa
297951 cttccccctt gtcaagtgac aaaataacca ctggatataa atataaaaga
298001 ctacagagac agattcctac tgggtaaggt accttgagga tttgttgcag
298051 ggtgtgtata tctttgaagg tgggtacttt ttattgtggt ccaaaatctt
298101 atagatgtta aatctggttt aatttggttc taataccaaa aatctaaatt
298151 attaaggaat aaaaatcctg tgtattgttc gtggaaatgg tagtcagaga
298201 ccacacatac atcatgcaga gtgtacttga acactcatct gctttgagtc
298251 tggctcttac ccctctagta tcagcctact ttgggcagcc atttctccgt
298301 ttaaaaataa ctgtctagaa ctcatttgag aattgggaat tttcaacctt
298351 tcaaggtact gactcactta atcttcacaa agcagcccta tgagggaggt
298401 attgtcatat aatccccatt ttaaaaatgt gaagataaag cacagaaaag
298451 ttaaataact catccaagat aatacagcta gtaaatgtgg aagctgtgat
298501 gggaacccag gcactctacc tctaagagct ttcacattta gcctgcttcc
298551 ctcagtagtt atcagtgtca gtgaagtgtc aataaactgc tttttgagat

FIG. 5 CONT'D

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298601 gtctgatttt ctcttttgca tattttgttg acagcattta tgaatgcagc
298651 cttttgtgca aatgtaatcg acaattgtgt caaaaccgag ttgtccaaca
298701 tggtcctcaa gtgaggttac aggtgttcaa aactgagcag aagggatggg
298751 gtgtacgctg tctagatgac attgacagag ggacatttgt ttgcatttat
298801 tcaggtaaag caaaagttta ttttcaaatt attctagagt agaatccact
298851 tttctaaata tccattttcc tagccagggc tgttgagagc ttacagcaag
298901 gtaaagagta acagtatcta agaggaacat cagagaaagg caggtaaact
298951 gggaacttga gcactaaaga gatgagatgc ttaggaggta ctttcttcaa
299001 gaaaagaaag gttcagagat gacacttggg tttttgtgtg agggcctgtt
299051 acgtacaagg cacatttgtt ttgtctgcat ggctacaggt actttggggt
299101 aagggaataa aacttgttaa aagtaaaaaa aaaaactaaa tgactggctt
299151 gccaaggtaa agatgaccag tcaaaaactt tcttattcaa tgttttgagc
299201 tattattaga atttaacaag ttaattatgt aatatctgca tgttataatt
299251 cagtcagtga ctttaggcaa ctcactctat tttggggact gcagagagtt
299301 gtccatgctg cagagcaaaa cttcccgagc agtgtgttac agtcatgcaa
299351 ttactgattc tttagggcca cagcccccag ggccaaacac atcagtcttc
299401 agtagtctta cacatttacc tccagcatgt caggcaaaat cccttatttt
299451 ctgtgcacat ccttctgtga gaaagtttgg gaaacacggc tttagagcca
299501 gtctaaagga attgtccttg acttatttta gcagttaggc atcagggaaa
299551 agaacaacca ggttctgaaa attactcatc tgaaaaatca ggtttaatct
299601 gtttacatga ccatgtgctt agaaaagaaa tatcaggttc acatcaggga
299651 gggcaagaag aagcttgcag agttcagagt agtcacacgt atggatccct
299701 gccactcccc atttacagat ccacattcta cacatcctgc ctagacgttc
299751 atctctcata cttctcaaaa taactcttgg atgaaagcta cctgtaaaat
299801 gccaggtggt gtccaggaag tatcattggt tttatcgttg ttgctggaaa
299851 atgtaactaa gatatgtctc cgatctaaca atgggtaaga atatcctgct
299901 attaatttgg acttggcaac tataatattg aatcccttga aagaaaatgc
299951 atgaacttta gaccaagatt ttagtgttat gcagaactta atatgacaac
300001 actaagaaca tatcaccaca tatttaaata ggtacttttg ttaaaaattt
300051 taagtttcag atgataacgc ctttttaact agacataaaa gctacaattt
300101 tatggctaga gtcatctctc taattttcta gagtactttc tcatccatat
300151 ctttttgtat cattctagct aaatctcttc tcttttgtat tataccaaaa
300201 cagacaaatg gtttttttt agataccctg ttttttcata tactggaaga
300251 taagaaatat cacattggtc tttgtcttgc aacagttttg taggatgagt
300301 taatgtgttt atcttcattg tagaatgtgt gggttcttta gtcatggagt
300351 agaaatagag atgtctgttt atcattagca attatcttct gtgttgttca
300401 aactctttaa cattttcctt ttaggaagat tactaagcag agctaacact
300451 gaaaaatctt atggtattga tgaaaacggg agagatgaga atactatgaa
300501 aaatatattt tcaaaaaaga ggaaattaga agttgcatgt tcagattgtg
300551 aagttgaagt tctcccatta ggattggaaa cacatcctag aactgctaaa
300601 actgagaaat gtccaccaaa gttcagtaat aatcccaagg agcttactgt
300651 gtaagtaaca gctgaggaac ccagagtaaa tctaaattat tatcaatcaa
300701 ttggttcttt ttcattcctt cccctctttc ttttctcctc atttgtattt
300751 atcattttgc ttcaaagttg ttaagtctaa cactttgaga aatccaggac
300801 atgtaaaaat ctagccaata taccatcctc agtgttccag ttttggaatt
300851 ttaccttata tgactttagt caggtttttt atggatgtca taagttttgc
300901 tgtttttttaa aattttctat cattttatct gcaaagtttt cataggttct
300951 cttccttttc caaatgtact tcaaaaatta tttatgatta tatttccttt
301001 ctctagggaa aggaataaac atagatgttc ttacttaggt taatttataa
301051 taattaagga tatttatgta ataatggata ttatctgtac ttgagtaaag
301101 agaatgaaga gaatttttag tgatacagaa taacttttt ttccttttta
301151 gggaaacgaa atatgataat atttcaagaa ttcaatatca ttcagttatt
301201 agagatcctg aatccaagac agccattttt caacacaatg ggaaaaaaat
301251 ggtaaaaaat gcaaaatgta gttgggaccc ttcttttctt ttttaaattt
301301 ttttttttt ttttttttt ttttttttt ttttgacgca gagtctcact
301351 ctgtcaccca ggctggagtg tggtggcaca gtcacagctc actgcagcca
301401 caatctcctg ggctcgagta tcctcctccc tcagcctccc gaatggctgg
301451 gactacaggt gcacaccacc atgcccagct cttatttagt agagatgggg
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FIG. 5 CONT'D

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301501 tctcactata ttgcccaggc tggtctccaa ctcctgagct ctagcagctg
301551 ttgtgcctca gcctcccaaa gttctgggat tataggcatg agccaccgca
301601 cccagctgct ggggcccttc tgagatgtaa actattgcct tcctatcctt
301651 tacttagctc aaaatgtttg tgttacttta tagtgtgtag aatttctttt
301701 attgttttgg aatggtggac ggtggaaatg ctaggaccat gttctgttta
301751 cttagtatca tccacggcag ttgacatgtt tccagcttgg ctgtatgagg
301801 agaatgctgg tcatgatctg acagtgtgct ccactgagac cgagaggtat
301851 cccattctga gagtttgtgg gagaagctaa agtcttcagg agttaatagt
301901 gatatataag aaaagggaca aagtaattta ggtgaaggag aacaaggttt
301951 ttgttttttg ttttgttttg ttttgagatg gagtttcact cttgttgccc
302001 aggctggagt gcaatggcac gatctcagct tattgcaacc tctgcctcct
302051 gggttcaagc gattcccctg cttcagcctc atgagtagct gggattacag
302101 gtgcctgcca ccatgcccag ctacttttt gtatttttag tagagacggg
302151 gtttcatgat gttggccagc tggtctcaaa ctcctgacct caggtgatcc
302201 acccactttg gcctcccgaa gtgctgggat tagaggcgtg agccactgcg
302251 cctggctgaa ggttttaaga tgtatgagaa agaagagatg caattttatg
302301 aaagaatcat ccagaaaaca gtattttatg tggtagcctc tgagggtacc
302351 ctttgcattg tgaactaaag attagtcaga gactgaaacg tagaagcaga
302401 gaaagagaaa agagaacaaa gagagacata atggtagctt actttagggc
302451 ttgttgatga agagtaaaaa ctctgcttta ggtgttatgc aaatatttgc
302501 cctctgcctg gtaatggtac agtagctacc tccttaaggt cagagaatta
302551 tgaaaagatt ggccatggtg tcacacagac ccaggtgtaa cctccagctc
302601 tgctgcgtgc tagctgggtg gtatctccat acatacattt cttttatctg
302651 taaaaaggta atagtatatg tttcagaatt atgaggatta aatgagataa
302701 gcatcagcaa cttgcttagc atccaactaa gtgctcaata catgttgacc
302751 attcacatgc tgagaacttt catagtaata atatggtcaa tgtgtattga
302801 atacttagtt ggttgccaag cattgtgctg agtatatacg cctcttttaa
302851 agttatcatt actacttaaa gtgactgcag tgtctacaat gtgtaagcat
302901 tatcacattc gttaaccttt ctttgaagta gaaactagcc aatgagtgtt
302951 tttcatcttt acacaactta cagttgaagg caaatttata atctagtaat
303001 aacactttct aagtactgag atgattagaa ttgggggata cagacaggga
303051 tgcattaaga ttttaattcc caaagaattt cttgacagtc tttatagctg
303101 tggcttaata aagcacctag aagtagaaca gagtcaaagg ggatgacact
303151 tgttgactcc attagtctaa agactcctta tgatatcagc tttgaggctt
303201 ttcaaaacga atctagtaca tatagcctat gatgattgac acttgatgaa
303251 agaggcctaa ctgctaaata cttttgcctg acctggaaag taaagacatc
303301 ttccttgttt ttttaaggaa tttgtttcct cggagtctgt cactccagaa
303351 gataatgatg gatttaaacc accccgagag catctgaact ctaaaaccaa
303401 gggagcacaa agtaggcttt gtttcttctg tgaatgccta cctcttctgc
303451 ctgtttctct gtctcttgct caatacctgt agctcatttt cttagattcc
303501 ataataaaca tgctgcattt gtcagaaagg ttacaacttg tctacataag
303551 agatcagcaa aatatcgtgt gtgggccaaa tctggccctc tacctgttca
303601 gtatggcatg tgagctaaga atgatattta tgtttttaaa tagttgaaaa
303651 aaatcagaag gtgataatat tttgacactt gaaaattata tgaaattaca
303701 attttagtgt ccagaaataa agttttggcc aggtgcagta gctcacgccc
303751 gtaatcttag cactttggga agccaaggca ggagggctgc ttgaggctat
303801 gagtctgggc aatgtagcaa gatcttgtct caacaacaac aaaatagcca
303851 ggtgtggtgg tgcacacctg aggtcttagc tactcagggg gctgaggtgg
303901 gaggattgtt gaggtcagga gtttgaggtt acagtgaact atgattgtgc
303951 cacggtactg cagcctgggc gatagaacaa gaccctgtct caaaaaaaaa
304001 aataaaatgt aagttttatt ggaatacagc caatttacat tatatattgt
304051 ctgcttcaac attacagcaa gagttgaata atcacaacag agaccaccac
304101 atggccagca aagcctgaaa tatttgctat tttgccttct gcaggagaac
304151 tttgctgacc tctggtctaa ttgccagtag tgacttgatg catgacaaga
304201 ggggtgggct ggaaaactct tgagtctttg tggtgcacag gtgttgtccg
304251 tggctttgga accattgtgc aaagcagcca ctttcaaact ctttgtagac
304301 gcctttaaaa ataaacacac atcactttcc tgcaattgcc tagccaatac
304351 tgccgcagag catactcagc ttgactctgg caaaaggcta aaatattgcc
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FIG. 5 CONT'D

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304401 accctgagtc cttgtgtttc agagttacta gtccttgcca tagttaatat
304451 tacaactgga caaacattgt ttttggtact tttgcatttc actgtgtcct
304501 tcacaaggag acattgctga gagatatccg tttgtgaaga attggtgagc
304551 cactgctgtc tcttcccccc tgcaaccgca gctctccacc taatattaaa
304601 ggatggagat tggaggagac atggcagttc cttgatagaa aaggtctatc
304651 aaaaaagggg attttgtgta ttatatttat tttatcatgc atgtgagcca
304701 cagtgcatac cgttgctttt ggttcttttg ccctttttcat tgactgctac
304751 aatatatata gcgggtactc caaaagtcaa aagctacata ctttttgtat
304801 aaaaaaatcc aaagttgtat tatggcttac acgtaaccca tgattaaaat
304851 ataagtacat ataggaacag cagccagcaa caacagtgat gattaaatca
304901 agagcctcaa ttttagacaa gtataatttc tttgcgccat tgaattaggt
304951 ggtccaaata gctttgtggc tcttttaaag taagtaattt atacttactc
305001 catctgacat gcattcatat cttttctttt ttttttaaag agagacagcg
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305101 gtaccttcca attcctgggc tcaaacagtc ctcccacctc agtctcctga
305151 gcaaacagga ctacaggcac acacccccctt gttggctaat ttctttttt
305201 taaaattttt tgtagagatg gggtctcact ttgttgccca ggctggtctt
305251 gaattcctgg cctcaagcat cctcctgcct tggcctccca aagtgctggg
305301 attacaggca tgagccacca tgcccagcca tattcatact cttgaatact
305351 ctcaaaaaat tattttcctt attggataag aaaaacgatt aagcagtgca
305401 tctgctttta aaggattatt gtttacaaag gtgtaattat tgaatggtca
305451 tctagtaaaa caccaaacac taatatgtgc aaaaccccta gcaatacagt
305501 tgtcactgct gggacttgtg gaaggtgtct ctgtcagggt taggcctttt
305551 attggcagca taaaggccta gagtgcctcc aaaacaccca ctctgttaca
305601 tttgtttaga atatacttaa gtgcagattc cagaattaaa gagaagaaag
305651 tcagtttatt atgagtagag attaaatata ataatgaaga agcaagatgt
305701 agattcataa aaaggcattg ttacgtagta gaaagaaggc agactttggg
305751 attcaaacat ttctaggttt gttaccccag ttctcgttat tgtgggtcag
305801 atgaattcct taatccctca gagaaagttt cctttataca attaaaataa
305851 tactacctgc ctaacacatt gtaaggatcg ataattaaag cacctagcat
305901 ctaattagtg ttgttaattt cagcactatt gctcagcaag tatatttcct
305951 gatgtttcct tccaaaatgt ctattagagg actcaagttc aaaccatgtt
306001 gatgagtttg aagataatct gctgattgaa tcagatgtga tagatataac
306051 taaatataga gaagaaactc caccaaggag cagatgtaac caggcgacca
306101 cattggataa tcagaatatt aaaaaggcaa ttgaggttca aattcagaaa
306151 ccccaagagg gacgatctac agcatgtcaa agacagcagg tattttgtga
306201 tgaagagttg ctaagtgaaa ccaagaatac ttcatctgat tctctaacaa
306251 agttcaataa agggaatgtg tttttattgg atgccacaaa agaaggaaat
306301 gtcggccgct tccttaatgt gagtataagg gctgagattc ctatttctga
306351 acaactgttt ttttctatgc tacttaacaa aattatgagg aaaataaaca
306401 gactctaaag tcagaccatc tggttagaat tccagtcctc cacttgtata
306451 cagttggatg ttttacttga cctctgatac ctcattttct acctctgtaa
306501 tacagggata aatgataact gtctcaggat gttatgagaa tctaatgaat
306551 taacattaag tgcttagaac agtgcctagc acatagtaaa catttgcttt
306601 taaaaaactg taagaaatgg tgtataagaa aagtatttaa atatatcaga
306651 tttaaataag ctcacttacc tgagttgaaa aaaatgtatg gctaggaagt
306701 tatcagtgaa gttaaatggt ggcagatatg tccaaagaat actgcaggga
306751 tttaatggtg tattaatatg gaaagattgc cacaatatac tggtttttg
306801 gtttttattt tttgtttttt ttgagacaga gtctcacttt gtcaccagtg
306851 gcacaatctc agctcactgc aacctccgct tctggggttc aagcaattct
306901 catgcctcgg cctcctgagt agctgagatt acaggcgtta atgaatcaca
306951 tgatgaatgt gtggagatgg cggctagtgg gcaacagagc aatactggaa
307001 tagtgctaat atgaggaaat ggtatcatct atttagaagc ctcggaacga
307051 cgatacataa tggctatctt cagcaaagaa atttgttgct tacaatatct
307101 cctctccaaa aggcttgttt gttacagtga tgtaaaaatt aggttctgta
307151 catcttcata ttaaacttac tttgtgaaaa ctttttgttt aaaaaaaaaa
307201 aaaaaagcca taccttgaga agtactgtgc tcctgttccc atgccccgac
307251 tccaccttct ctctgtaggt catcatattt attcttttttt ttttttttt
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FIG. 5 CONT'D

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307301 tttgagaccg agtcttgctc tgtcaccagg ctggagtgca gtggtgtgat
307351 ctcggcccac tgcgatctcc gcctcctagg ttcaagcgat tctcctcatc
307401 agcctcctga gtagctgaga ttacaggtgt gcaccaccat gcctggctaa
307451 tttttgcatt tttagtagag acacaatttc accatgttgg tcaggctggt
307501 cttgaactcc tgacctcaag tgatctgcct gcctcgcctc ccaaagtgct
307551 gggattacag gtgtgagcca ccgcacctgg ccttatttct cccgcccccc
307601 ccccctttt tttttcacat aaaacatagc atattatatt cactgttcta
307651 tactttgttt ttcaaattaa cagtatattg ggccaggcgt gatgtgactc
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307751 ggtcaggagt ttgagaccag cctggccaac acggcaaaac cccgtcacta
307801 ctaaaaatac aaaaaaaatt agccgtgtgt catggcacat gcctataatc
307851 ccagctactt gggaggctga ggcatgagaa tcacttgaac ccaggaggcg
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308151 acaatgctca atgaataatt acacatggaa acatatacag atgaatctgt
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308251 ataataatga taaatattga catattttat agggatttgt cccatttttg
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308351 ggttcccact attaacagga gctgtgataa tttatacatt gacaaaaaaa
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308551 agaaacacac aacaggaatt ttccattggt ggcattcttc accaacaggt
308601 ttgaaattga tttcgcttac ttaattctga aattgtgact ttaaaaataa
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308701 gaggccaagg tggggagact gcttgagctc aggagtttaa gaccagccag
308751 agccacatgg cgaaaccctg tctttactaa aaaaaataga aaaagttcac
308801 caggtttggt ggccagctac tcaggaagct ggggtaggag gatcacttga
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308901 gaaaaatatt ttttaaagat atatactata gccccaaata tctggtactg
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309051 gaagatatca ggtatcaccc agttccactc gggataaatg atgcagagtg
309101 ctacataatc tttaattcag agctattccc cagctacttc cacactgcag
309151 gcctcaacac atgactgggt cccactgttg gcaaaatata cttcttcctc
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309251 ctcaaatggt tattcttaat aaaaggtcat tcctaattgg tggatgttgg
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309451 gattatggct atgaagctgg gactgtgcct gagaaggaaa tcttctgcca
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309601 aaggtctagg tccatcaagg aaattcccct ccgttttcct ttgtcatggg
309651 gtttatgttt tatttcagat tttatttgtg tgacttagaa attccaggaa
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309851 taacagaact cagctgtttc taattgcttt tgtgactgtt acctttttagt
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310051 ttgttggaga agcaatatct ggatcgataa aacactgtcc catcaaccat
310101 ttgagtgggg agagggagaa gctcttctgt aagtaagatt ctggcaagct
310151 ctttgaaatg agtcttcttt cccacagatt ttctctactc tttctataca
```

FIG. 5 CONT'D

310201 aacagatagg agaagaggga atagaaacct ggaggaactt gaatattttt
310251 gttctagata gagatacagt tactgaaaag gaaacctaga aagtagtcac
310301 acgttgctta tttaggccag aagtaattgt actgggcaaa aatttcactt
310351 aaaaaacaca agaagtccag gtatggtggc tcagacctgt aatcccagca
310401 ctttgagagg ccgaggcagg tggattactt gagcctaggg gttcaagacc
310451 agcttgggca acatgtcaaa accctgtctc tacaaaaaat acaaaaatta
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310601 caccatagta cttccagcct gggcaataga gcaagactct ctctcaaaaa
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310701 aaacagcccc ttggtatctc ctgggcatga tttgcaaatc ttttttttt
310751 acagaaaaaa ggcaaagagt aagcactttg ccataggtta cttggccgtg
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310851 accagacagc taggaaaagg agcaaaacat agcccagcaa cctacagatg
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311151 ggactggttc atagccatca tcttccatca gtaccccaga gattcacttt
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312951 acggggtttc accatgttga ccaggctggt ctcgaactcc tgacctcgtg
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313051 cgcgcccacc cggccagtat gatagttttt aggaggaacc ctcaggagag

FIG. 5 CONT'D

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315951 agcttgactt ctgtaggtga tggggaaata tgagcagatg tccatttcag

FIG. 5 CONT'D

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317451 taaaaggaga agaaaggagg aaatctccaa accagcacca taaattagtt
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317601 cagaatgtgt tccttgacca cgcttcctgg ctaccccaga ttctgtgccc
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318851 accaccacgc ctggctaatt ttgtattttt agtagagacg gggtttctcc

FIG. 5 CONT'D

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320851 tctcagctcc gatctctggg ccttttccca tatggctgct tccctctaca
320901 gtgttcctcc tagcccatac cccaacccac cccacctttc cctcctctcc
320951 aggttgtacc agttccaggc ccctgccctt gacaatactc cttcccacga
321001 ggagcacttc ctcggctacc tccttagcgt gtattggaat tcccactcac
321051 ttggcagttg cactttgtga cacttaattc tgccatttta ttttcctaac
321101 tgctatttag tctccctgtt tatttcgtaa gcttcttgca gacaccagtt
321151 ctatctcacc acatttcttt acgtcctctg ctctactatt cactagagga
321201 gcccctcacc acagatagct gttgagcacg tacaatgtga ctggtcctat
321251 tgagacatgc tttaagcaca gaatacacac tggacttcaa agactctgta
321301 caaaagaatg aataactttt atattgacta aatgttgaaa ggatgtaagt
321351 tctttgacat atttggttgc ataaagcaca ttattagctt cacctgtttc
321401 ttttttgggt tttttgtttg tttgtttgtg tcgtttttga gacagagcct
321451 cattctgttg cccaggctgg agtgcagtgg cacaatttca gctcactgca
321501 gcctctgcct cctgggtgca agcaattctc gtgcctcagc ctcccaagta
321551 gctggaatta caggtgtgtg ccaccatact gggctaattt ttttgtattt
321601 ttagtagtga catgttggcc aagctggtct tgaactcctg acctcaggtg
321651 atccacccac ctcagcctcc cgaagttctg ggattatagg cgtgagccac
321701 taggcccagc ctccttttttg attttttttaa tgaggctcct agaaagtttt
321751 cagtgatatc tgtggctcac atttgtgtct tgttatatgt ttcttgttgg
```

FIG. 5 CONT'D

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321801 acagcatcgg tctagagtgc acaacatagt gactcaaaca caagaaatgc
321851 tctcaggctg ggtgcagtgg ctcacacttg taatctcagc actttgggag
321901 gccaagcagg ctgatcttga gcctaggagt ttgagaccag cctgggcaac
321951 ataatgggac ccctgtctct aaaaaaaaaa ataacaaaaa ttagccagac
322001 atggtggcct atatctgtgg tcccagctac tgaggtggga gactgaggtg
322051 ggaggatcac ttgagccctg gaggcagagg ttgcagtgag ccatcattgc
322101 gccactgcac tccaacctga gtgacagagc gagactctgt ctaaaaaaaa
322151 agatactccc cagccccccg cccggccagc cgccccgtcc gggaggtgag
322201 gggcgcctct gcctggccgc ccctactggg aagtgaggag cccctctgcc
322251 cggccagccg ccccgtccgg gagggaggtg gggggtcagc cccccgcccg
322301 gccagccgcc ccgtccggga ggtgagaggc gcctctgccc ggccgcccct
322351 actaggaagt gaggagcccc tctgcccggc caccaccccg tctgggaggt
322401 gtacccaaca gctcattgag aacgggccag gatgacaatc gcggctttgt
322451 ggaatagaaa gggggggaaag gtggggaaaa gattgagaaa tcggatggtt
322501 gccgtgtctg tgtagaaaga agtagacatg ggagactttt cattttgttc
322551 tgtactaaga aaaattcttc tgccttggga tcctgttgat ctgtgacctt
322601 acccccaacc ctgtgctctc tgaaacatgt gctgtgtcca ctcagggtta
322651 aatggattaa gggcggtgca agatgtgctt tgttaaacag atgcttgaag
322701 gcagcatgct cgttaagagt catcaccact ccccaatctc aagtacccag
322751 ggacacaaac actgtgagaa acacccaaga atgataaata aaaaataaat
322801 aaaaaaataa taaaaaaata aataaataaa aatgaaaaaa aaaaaaaaga
322851 tactcccaaa tttttggttg ttagacatga atgaaaaaaa cagctagctc
322901 attccgtctg agcagttttc actctatctt acccttttt cttgcttggt
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323051 agctccaaat gcagccttct gacttggtga aatgaaagac ctaacttaaa
323101 gagacagaga agagatctgg ataacagaag agacttaggg atcacttaag
323151 cagttaacct catctaaatt gaaaactttt cccattaaat ggtaaaataa
323201 atctttcttt caaaactaaa atttgaaaat tataaataaa agctgttttc
323251 tactacagaa aatcaaagga agtaagagga tgaacattgc aatgggcaaa
323301 aaaatcttaa acgaattctt gtggccaaat agcaaataac cagttcaaaa
323351 actttgcctc ttactgacac atgggtggag atctcaacag ctggctttct
323401 tctccctctc tctgcctctt gccttttctt cctacctctt cttcccttag
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323551 gtacattgct catttatgtc tttaattctc atagaattta ttttgaata
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323651 ctatttctta atatgccatt gttttcttct tcatttgtag tgacaataat
323701 gattattatt gagagcttgc tatgggcaaa gcagtgtttt gagaggtttg
323751 cctgtattta aattcctggt tgtgtttctt gaataaaggt cttcctcatt
323801 ttggccaggc acagtagctc gtgcctgtaa tcccagcact ttgaaaatgc
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323901 ggtagcaaga ccccggtctc taaaaaaaaa aaaaaaaaaa ttagctggct
323951 ttggtggcat gcacctatag tcccagtgac ttgagaggac cacttgaggt
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324101 aggcatttag aagtgaactc attaattctt ttcttctatt agcatagtaa
324151 aaaataaaaa ataaatagct ttttcacttg ggtccccaat attttgtctc
324201 tctgggaatt aagactctct cataaaaaca agtgccctgc cttccacttg
324251 aagactggaa gaggagttag tgagaccaag aaattccact tttccatttc
324301 tcaccaggga tattacttat aggtgtcttt caggttgcag aaaagatgga
324351 aaaaaggaca tgtgcactct gccccaaaga tgtcgaatat aatgtcctat
324401 actttgcaca atcagagaat atagctgctc atgagaattg tttggtaagt
324451 tacttgaaaa catacttcaa agtacatgag tacttttagt gtaggacaca
324501 taagaataga taaacaacac tttggacaca aagaataaca agttggccat
324551 ggtttgagct tttaggtgaa gattggggag catttctttt ttttttttt
324601 ttttttttg agacggagtt tcactctgtc acccaggctg gagtgtggtg
324651 gcgcaatctt gaatcactgc aagctccgct tcccgggttc acgccattct
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FIG. 5 CONT'D

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324701 cctgcctcag cctcccgagt agctgggact acaggtgccc gccaccatgc
324751 caggctaatt ttttttgtat ttttagtaga gatggggttt caccgtgtta
324801 gccaggatga tctcgatctc ctgacctcgt gatctgccca cctcggcctc
324851 ccaaagtgct gggattacag gtgtgagcca ccacgcccgg gcctggggag
324901 catatttttc tgactttgaa ctgtttcaga tttaaaatat aacagacact
324951 gatagacctt ctacccaggt ataatttcta tcaaagtcta cagaattctg
325001 agatttatcc atgttggtaa acatagctct aagtccttca ttttaaatat
325051 gatgttcgat ttcatgacta tattaccatt aactgttctg tgaatgggca
325101 tttagttttt ccagtattgt tttctatgac taacaagtcg tcatgaacat
325151 tcttgtctag gtctccttct catgtgagaa tttccctagt ctaggctata
325201 cagctaagag cagaattgtt aggcacagga atggggtgtt ttgtacttga
325251 ctaaatacac caaattgttc ttcaaagaga ttgtaccatt taatacacct
325301 aacttaccaa acatcatagc ttagtctagc tcaccttaaa catgttcagg
325351 acacttacgt tagcccacag ttgggcacat catctaatgc aatgcctgtt
325401 ttataacaaa gtcttgaata tctcataaaa tttattgaat actgtataga
325451 aagtgaaaaa cagaatggtt tatgggtact atacaggagg atgtgtgtag
325501 gttatatgaa aatgctatgc cttttagata agggaactga gcattcacgg
325551 attttggtag ccttgggggt tcctggaacc aatcccctgc agacactgag
325601 ggacgactgc actatggctt tattactagc cttggctttt attttggcac
325651 tttgaatttg tggatcagct tttcatgttt gaccaaaata ccttttggaa
325701 ttttgattgg aattgcattg catttataga tgaatttggg aaaaaaatag
325751 acacattcat atattataat atattataaa taattaatat aaataattag
325801 agagacaaaa cctgttaatg gatgggaaaa agatgcattc atatattata
325851 tgtattaata tattattaat gcagtatgta ttaatatatt attaatgtgt
325901 tatgtattaa tatattattg tgttatgtat taatatatta ttaatgtgtt
325951 atgtattaat atattaatta tatattatat aaatataaat aatatgcatt
326001 ttatataata tattactata ttcatatatt actatattca tatattcata
326051 tataatatat tactatatta tatattataa tatatgaatg tgtctttttt
326101 ttcccatcca ttaacagagt ctgtctctcc aattatttag gtcttttata
326151 aatttcaaaa ctgttaaata atttttatct gtagtcatat agaacttggg
326201 gttgggcata ttcctgggca agtttttttgt tttgttttgt tttgttactt
326251 ttttctaaaa gctttttaaa tgaactatta tcagtatata taaacactat
326301 ttatttttat ttattgatct catccagcaa ccttaccaaa gtcttattag
326351 ttctaaaact tctctagatt tacctggata tattgtatgt ggacaatcct
326401 catctttaaa taagaacaat tttatttact tacctttaat tcgggggact
326451 cttaatctct ttttcttgtg tttttccaga acattcaatt atagcggtga
326501 ttacaagcaa ttaaatttgg aagccctgtc ttgcttctga tattaatggg
326551 atgctccaaa aatcttatca ttaaatttgt gtatgtttta cattcttaat
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326651 aaattatagc gtattgaata ttactaaatg cttgttctgc atctattgaa
326701 atgatccggg ttctttttct ctctctggcc acaaacagtg ctaaatgctt
326751 tattttattt cacttttta tatacataat ttgatgttta ttttaaatta
326801 caaatttatg gaaaagttgc atatacagta caaagaactt tttttggtca
326851 gaaccatttt aaattaaatg atatgcaatc tatcctgaat actttagtat
326901 gatttttttt ttttttgag acagagtctt gctctgtcgc cccaggctgg
326951 agtgcaatgg tgtgatcttg gctcactgca acctccactt cccaggttca
327001 agcgattctc ctgcctcagc ctcccaagta gctgggatta caggcacatg
327051 ccaccacgcc cagctaattt tttgtatttg tggtagagat ggggtttcac
327101 gtgttagcca agatggtctt gatctcttga cctcgtgatc cacccacctc
327151 agcctcccaa agttctggga ttacaggcat gagtcactgt gcccagcctt
327201 tagtatgtat tttctacaaa taaggtgata tgctttggct gtgtccccac
327251 ccaaatctca ccttgaattg taataatccc cacgtgtcaa gggtggagcc
327301 aggtggagat aagtgaatca tgggagcagg tttttcccag gccattcaca
327351 tgatagtgat agtgaataaa tctcatgaaa tctgatggtt ttataaagag
327401 gagttcccca aaaatctctc ttgcctgctg ccatgtaaaa catgactttg
327451 ctccccctta ccttcttccg tgattgtgag gcctctccag ccatgtggaa
327501 ttgtgagtcc attaaacctc tttttcttta taaattaccc agtcttgcgt
327551 atgtctttat tagcagtgtg agaactgact aatacacaag gacattctct
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FIG. 5 CONT'D

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327601 ctcacactat aacaatataa acgtcaaaat caggaaattt tgttatacta
327651 ctaccgtcta ttcctcaaac cactgaggtt tcacctgttg tactaataac
327701 gtgtgtgtgt gtgtgtgtgc ttttttttg agacaaggtc tcactctgtt
327751 gcccagggct agagtgcagt ggcaccatca tgcctcactg caactttgac
327801 ctcctgggct caagtgattc tcccatctca gcctccagag tagctgggac
327851 tataggcatg tgccactgtg cccagctaat gttttgtact ttttgtagag
327901 atggggtttt gccatgttgc ccaggttggt atccaacccc tgggctcaag
327951 caatcctccc acctcagcct cccaaatgct ggaattacag gtgtgagcca
328001 ccatacctgg cctaataaca ttttttataa caaaagattt tagctcatgg
328051 gttgcatttg gttatcatgt cttaagtttt ttcattttat tctgttagta
328101 atgtgtgttt tacttatata ttttttctgc tgtgaaacca ttcttagatt
328151 aacaccattt aatggtgatg ttttatttt acttatttat ttgagacaag
328201 gtctccccag gctggaatgg agtggcataa tcatagctca ctgcagcctt
328251 gaactcctgg gcttaagcaa ttctcccacc tcagcttgga ctacaagcac
328301 gtaccaccat acccagctaa ttttttattt atctttttgt agaaatgggg
328351 gtcccactat gttgctcagg ctcatctcga actcctggcc tcaagtgatt
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328451 tcccagccca atcgtgatgt ttttattcta atatactgtt gatgttgatt
328501 tgctactatt ttttagttaa ctttattggc ataatttaca taaaatcaaa
328551 tgtacccatt ttaagtgtcc aattcagaaa gttttgagac atgttgagac
328601 ccatgcaacc actaccacca tcaagatata aacatttcca ttaccccaaa
328651 gggtttcctc aatgttctgt gcaatcaatt ccttcctacc ccaagtccct
328701 gtagatttgt cttatctttt ctcagatttc atatgaaagg aatcctatag
328751 ttgtcctcct ttgtgtcact tcctttgctc agcatactgt tttagatgca
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328951 gcatctgtat atgagtcttt gtgtctttat ttaggccttt cataatttca
329001 aaattgttca atggcttttt ttttttttt tgagacggag tttcgctttt
329051 tttgcccagg ctggagtgtg atggcgcgat ctcggctcac tgcaccctcc
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329151 attacaggca cctgccacca tgcccagcta atttttttgta tttttagtag
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329301 ccaccgcacc cggctattca gtaattttta tctgtagagg tatagaactt
329351 ggggttaggc atattctggg cttgtttttt gttttgtttt gttacttttt
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329701 ctaccaataa tatgtaagaa tttcatttgc tccacatcct catcaacact
329751 gggtcttgtt attttaggca gtctagtaga tatatattgc atctcactat
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330351 cattgggaac ctagaatgtc ctctttctag cccttgtttt tctttctttg
330401 cagactgact tgctctaacc acgtggcttc agctattgct caaagcccat
330451 tccacacttt taggataggg gatcagactg acccagcttg gcatcagggt
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FIG. 5 CONT'D

330501 tccacccagg tcaatgagtt attagaggtc aggattacaa agtataaaac
330551 atgcccggaa accagggtca ttcccagaga aatgggatgg cttatggtct
330601 gctcatccac ccccaaagtt gccactgttt tacccccagt ccatttccca
330651 ctcctggttt gattttccac ttttggtatg attttctgac atgtagcttt
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332051 ggtgaaaggc aacagtccag atggaattct gcaaattatg ctatcttagg
332101 cagtgtacac aatactgtag taggtcctga agcaagccat aaaaatggac
332151 tgtgtgtggc ccgggcatgg tgctgcatgc ctctaatccc agcactttgg
332201 gaagccaagg cagttgagga ctgcttgagc ccaggaattt gagaccaacc
332251 tgggcaatat agtgggaccc tgtctttacc aaaaaagaaa aaaaaattag
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332601 aaagtagcag acagacctca actggaatat ttttttgctc ttcactaatt
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333151 cacacacaca cacacacaca cacacacaca cacacacaca cattctccat
333201 ctaaatctgc tcataaaaac agcactatca ttatccattt gcccaagcca
333251 gaagtctaag gactctcttt tcctcgtcaa cctcccagcc caacaccaag
333301 cccatgggca cgaactccta ggtgcatctt gcattcatcc acccacttct
333351 ctcagcgtca gtaatccacc atagcggagt cacccatctt gttctctaaa

FIG. 5 CONT'D

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333401 gcgagtactg acactcgccc gactgtctct cctgccatcc ctaccccagc
333451 ccgtagttct ccacccagca gcagcccagc agcctgagtg atctttcaat
333501 aatgttaatc agtttatgtt ccccgtgcag aaagataaaa cccaactcct
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FIG. 5 CONT'D

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336451 tcttcaggta tggggactat atattctaaa acaagagggc aagcctacca
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336951 ggttgttata gtctcagagt ttcattttta ttatttacct taccaaagag
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339051 tggagtcatg gggtatactt tcattcatga gtggaacagc agtgtcttag
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FIG. 5 CONT'D

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339351 ttaaatatct tcatccttat tagtctgttt tactttgaat atcttctgag
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339901 gagcctttga agaacattct tcatttgtgt tctcagctaa ggctgctcct
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342051 atttcacttt ttggttttgc cctatagaaa ataatcccat tcaaataaac
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FIG. 5 CONT'D

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FIG. 5 CONT'D

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346901 ctgacccctg aaaacttaac attcacagtt ctcatttttt accatggtac
346951 tctgattttc aataatgctg cgtctcaaaa tgggttttaa ctgagtctcc
347001 aagcatggtg tctgacatgt aataaataag tactggaaaa atatttgcag
347051 gagatgaaaa agaacagtcc attccagttg taatggcagc cctagcctaa
347101 gttcttatat cttagggaca aaatctaaac cagtggattt caaatccggc
347151 cgcacatcag aatcatgtgg ggcactttaa aaactacaga agtgaagacc
347201 ccatccaaca ccctctgaac agatttccgc tagtctagat gattattgat
347251 tactgtagct tcagcttcct atcctgatat taagtcttag caaagttttt
347301 ggttgttgtt ttgttttgtt taagacggag tctcactttg ttgccaggct
347351 ggagtgcagt ggtgtgatct cggctcactg caacctctgc ctcctaggtt
347401 caagcgattc tcctgcctca gcctcccaag tagctgggac tacaggcgcg
347451 caccaccatg cccagctaat ttttgtattt ttagtagaga tggggtttca
347501 ccatgttggc caggatggtc tcgatctctt gacctcgtga tctgcctgcc
347551 tcggcctccc aaagtgctgg gattacaggc gtgagccacc acgcccagcc
347601 atcttagcaa agtttatctg actaatcatt ctgatgtcat gatctttatt
347651 taaaaaaaaa aacctttgtc ccccacttta ctttcacgtt taacctgtga
347701 ctcacacagc atgtaactgt gcaccatgga gcaccatgtg tttggtggcc
347751 atgaggctgg ctactgggca aacccgagta tgggttcata aggcggagcc
347801 gagtatgaac ttcagctatg tcactactga aaaacttgaa tccgattatt
347851 taatctgaga atgctgctgc ctaccttatg ggacaaaata tggacaagta
```

FIG. 5 CONT'D

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347901 agtaaaatgt gaagcagaga gcacaatgtc tggcactatg ggaaataaat
347951 gttaaaacac acccatgcac gcacacactc cccttgctaa catttctgtc
348001 ttatttctc cattctaacc aaacttaatt atgataagct ctggaaggct
348051 cattagcccc catctcttgt gcctcttttt gttttggaga tgagctaaaa
348101 ggacacttta tattttcccc tatccaacac aagcgttatc ttcagaacaa
348151 ctaactgctt gtcatgttaa ccctattaac tgtattagtc cgttctcaca
348201 ctggtatgaa gaaataccag agactgggta atttataaag gaaacaggtt
348251 taatggactc agttccgcat ggctggggag gtctcaagaa acttacaatt
348301 gtggcggaaa gggaagaggc ccgtcttacg tagtggcaag taagtgagag
348351 cacgcaaagc ccaggggggaa ctgccattta taaaaccatc agatctcata
348401 agaactccct caatagcatg agaacagcat ggggaaaccg cccccataat
348451 ccaatcacct cccaacaggt ctccctcaac aactgaggat tacaattcaa
348501 gataagttgg gtggggacac agagccaaac cacatcatcc tatttggttt
348551 tctctcactg actgttatga aaagctcttt ataagtatct cattgtgttg
348601 ttaattccta aacctatctc cctctctcct aataattcat atgttctttg
348651 aggataggga atatgccttt cccttcaagt acccccaaag gtacagacac
348701 atttttctac tgtgccagtt caactgtact acccttcagc aggaataaaa
348751 tccaaagatt tctatgatgt ttgtttgtgt atagttgaga atcaagcagt
348801 tgacatgttc atgctggtac ctatttttag cctgataccc attaagaatc
348851 acaccactga ttttttttat tatggtaaaa tatatatata acctaaaatt
348901 tgccatccca atcatttta aatgtatggt tcaatggcat taaacattca
348951 tttttgtgca accatcacca ccatgcacct aaagcagcag tccccaacct
349001 ttttggcacc agggactggt ttcgtggaag acaatttttc cacggaccat
349051 ggggatgggg cggttggtca ggggtgggga ggatggtttt gggatgaaat
349101 tggtccacct cagatcacca gtcattagat tctcatatgg agcacacaac
349151 ctagatccct tgcatactca gttcactgta gggtttgcac tcctatgaga
349201 atctaatgtt ctaatgttgc cactgatctg acaggaggca gaactcaggc
349251 agtaatgctc actcatccgc cactcacctc ccgctgtgcg acctcttcct
349301 aacacgccag ggatgaatat gggtctgtgg cccgagggtt ggggacccct
349351 gacctaaagg actcttcatc ttggaaaact gaaactctgt atccattaaa
349401 caagttcccc attctcctct cccctcagac cctggcaatg accattctac
349451 tatgtctcaa tgaatttgac taagtatatc acacaaatgg catcacatag
349501 tatttttctg tgagtggctt atttcaccca gcataatatc ctcaagttca
349551 cctctgtgca ccatgtgtca gaatttcttt ccttttaag gctgcagact
349601 actgattttg aaggaaaaaa acaactctat gtgcctgttt taatgttact
349651 ttgtttatta acatgtcgtt ctaaatatta cataaataca gcttacatac
349701 tagagtatca aacattgttc cagtaagaag ttcaagagta catttagggc
349751 tatcttaaga aatatgaata ctttggcttc cattattaca ttagatgaaa
349801 aaatcaattc aaataagagt tgtcatatcc tgctatgatt aacaaaaaaa
349851 caagtagaaa aataagagag tgtatttaaa aaaaataatc aaatgctttt
349901 tgaaagacct gttctcttca ctgccacaca tattcataca aatgacttag
349951 taatctaata tgagaagtgg tccttcactt atattaggaa cttggtaaat
350001 atttgttgaa tgaatgaact atctatggat atgaatttac tactttaatt
350051 tgtgcttttt ttgaaaaaaa gttttcaagt aagagcaata gtaaacatac
350101 tgaagttcac attttgctca gatcataagc ctatagaaca gtgattgtta
350151 caaacaccac ccatcatagc acaaatcaat gtgcatttct gaagctagta
350201 agaaaagttc tatcatgttg tagaacgaat tctaaccgac taattcactg
350251 ggcttcaatc acttgtgata tggtcaagaa aaggggctg gggctcctag
350301 gcttgtatct atttcagcta tcagtgaatt cctatcttta gggcctcact
350351 ccccttccca ccccaataga cacaaattta aaaacattgc taaaaatagt
350401 agttgtagca tgtcttcacc cacttgtaat ttggctctga aaatgtattc
350451 aggctccagg ttcagaagag agactttcca agcaggagac aaaattcact
350501 aagggaactc actcaaatgg aaatgagttc atggaccaga gagcaaagca
350551 aaacattgct cttaaaagca agctcaacgg acacacatga tgaaactcac
350601 agttgaacac tcttacatcc caaagtcacc ttccataacc agttcaaata
350651 aactactgtc ttttaatagg atcttttcag gaacaccata attttggtgc
350701 tttttcaagg tgaaattgtg ctgttatacc taagatgttt aaaaacagag
350751 gaaaaccaaa agtgaaagat gataaagttt cacataagcc aatgtgtgat
```

FIG. 5 CONT'D

350801 ggatttggcc taaagtagat aaagcaaatt ccactaagtc ttgtaagagg
350851 gttgacttga agaaccactt cttccagtca tatatagtag atatgatgat
350901 tcagcagtca taatttagga aggcaagagt atactataca tgtcattatt
350951 ttcctcttaa gtttgcattt atagaagaag gtggtggggg acaatttaaa
351001 cttgagttct caagttctac cttaatgaaa taaaacacca ttggataagt
351051 agtggagatt ctaatttata aaatattcac cttcatcaaa tttctttcat
351101 tatcaacttt tcacggatac ttctaaatta ctattcttta tgcacttaaa
351151 tcttaagaga aatcttgact aacctagaat atttatcttt acataattat
351201 catttcaaca ggtttaatat acgttaaact tattactttg atttatcttg
351251 aagttaaaaa agtcatcaac gcaagcacac aaacaaaagt ctgaaacaat
351301 cttaattatt ccttcacagt aaggctacta aactagcaac taaggcagca
351351 cttaacaatc cccaggtcag catctttaat tcacgatggg gcctctccat
351401 tcatctcaca attccccaac tatcactgct cctgctgtca gaagattgtt
351451 gatacgtggc ccaggagagt tgctgccaac ttccccttc caagttcaga
351501 agttcctcta atcaaaaatg aaaagaagac caaaaacgac taactttcac
351551 ccttttacat gttccagccc aaatttacga aaggtcacat ttaaaataca
351601 cttatctgga aacaagggtt gtttaaaatg ggctcaagaa aagccgtaca
351651 cccttgttat gttcctacac aaacaactgt gtcccagatg tggaaaaaaa
351701 caacctgatg gtcttttacc tgcagaatca catcacccgt agagcacaaa
351751 ctggacacat cctcaacagt gccccagagc actcacacag aacccagcag
351801 ccttgcgctt cagttcttaa aggctccaca tttactggct ttagcaatga
351851 attcctttag cagagggcca tccatttgcc aaaatgctgc agtctgtgta
351901 acttctgtca aatgattgat gcaaaactta aagcagaatt cttctaaatc
351951 ctggacacac aacaaaaata aaaacaaaaa tggctttttt aggcaacttt
352001 gattgaatta cttctctctg agcccttac cccaaatctc tcaccctccc
352051 ccagaaaaga tatttgagag gccagatacc taaaactagg caaaaaggtg
352101 accacaggta ggtgtgagaa aaacacatac tatttattca acgcagtaaa
352151 agcaatggtc ctctaactca aagtacgact cttcaaaaca cacacgcgcg
352201 cgcacacaca cacacacgca agatctacaa gggaaagaat ttcctgcacg
352251 attatcacat aatctagtta tgctcaaaga cattgttgta aaaggcagaa
352301 tgccacttta gtctgcagaa tgtgttttgt cacgttcaag acatcagaga
352351 aaagaattaa gatgtgggtt agtttaagaa acagaaaggt aatgaagaga
352401 tatggtcaac ctaaagtggc acattaaaaa gaaaatccca gccgggcacg
352451 gtggctcacg cctgtaatcc cagcactttg ggaggccgag gcgggcggat
352501 cacttgaggt caggagttcg agaccagcct ggccaacata gggaaacccc
352551 gtctctagta aaactacaaa aattagccgg gcgtggtggt ggatgcctgt
352601 aatcccagct actcaggaga ctgagacagg agaatcgttt gagcctggga
352651 ggcagaggtt gcggtgagcc gagatcgcac cactgcactc tagcctgggt
352701 gacagagcag aggctctgaa agaaaatccc aaaaaattca ccttaaattc
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352801 ataacactac aacttccacc acactaatat ctcagaacat caccccaca
352851 gaagtatatt tacacaggtt agttttcagt caaacagaag tcaccaacta
352901 ccaacattca ggggagtaac atccacaagg ggtaaaccag aaccatttca
352951 aaatcaatcc ctgcctatgc taatccaccc tttcatcccc tgccaaactt
353001 taatatagtc tgtcccttag gatgttggaa tatatattta ttaaatcgat
353051 taggcacctg gaatgcatac aaagactcaa tatataaaag gaaatcacac
353101 taaaagctct tatcacaaat agcttgactt tattacaact tggttagctg
353151 gtacattgaa ggtcagcact ccgggttcta tcgaaccaga agctcaacat
353201 ttcaactgca ggttttgacc gcacatttcc agctaccacg aggtgggaat
353251 gttagacaga gtggaagggg cccacacaaa catggagaga ccccttttct
353301 gctctcagca cagacctctg caaacaatga tttccttgtt ctaagggtcc
353351 tcctgtccct ggctaaaaga tgccctagag taaactccag aaacccatcc
353401 agtcacataa ccattaagag ataaaccaca ggccaggcgt ggtggctcac
353451 gcctgtaatc tcagcacttt gggaggctga tgcgggcaga tcacgaggtc
353501 aggagtttga gaccagcttg accaacatgg tgaaaccccg tctctactaa
353551 aaatacaaaa attagccagg tgtggtggca agcacctgta atcccagcta
353601 ctcaggaagc tgaggcagga gaatcgcttg aacccaggag gcggaggttg
353651 cagtgagccg agatcatgcc actgcactcc agcctgggag acaggagtga

FIG. 5 CONT'D

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353701 aactccatct caaaaaaaaa aaaaaagaac ttttatacac aatataggta
353751 taaaaatggt gccactaatc acaattcact ttatacactc atgaaaatgg
353801 ttctatcaaa ctgccttccc ttcccctcca attagtttga actactgagg
353851 tatctgggta tgcaataaat attcaaaagt tccaaacatt aaaagccaaa
353901 ctagagaatt ctgaaaacaa tctaaatctg ggttgtgtaa gtaactaatt
353951 aaaccttggt tgaggcagat ctatgtaaaa ggaagccctg aacgcatgtg
354001 gtgagggacg tttgaatttg caagttcacc agagagtcgc acagtcaagc
354051 tgaaccactt agcaaccagt gcccagggtt ggtttgcctt tgatgagcaa
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354151 tacataatct gttcctttca ttctgcaaag gatcaaatct tcaataacag
354201 gcaagaaaat gcaactcctg tccaagtgag aagtcaacta taacagggct
354251 ggttatagtt gacttcttac ttctaactgg gctttaaata aaacagttcc
354301 aaggaggacc agaaggatca tgtgaccagg agatgaacaa agttcccgac
354351 agaatgaaag tcctcttata gcccatggaa tagggaagtg gagagtataa
354401 aaacagaagg gtctaataca gtcttcttgg tattagaaac taaactctgt
354451 ttatgacgtt atgtggcaga acaattataa agtgttctaa ggcaaatgag
354501 ataaaatacc agatttattg tcattagcaa agaagacaaa aataaaaact
354551 gctcttctga agtaatttat aaatcattcc aaatctttca acattgaaac
354601 tattccaatt caatatatat actctgaaaa taagctgttt ttcctttcca
354651 caaatttttct ttagtaacaa aacaaaacac agagcattga tggtcttaat
354701 atcctcattt taaaaaatgc taatgccgcc tctaagggag ttcttaccct
354751 gtcctaaaac tccaaagcta aactagttga atgttaataa tttgaagacc
354801 acctaaccag ggtgagcagg tgcctcggca tcacagctcc ccacaagaca
354851 cattccagat gacacaagat cacgaaccac acctaactct gtccaacctg
354901 ttgttaaagt aactgcaaga caaaacccca aaactgtcag tctataattc
354951 atgttatagc acatcaagta caaaatattc caaatcaaag aagttttgtt
355001 ttgttctcaa aatgtactta aacattctac catatggaga aaacataatt
355051 tatcccatta cgcaaaaaac atttgtcagc ctactgctga tcaaagactt
355101 ttcatttggc ccaccaaaag aagaaaaaaa cgctggccac caagccttaa
355151 caccaagctg tccaatactc atacccccaga ccaacttcag aattagattc
355201 ctgggctcac gtttatcgct tccctccaaa agcaagatcg taagatataa
355251 gttgcttagc acacaggatt tctggaaagt tctctactct ggttaaacaa
355301 ataatacttc ccagctgttt ctcttaacgt tcaaatacac ataaaaataa
355351 aaaatttcct gaaaagaatc agtttgcatt gtgcaactga tctatcttga
355401 aacaatgttt tatccacatt ttctccctga tgtcaatatt tattcaggtc
355451 tgtaccaaag gagtatctgg gtgctccttt gtgaagtcct tcttaataaa
355501 acttgtggac agtttcataa cacgttcata gcaagggatc cacaatcatc
355551 aacttacttt tgaaactccc tgtaactact gagtccatac atttttgttg
355601 ctttaatgtg tgtacatttg cttcaaagct atcttgtcaa aacggggcat
355651 ggaggaacct caggtacttt cgtagaaaga caagaaacat tggaagcagg
355701 tagtctccat cttcctagca ttttggccca cagcacgaag gcaaagtcat
355751 ctagcatccc caagttgagc tctaaaaata atagtttttg cagtcaattt
355801 ctaacctgac tcatcagtag cctccaatca actaataaac acagtaagag
355851 ggctttcttt ttaagagatg gcagtctcac tatgttgtcc aggctggtct
355901 caaactccta gcctcaagca atcctcccac ttcagcatcc tgagtagcta
355951 gaatacaggc atgagccact gtgcccagct atggatttta attttgtact
356001 ccagaacttc attcatgtac tcactgtatc ttgtagcatt caggaaataa
356051 aatgtaaaag cacattagtc aattacgtaa cttgtattgt aacctaagaa
356101 atacacccta gaaagaggcc tggcgcagtg gctcatgcct ataatcccag
356151 cactttggaa ggctgaggtg ggagggacac ttgagcccag aagttcaaga
356201 ccagcctggg caacataatg aaaccctgtc tctacaacaa ataaaaaata
356251 agaaattagc tgggtgtggt ggcacacatc cgtagtccca gttcctggac
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356351 ctgtgatcac accactgtgc ttcagcctgg gcaacagaac aagaccctgt
356401 atcaccagga aaaaaaaata catacaaatt atgaatatat atatatacac
356451 acacacacac atatatatat atgccctaga aataaagagg tgagtctttc
356501 tttttgtctt ctttctattc tctaattttt ctacgttgaa tctgtaatat
356551 ttgtaggatt ttaagttttt tttaactttt ttttttttt tgagacagag
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FIG. 5 CONT'D

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356601 tcttgctctg ttgcccaggc tggagtgcag tggtacaact tctccctccc
356651 agattcaagc aattctcctg cctcagcctc ccgaatagct gggattacag
356701 gtacgcacca ccacacccag ctaatttttg tatttttagt agagacaggg
356751 tttcaccatg ttggccaggc tggtctcaaa ctcctgatct caagtggccc
356801 accttggcct cccaaagtgc cgggattaca ggcgtgatct ccaagcctgg
356851 ccatttttttt ttttttaagc acaccttcat ggtgaggtat ttcaaatgtt
356901 ttcactcatt tatttaattc aacatgcatt tttgagcgcc agctccatgc
356951 ccacactgtg acagactctg gggaatcaca cttatttgga gtctttctaa
357001 aggaagtttt tatcatgttt atacttaata tgagaaaaat gaaaactagt
357051 aaaggaaatg acctgctggc acaggaagca gcagcagagg ctttttctgt
357101 aaacttccta ggacagatct tagctaaaag tgaggaagaa gtttccagca
357151 acttgagccg agacatctgc ctctgcccag gttgttctca ctggtgttag
357201 tcagcaaggt ctgatcctga gtatggaact cgttaacaag gaggaggagc
357251 gtggagaggc ccagagagga ttctaacatc cgtcaccaaa tggacagaaa
357301 aggcactaac ccaatttaaa attatatcac cgggtggaaa taaaatctaa
357351 agaaacagct tttctaataa agaggttcag ggtgtcacag gaaggacagg
357401 aaaaaaatca taccccattt tctattagaa atgatttact ttgatcatca
357451 ttccatctgt tgtcgggctg cagacaaagt cagctacatt tgaccttatc
357501 aaatatttat aatcagaata tagcctcaaa caaaaataag atacattttg
357551 aaaacatcgt ggtcaacttt gatccctatg tgtgatgaag tgtgtcctct
357601 tatacctcaa aggacacagc tgcagatctt tgcaggtgtt tgataaactc
357651 cttgatacca gatattctgc tttgtcaaat gacaaagtat ctgcaaggat
357701 aggctaattg taacattcta catgcacaac ttagctagat attttgaaac
357751 tccaaggcta ttgctctcta ccttttattc tctctgaatc tgtgaaacca
357801 accatacccg ccttcagctc actgatcatc cttaatgctt cctttaaggt
357851 actatcttca tccagttcaa catttatcag gtgcctaata tgtgccaggc
357901 actatagggt atacagacga atgagacagt tcctgctcac gaggagctta
357951 cagtctgatg ctttggttct tcaaaaaaat gcacacaaac tttcagactc
358001 cccaaagccc attaattcac aggctcaaca gatctgtgaa tctcagatta
358051 agaactcaac ccagtgcaaa aacaaaagga gtccacagca agttcttaac
358101 aggtaaataa ctgtgagctg taattagaca ctaatagaat tgcagagcgt
358151 acacagatac aaatcataca catccccagc ttatgacagg gcagaggtgg
358201 aaagacagca aggtaagtct cgaaataaac acatatgctg acattaagaa
358251 agacttgaaa ctaaaatatg ctgtttgtta gtccaattag ttgtggcacc
358301 ttatgttcca acctgcagca cagctgctag gaccttggtt cgtttcctgt
358351 cttacttaga aatgaaagta gaggaacaac gacttttgaa acaatgaaca
358401 gggaattaag aagcaagggc agatttcagt tttcaatggg ttcactgatt
358451 ccctaaacag aagtggagtg actcatcgtt ttccatgcct cacgcaagaa
358501 gcgggggaga cgagcacaaa gggagttaaa ggtggtctgg tttctgtttg
358551 ttgtttaagt tacctctgca tcatatctga ctgcagcaga gaatagcgaa
358601 aaggcattct ccacagtaat tcctctcttg ataatgtgct gacaaagttt
358651 tttcagtctg ttttcacagt aagatgtcgc caaatccaga agacctaaaa
358701 gtaaaatatg tgaaaggttt aatcaaatgt ataataattt ccaatacaca
358751 gagattttgt tttggtgaac agaggtgtac aggtaaatta gaagtttctt
358801 agtggataag attctgaatt tgagtaaata aattctcttt tttactgtct
358851 gcctcctcca cttccacacc tctcctatat ttactttata caatttcttc
358901 aatagtgcaa agaaagagca aaaaatgcaa tttcaatcct cattttgttt
358951 ctaaaacgct aaatgcatta gcaacttata cttcactact agaaaattaa
359001 aataagccca tagcttaata cctaggtgat gggttgacag gtacagcaaa
359051 ccaccatggc acacgtttac ctatgtaaca agcctacaca tcctgcacgt
359101 gtaccccaga acttaaaaat aaattaaaaa aaaaaaagtc cttcagtaac
359151 attagaacaa aaaagcctat ggtcataaac taggtccaaa actattaacc
359201 ataataacta cacaatacta cttttaaaga tacttacttc aaatcttttt
359251 taagcaccaa attaaagcca atacacctga agcttttttac atttcaggac
359301 taagaatatg aggggatata ttctccacca tgcggctcgt ccatcccaat
359351 gctaccacag tacctatagc atcttctggc ggcaggtcga ctgtgtctgt
359401 gtagaggtac tggagaaagg cacgatacac tgggtaagaa aactgatcga
359451 tttctatcac ttccttcatg tcttcattcc aatacgactg gaacatggat
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FIG. 5 CONT'D

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359501 cgaaaatgct cacacctaaa acagcaaagc aaaagtctta tttgttcagc
359551 agcaattttt aaaaaagaaa aaaaaattac ctaattaagt tgataaaatc
359601 agataaacag aagtatcctt gggccgggcg tggtggctca tgcctgtaat
359651 cccagcactt tgggaggcca agcgggtaga tcacctgaga tcaggagttc
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359751 aattagctgg gcatggtggt gcatgcctat aatcccagct actcaggagg
359801 ctgaggcagg agaatcgctt gaacccggga ggtggaggtt gtggcgagcc
359851 gagattgcgc ttctgcactc tagcctggca acaagagcaa aactccgtct
359901 caaaaaaaaa aaaaaagtaa gtatattaac tactatctgg gcctgaacac
359951 accaggatca cagaccttta gttagcaccc aaaaaacatt ccacatgcaa
360001 gtggtttttg tacatgcctt ttacatacac tcactttcat tttttgtaac
360051 tcctattaaa tactaatagg tatacataga gcctggaagt acctagcact
360101 tccactactg tttccatttg atggtcccca agatttttt gctccttgt
360151 ttttttaaa atgatgtaca gaaatgcatt ttaaacaata aagtgaaaga
360201 aattcagaaa caagagttca aaacttttga ctatgtatca acattaaaat
360251 gattcatttg ttttttgttt tacataataa gcatattctt aaaactgttt
360301 tatatgttaa ctggattaca tcaagctgat tattgtctga ttatccgaca
360351 atttttcttc ttttctgact tatcgtcaaa acagccatca ctccttttt
360401 ttttttgcat tgcctgttcc ccttcctctc ttcccaggcc tgctacaagc
360451 ttatttataa aacactcaca tccactagga tagtcagata tttcaagaaa
360501 acctgagcag ctcctacact gtatttacat gtacaaagcc acctgcacaa
360551 gaaactgatt tctgaatatt ggattttctt atgtataaca cagttgtatc
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360651 gagaaaaagt attctgaggt gcagtggctc aagcctgtaa ttccagcact
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360951 caaaaaaaaa agaaaaagaa tccattcaga atactaaaaa aatagtttca
361001 cttacataaa aaattacctg agaaataaaa aagaaatagt tgtctaagaa
361051 agaatcatgg atttcatggt cagaaaactg tacatgaaag gaatagactg
361101 gttgaccaca ggtgcacaga cagaaacagt tccagttcat cttttcaatt
361151 aatactgtgg ttcagatatt tactccctta ggtaaggaat gacatagggc
361201 ttttctgttc ctttcaaatg tatttctttg ccaataggtt tttacctaaa
361251 tttccaaaaa gacttgtaaa tggccacttt aatggtctta gcttatgtgc
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361351 aggtccctca catttataca aggaactata tcttaaaaac ttttttttc
361401 atttttgaga taagatctca ctctgtctcc caggatgatc acagctcacc
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361651 aggcatgagc caccatgctg agcctagaac attcttcaat tggtaattgc
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362001 tacaaaatta gccaggcatg gtggcgcctg cctgtaatcc cagctactca
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362201 atatggacaa atacttaaat tcctacatta cacttttct aaaacgctcc
362251 atgagtgtac acaaaaaact ctttgacatg aaatggactg atactatctg
362301 caaaaatatt aagtagtgac atttctctct actaccaagg ctatttttta
362351 tcagtactca ttttgtggaa taacaaagaa agaaaagtca agttattgat
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FIG. 5 CONT'D

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362401 gtctctgagc tcatgcaaaa atacctgatt ttcaaaacag ctttatggac
362451 atgaatatat tttccatcaa ttcgaaactt cagatcagca gtttctggac
362501 tatcaaattc tttcttcagt gactctgcaa ctgttaaaaa gtcttcatgc
362551 tctgaaggca acaaacatat attaatatgg caagttcaag gaacagattg
362601 aagattcaaa agacttcaaa aagatcatca tgaccgtgat ggataattcc
362651 acttgttttt ttttcaagag ttcatacctt gtttgacaaa tcaattctac
362701 ggtattaaag taagtatcct gcatctataa actaccaaag aaaaccacca
362751 aaagatggta tttagaaagg ctaaatacca tcttatatgc ctagttatac
362801 attagaaatg tatattttta aagaaaaaaa ttataggtac ttcatgataa
362851 tataataacc ccctctcaaa acgagtggtt ctcttctaag actaagaatt
362901 tgtttccctt gactgaaaca ctaagaatat ctttttctg ctttggggta
362951 ctttcaaggg gtcagcatac ccaactcaag gaggtgcaag aaacaaactt
363001 accacttaaa tggtaatgct aagcggtcat gttctcaagc agagaaactc
363051 tttcctaagt atctggaatc taaacatctc tgttaaccct aaaaatcact
363101 atatgcataa tccttactca ctgtctaaac acagagcaaa ttcacttaga
363151 aacaacacct acatgaaggg aacagtttta taagaacaca ggatcacctt
363201 acctgataag aagaattgct gttgtggtta tatgttaagt agaactgtgt
363251 tactacaagg aaaagtaaag gcacttgtac aaattcccgg aatgctttct
363301 tgtgttttat atgtatgaaa gaagaaaaga agcagaaaag ggctaatggg
363351 gaaatttttt taaattccag agatcctgac caggcatcga atcaagctgc
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363451 gtgtcttaat caaagacctc ggcttccaag cctgggatga accattttcc
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363751 tggatcactg gtgggtaaaa gaatacaaat gactaagatg ggccaagagt
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363851 catcagtgct tcaacttctg catccagtct taggctgaaa tgactctttc
363901 tcctctttgc tcctggcaac aagtatagta catcctttca gagaagaaat
363951 cctcctcaaa ggggtgaatt caccatgtga ctttccgtct aacactcaga
364001 tgagatcaca aagtgagagg gaaaaaacac ttttgacttt cagtgggtgg
364051 aagggaaaga agttatctag gacagcagtc cccaaccttt ttggtaccag
364101 ggaccagttt tgtggaagac aatttttcca cggaccgagg cggggaggag
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364301 ccccatctgg gggtgatggg agacagtgac agatcatcta ggcattagat
364351 tctcataagg agctcgcaac ctgtatccct cgcatgtgca gttcacaata
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364551 caggccacgg accagtacag gcatatggcc tggggtgtgg ggacccctga
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365001 aattgggaca actccacctg tctgacacac ctaagcatga cgttttagaa
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365101 agaactacat taattttcaa gcacagagca tcatgaccca cttattccct
365151 ctgcttataa ataaaacaac ttaaaagaaa tatgctagca aaaaggcaaa
365201 cataaacaag aaataaaata aaaagattaa agtcaccttg taaatggcta
365251 ctcagtttta agacatccta gctttttcag ccaataatgg actcttaaag
```

FIG. 5 CONT'D

365301 aagacaatat tcagaaaagg tacagattat gtaaccaaat atcaccccaa
365351 attccactac cctttataat acctctgttt tgatgccctt ctgaaataaa
365401 agaatttgaa atcagttgaa agacaaagat agaaagaaag aagatggggt
365451 taatgtgtca ccttaaaaac cacaagttgt ttgctttttt tattgagaca
365501 gggtctcgct gtgtcaccca ggctggagtg cagtggtgcg accacagttc
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365651 gagatggggt ttcgccatgt tgcccaggct ggtctaaaac tcctgagctc
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365751 gccaccacac ccagccggtt cttcactttt ttgaaagttc atttttggac
365801 caggcgcagt ggctcacgcc tgtaatccca gcactttggg aggctgaggc
365851 gggcggatca cgaggtcagg agttcctgac cagcctgatc aacattgtga
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365951 gcgcctgtaa tcccagctac tcaggaggct aaggcaggag aacttgaacc
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366351 ggcctcaaaa acattaagta aaagaagcca gacacatggg tcacatattg
366401 tatgcttccg cttatatgaa ctctccagag tcggcaaatc catagaaaca
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366551 gaatttgaca taaagggtgg atgtaggcca ggcacagtgg caggtggatc
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366951 gaaaatttaa agttcatggt aatattttat aatatatgaa tacatttgat
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367751 cactgcagcc tcgacctccc aggctcaagc aatccttcca cctcagcttc
367801 ccagaccaca gctgcaccac catacccggc taagttttgt atttttata
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368051 cacggactct gaacgttcca atccaaaagg aaaacaagcc aaacttacta
368101 tatttctcag tagtatgctt cttgggtaag gtctcataat cagaagtcag
368151 cactccagga cataggaggt aagaccttac aattaggctg aacaacatca

FIG. 5 CONT'D

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368201 agcatctatt ccagtaacac atattatatc aaatcaatat ttaaacagat
368251 aatgtccttt caagagcaga tttatttaaa agttgtttta cttggctcaa
368301 agtaaaagtt tatattacac cataaacatc aacatggcca tagaccttac
368351 ttgtcttcca tactaaaagg gcaacagcaa gactgcagta attataccaa
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368451 agaatcatat caacctcatg ttcattctgg ctactactca aaacactttt
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368651 catggtggta cacacctgta atcccagcta ctcaggaggc tgaggcagaa
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368751 attgcactcc agtctgggtg acagagactc tgtctcaaaa aagggaaggg
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369651 ttttttttt tttaacttgt cgagcctgtt ttgccaacac catagtcttg
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369751 aaggcacaga gtattgccag aaaagactga ctgaagagta aacctccaat
369801 atttctccaa gttagagcaa ggaaggtaga tgggaagcca ctaactgaga
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370951 aatattaatt taatttgtat ttttgaaaga taatgctggc cacagtatga
371001 aagatgatgg agcatataag gctagaggca ggaagaacct ttaggaggtc
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```

FIG. 5 CONT'D

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371101 aggagtgata gggggatcat gagagggaaa gcagaggaaa gaggattaaa
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371201 aggcccatct gctgaaagta acagagctag gcataggttt gacaggagtg
371251 ttaaaggttc caaatagcca taggaaaaag tactgaccag gaacaaataa
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372301 tgagcgccac ctcctgtcag atcaatggca gcataagatt ctcacaggag
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372451 ccaaaaccat gcccccaaca ccgccatctg tggaaaaact gtcttccatg
372501 aaaccagtcc ctggtgccaa aaaggttggg gaccactgcc caagcacacc
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372851 aaatgtacag ttgacattgt ttcattggaa gagaaaggta ggattaaatt
372901 ctttaatcta ttacattaaa tatcacgaac aaatagctat aggcattagg
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373251 gccaactacc ctcttaatat gtaaacagtt tgtaactttt cgaggagttg
373301 gttgatttgc tgtagaacct gatcccactt ggccacagtt gttataaccc
373351 caagcaaaca cctacaagag aaagaaaaag gaaaaggaaa gaatagtcag
373401 ggtgaaaatt ctaccccaac acaaataatc ataaaaatta aaattatcct
373451 acttaatgag tacttaagat gtgctaaacg gttctatatg ctttacacac
373501 attaacctat ttaacctgcc tagtaatcct gcaaagtgac cctagagtag
373551 gtagtaccca ctttatacat ctccgtttta tacatggaaa ctgaaacatg
373601 agaggttaag tgacttgctt gaggtaccaa agctggtaag tagcgctaag
373651 agaatttaac cccaagcagt ctagctatgc tcttgaccac catgctacat
373701 tccctctata atttgtgtgt gtgtgtatac acacacaact acacatacac
373751 acatacgaat gtggcatcaa taggaaatgc ggtatatgcc acataagtat
373801 tagtgatgta aaacatttgc tcaactcttt gggcataaat attcattgtt
373851 ttccatggaa accattcttt ttgttttgct ttggtttttt ttttttttt
373901 ttgagataga gtttcactct gtcccccagg ctggagtgca gtggtgcgat
373951 ctcagctcac tgccagcccc gcctcccggg ttcatgtcat tctcctacct
```

FIG. 5 CONT'D

374001 cccaagtagc tgggacgaca ggcgcccgcc accatgcccg gctaattttt
374051 tgtattttta gtagagatgg ggtttcaccg tgttagccag gatggtctcg
374101 atctcctgac cacgtggtcc acccatctcg gcctcccaaa gtgctgggat
374151 tacaggcgtg agccaccatg cccagcctca tggaaaccat tctaaacaag
374201 actataaaca gagagatgaa ttagggaggg aggtgttggc agtagaggaa
374251 ataatttcct ccaacattag gaaatgtcta agcccccgct ccccaccctg
374301 cttcacgtgg ctgcaggagg tggtccacgt atatactgag tgtggcttcc
374351 atgattcttg tctgatgctg gccaaggcaa caacagtaga gccctctggt
374401 atatgtgtta caggttcatt tcacaggtac aaaacaaata acctgcaaca
374451 cctcctcaaa gtatattcac ataaatatct agtttaatta tgcaaatatt
374501 aatattcagt ataattattc aaagtaccat atgcttaaga ttaaaataaa
374551 tcaggaaccc agccggcata aattagcaag tttgagctaa tttcagcaat
374601 cattcttctg gcacttctca aatacatcac attcccttgc agtgctgctg
374651 actcttgttt aaaaactggg gctatagttc cactaaccaa gaaatggact
374701 aggaaacagt ggatctgggg catgaggcct gtgtgctatg cctggctcca
374751 gcacatccca gtcatgaaat cttggtctcc ctgagctttt gggtttgttc
374801 acttataagt tgtcctactt aataaaatct ctgtaacatc actgagggac
374851 ttcaaagaga ggaacagtat gatctaatct gtgttagaaa ccagagagga
374901 cagcaaagca agactggaca gacggatcaa cttaaaagat agggaataga
374951 agggactatg gcagtagtct aggcaggaaa tgacaagact tgaccaaagg
375001 caatggaaat ggagaggaac aaaatggagg aacaaaaagg caaaggaaat
375051 ggagaggaaa tggagatggt acaaaagatt agaagacaga atcaatagga
375101 tgagtgacct ttaagataag cacaacttgg gggcttaaca agtgttacag
375151 tacctactag gaggatagta aagttatttt ttccaaactc attacatata
375201 ctgaaaaata aaatagacct taaggatggg gtcactaaaa aaaaaagtac
375251 agaacactgt cacacatctg agctatagtc ttagcaaaga gcatgggact
375301 cagctgcctt aaaaaatgaa ctctaggttg ggtgcggtag ctcacaccta
375351 taatcccagc attttgggag gctgagacag gaggatcgct tgagcccagg
375401 agttcaagac cagcctgggc aacatagcca gattcttgtc tctacaaaaa
375451 aaaatttttt ttttaaaaga atgaattcta ctgccatcaa aagtgtaatc
375501 ttgattatac aatacacgtt atgctagaga gagagtgcac tcccacaagg
375551 tttttagcta catgcacagg gctacaatat tcacaccaca tcaagtacaa
375601 atatggtcat taaaatcaga ggattttcac aatagccaaa agtggaaaaa
375651 atccaaacat ccatgaacag atgaatagac aaacaaagtg tggcttacag
375701 caggtccttg aaaaacgtca tttcattcaa catcattttg ttataacact
375751 aatgagaaaa aatgtcaatt cccggccagg gccactgtct gtggagtctg
375801 catgtcccat gtctgtgtgg gttttctctg ggtactctga tttcctccca
375851 caccccaaag ctgtgcagac tagtttgtgt ctaagctgta tacatgtctc
375901 aatgattcta gtgagagtga gtgtgggggt atacatgagt gcaccctgta
375951 tcctgtccag ggctgcttcc cacctggtgt cctgcgctgc cagaagaggc
376001 tgtggccaca tgcaaccctg aactggaaca aacgggttgg aaaatgaatg
376051 aatgaataaa tgaatacaaa ttattagaaa ataaaaattc acaaagtagg
376101 cttgtcatgg tggctatgcc tgtattccca gcactttggg aggccgaggc
376151 gggaggatca cctgaggtca ggagttcgag accagcctgg ccaacatggt
376201 gaaaccccgt ctctactaaa aatacaaaaa aattagccag gcatggtggc
376251 aggcgcctgt aatcccagct actcaggagg ctgaggcagg agaatcactt
376301 gtacccagga ggcagaggtt gcagtgggcc gagattgtac cattgcactc
376351 cagcctgggc aagaagggtg aaactctgtc tccaaaaaaa aaaaaaaaaa
376401 aaaaattcac aaagtagaca ataaccatac aaatgcataa caataaacaa
376451 cacagtcaaa caccctcagt gagctgtcac atttgtgatc gtttgctttt
376501 gaactgtgtg gcagtaggag gtgccccttg taatttttgc tttgcaaaca
376551 tttattcctt gacttaaccc accaccacta tgatcacccc aactcagtga
376601 ttcaccataa attgggtaaa taattctctt attgctttta ttaatctttg
376651 ttaaatatat gtattagttt gcatttattt aaatgtttaa gaagtggttt
376701 gggtcttcag aagtttggtg atgtctttgt gaccagaaat ataccatagg
376751 aacttaactc ttgtttttat caattagcca atggtaaaac tggtttcatt
376801 acatgtcttt ttgcttaaag ttgtagtttc caagaatcta tcaatgacat
376851 tatgtgggca cttactatat gtatccaatg gaatattatt cagccctgaa

FIG. 5 CONT'D

376901 aaggaatgaa gagaatccta tcatatggta caaagtggat gaaccttgag
376951 gatattatgc taagtgagat aaaccagtta caaaaggaca aacattgtat
377001 gattccactt acgtgaggta cctagagtaa tcaaactcaa agaaacagag
377051 tagaaagttg ttggctgggc acggtggctc acgcctgtaa tcccagcact
377101 tttggaggcc aaggcgggca gatcacgagg tcaggagatc gagaccatcc
377151 tggctaacac ggtgaaaccc tgtctctact aaaaatacaa aaaattaggc
377201 gggtgtggtg gtgggtgcct gtagtcccag ctacttggga ggctgaggca
377251 ggaaaatggc gtaaacccgg gaggcggagc ttgcagtgag cagagatcgt
377301 gccactgtac tccagcctgg gcgacagagc gagactccat ctcaaaaaaa
377351 aaaaaaaaaa gaaagttgtt gtcaggggct gggggaggac agaatgggag
377401 tgaatgttta ccagggacag cgtttcagtt ttgcaggatg aaacagttct
377451 gtgggtgcat gctggtgaca gttgtatgac aaggtgaaca tacttaacac
377501 cactgaacta tacacttaaa actggtgaag ctggtaaatt ttatgttaag
377551 tgtatttact atgatgaaaa aaaaaaagaa taaagaataa aagcagcata
377601 cttacctctc catcagctgc cagagccatt gaatgatgtg agccacaagc
377651 tacttccacc acttgcttga tcaagagatt ggtacagacc tggacgggag
377701 caatgccttg gttggtcgtc ccattcccaa gctggctata tccattgtgg
377751 ccccaggcat aaaccactcc atctgtgcac acaaagcaca caaaaaatca
377801 gctccaaaaa gaaatagtaa ccctgtactt tcttccccag aacttcgtac
377851 agctccttct ccaaccttca tttctctccc attgcccccc cctctctatt
377901 aagtaaccat ggacagagta aaggagagag agatgggtga cagaacggga
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378151 ataccaagtc acggggaacc cacaggggc gtgtggctac tcgctcacca
378201 agtatagggg aaagagatag actgtttaca aaggaaacaa aagtctcagg
378251 gcttctttga agcagactat tttattttag tggcatgaaa tctggctgaa
378301 ttttttttt ttttacata aagcaaccat ttttttacgc tcatttattc
378351 tgtgtcagga atttggacag gggacaatga agatggcttg tctttgcttc
378401 acagtgtgtg tgatctcagg aagattaaaa ggctggagat gacttgagag
378451 ttgaggacta gcaacacctg gaggcattgt cactcacact gctgtgacta
378501 tctctggaaa gcataatcag cttattctaa cagattcaac tcaggaacag
378551 ccaaatgggg gagacacaca gggtaaggta tgcggggatg aggggtgcac
378601 ggagctccca tgccctccct ggcatgccac cccctcccag cacctcgatg
378651 tggtcaccaa cccggaagct cctctgtctg aatttttttt ataatgactt
378701 tatcttttct gagattctga tgaagacaac ttttcttgtg ttatctcttg
378751 aagtatcatc gtttcaggca tttctttcca cagcaccccc gagtgccaag
378801 ggcaggtctc ccagagttac acattctcct cttatctttc ccatggtaat
378851 aaaacatcct gacctattaa ggacagtctg cctggcaaca acactcaagg
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378951 agtccccagg caaccagggg aaacagactt ctacttgtct actgtagaac
379001 gaagacagcc cacacaaact cagagtcctc ttccaggtga catgtggctc
379051 acaagagcca ttccctccta cagaaattat gacagaaacc ataaatggga
379101 aatttcatcc tgagaaagat gaggcttaag actgaaagaa agagtataaa
379151 acacaaaaag tatgatccat gatattgtgt taaaagctac ggcaggtgaa
379201 agaaatgtcc aaactaatga gtgttttaac ccctgaaaac agaaaaatag
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379401 aatgggaaga ataaacaaac aagaataaat aggaaaaccc tacaaaaaaa
379451 aaagcaagaa ggtagctaat tctaccagtt actaaaacct ataacaagtt
379501 tctatgaggc tgggcttgcc tgtaatccca gcactttggg aggccgaggc
379551 aagtggattg cttgaggtca ggagttcaag accagactgg ccaacacagt
379601 gaaaccccac atctactaaa aaaaaaaaaa aaatacaaaa atcagccagg
379651 catggtagcg cgcacctgta atcccagcta ctcaggaggc tgaggcacaa
379701 gaattgcttg aacccaggag gcggaggttg cagtgggctg agattgtgcc
379751 ttgcactcca gcctgggcaa aaaggactct atctcaaaga aaaaaaaaaa

FIG. 5 CONT'D

379801 aaggttaatt ttaaaataac ctgtaattct aaataatctc aaatagaaga
379851 cgctgaatcc atgaaacaat agcaacaagt tctggaaaga aacatttaaa
379901 gatcaagaaa gaacacttgg aaataaaaca atgggaatgt taaaaatttg
379951 acataagcgt tgtaagataa agttgaagaa atttcccaga acacagatgg
380001 gagagaacat ttttaaaaaa tcatgaagat caggccaggc atggtggctc
380051 acacctgtaa tcccagcact tttggaagct gaggtgggag gattgcttga
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380151 tgagccaaga ttgcaccact gcactctagc ctggacagag agaccctgtc
380201 tcaaaaaaaa aaaaaaaaaa aaatttggaa gatcactcca gaatctctaa
380251 ctttctaaga aaaattccat aaaggagaaa acaaagaaga aaatttttct
380301 ttttttgaga tggggtctca ctctgaccct cactctgtca caaaggctgg
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380601 ccacacacag ccaacaaggg aaactattca tgaaatatta caagaagaaa
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380701 atcatgatta tgtcacaata cttaaaaaaa taaaaataaa aataaaaaaa
380751 agatccttga agcttccaaa gaggaaaaaa cagtcacata caaaatagca
380801 aaagttgcca ggcatagtgg ctcacacctg taatcccaac actttgggag
380851 gccgagccac aaggatcact tgagcccagg agtttgagac cagcctaggc
380901 aacatggtga gacctcatct ctacaaaaaa atttaaaaat gaggtgggaa
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381101 agcactttgg gaggctgaga tgggtggatc acctgaggtc gggagttcaa
381151 gatcagcctg gtcaacatgg agaaaccctg tctctactaa aaacacaaaa
381201 attagccagg catggtagca tatgcctcta attgtacttc ggaggctgag
381251 gcatgagaat tgcttgaacc caggaggctg atgttacagt gagctgagat
381301 cgtgccactg cactccagcc taggcgatag agcgagactg tctcaaaaga
381351 aaaaaaagga aagaaagaac cagtgtgatg ccagaaggca tgattacgca
381401 aggcaaaagt gagataatca cctcattatg ctcaactcca gttatattca
381451 taccacatga tgatgctcag atttggattt cacagctctc ttgagaaaga
381501 tgcagagaac ttgaagtaga ttcagttagg agttacaggc acttagaagg
381551 ctagatacta aaacctgtga cagcattcta ggaagctgtg attcctcagt
381601 ctagacaaag aaaggccggg atgcaaatca tctcccaaat gccaccctag
381651 acaattatcc aacaaaaagc tgaggacctc agagaaagag agcaagagtt
381701 aatgtatcta aagtataaaa ggaagcattt aaatagataa tgaatttca
381751 gagagtgttg ggtgcccaca gtacagatcg attacacaca catacaaaat
381801 gtccactctc ccttagtgat cttgaagagg cagagtaaaa aaggacaaga
381851 acctatcaac ctgcatcccc ggttctttca atatggcaac tacatgaatg
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381951 gaaaggaaag ccaggtagca tctatgttta gaaaaatgta ccggccgggc
382001 acagtggctc atgcctgtaa tcccagcact ttgggaagcc aaggtgggcg
382051 gatcacgagg tcaggagttc cagaccaacc tggccaatat gatgaaaccc
382101 agtctctact aaaagtacaa aaattagccg gggcgtggtg gcacgcgtct
382151 gtggtctcag ctactcggga ggttgaggca gaagaatcgc ttgaacccag
382201 gagatggagg ttgagtgggc cgagatcatg ccactgcact ccagcctgga
382251 gacagagcga gactccttct caaaaaaaaa aaaaaaaaaa aaaaaaatgc
382301 cgggcgcggt ggctcacgcc tgtaatccca gcactttggg aggctgaggt
382351 gggcggatca cgaggtcagg agatcgagac catcctggct aacacggtga
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382501 cccaggaggt ggagcatgca gtgagccgag attgcaccac tgcactccag
382551 cctgggcgac agagagagac tccgtctcaa aaaaaaaaag aaagaaagaa
382601 aagaaaaacg taccaaagga accctgaaag ttgcattgca gaacaaagac
382651 cagtgagcta ttaaggaata ggattgcagc tgtcccgctc ccgctcccat

FIG. 5 CONT'D

382701 tcccactccc gctccctctc cctctctttc cacggtctcc ctctgatgcc
382751 gagccgaagc tggactgtac tgctgccatc tcggctcact gcaacctccc
382801 tgcctgattc tcctgcctca gcctgccgag tgcctgcgat tgcaggggcg
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383001 agtgctcaat gttgcccagg ctggagtgca gtggtgtgat ctcggctagc
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383551 gctgtgtctg tgtagaaaga agtagacata ggagactcca ttttgttctg
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383701 gattaagggc ggtgcaagat gtgctttgtt aaacagatgc ttgaaggcag
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383801 acaaacactg cagtaggccg cagggtcctc tgcctaggaa aaccagagac
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383951 aataaaataa aataaataaa taaataaata aataaataaa taaaaaagtt
384001 gcattgcaac acaaatccac tgaaaaatta ggctggaagg accatcattt
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384101 gtttgcctaa tttgcaagac atcctatagc ttttccagag ttagcccgaa
384151 gtgtttaact ttcacctgct ttatgtactt cctctcagaa attaagaagc
384201 aaacaatcca aaatcagtta tctggtatag ccctatctcc cctaagctta
384251 gaattaaccg gtcaatttct tacaaactga aaagttagat gggttccctc
384301 cttaccttcg gtgctgagaa gaacatgtgg tccactcccg taactgaggc
384351 ttttaatctt ctttccacat aagccttcta gctttttggg tacaagtgta
384401 ctctggttat ctccagttcc tagacagtta ctatagttca gtccaaatac
384451 aaagacctag aaaatagata gtttttttc tgagtctttt gaccgaaagc
384501 tgtattaaaa gctcccttct ctcctctgaa aataagacat ttcaactaca
384551 gagctcagga ggtgaaaaga gactgatatg gttgttaaga aaaattcaac
384601 ctctgtggac attgcttacg tttcagaatg tttgtctata ttatgaaact
384651 cagagtgcta tggagtagac gggtattaaa tcaagaaact gaaaaaagag
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384751 ccccgccttt tctccatctt tgaactggac actttgaaga ccaattgcca
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384851 gtcagtaacg tacagtgctt cactggctga ggtgccgaag acacacgcct
384901 tccgaataga cgcgatctct tgaggggaga gtagagtgaa gatgggccac
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385001 cgacatctct gctggaacag aaaggattcc agaaaaaaat taaatagtca
385051 ctgagctaac tttcaaaaaa aagacctgtt aataaatact aacaaaagct
385101 gattctagaa taaatgaact acctttggtt acatggatca ctcactttcc
385151 cccagccatg tgtgcaatcc ctcctccacc ttcaaacccc ggactttcct
385201 acaagagaat aacgtgcaag aactagctgt ttgtcttgcc cacttcctag
385251 tcagtgctta tctgttccac atgtgcttcc aactcaccct cttcttagac
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385351 cctccaacag cacacacaga gggcgcctgc agctggagca tgcttagcca
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385451 gatgacaagg atcagcttca gccccaggta tcataccaca aattcaatga
385501 ggattaaacg ccgtcaaatc aggctattca ttgtcactgc atagccagac
385551 tactggaata acatttggat gtcttgacaa atgtgtgtgc aggtggaggg

FIG. 5 CONT'D

385601 ggaggtatgg gtgaggacaa gtaaaagatt tgacagggga gtaatacatg
385651 aaaatgggaa aaaaactttg gtttcaaatg gacaaaaggg gataagaaag
385701 aaagtctcct tatcatccct ccctgaccct ctcctcaaag gccaccactg
385751 ttcccagtga tctgtaattc cttctggaaa cagtgctcat ggaagcacta
385801 catgtatgca taggtgtatg tgtatcttta aaaacagaag cacaaatgga
385851 agtttttttt ccctacttaa cagtacatcg gggaaatcat tctatattag
385901 cacacataga cctgctacat ttctttccaa tggtactatg gcattccatt
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386001 attccagtct tttgctagaa caatagtgca attgttgcct gcacattatt
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386101 aatgaaaatt gctaggtcaa agtctaatag ctattttact gttactagct
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386451 tactaaaaat acaaaaatta gctgggcatg gtggtgtgtg cctgcagtcc
386501 cagctactca ggaggctgag gcaggagaat cacttgaacc cgggaggcgg
386551 aggttgcagt gaactgagat tgtgccactg aactccagcc tggtgacaga
386601 gcgagactct gtctcgaaaa taaaaaataa tgatcagaat aattgcaaca
386651 ataacaacta acttactggg cactatgtgc caagcactat ttttagaaaa
386701 tttatattta ttcattcatt taatcctcac tttaccaata aggaaatgga
386751 gaaaaagaga ttttaagaag tggcagagtc gggatctgca cccaggcaac
386801 ctgaagcctg agtctgaact cttcacctct cactcacatt ttaagagccc
386851 actgtcagcc ttttgtgcaa agtgcctatc tttttctact ggatcattgt
386901 tctttttctt gttcttgatt tataagtatt ctttgtatgg taagatgatc
386951 ttaaatgctt ttaaaagttt aaaaataaag gctgggcgca gtagctcacg
387001 cctgtaatcc tagcactatg ggagcccaag ccggaaggac tgcttgagcc
387051 cagcagtttg agaccagcct gggcaacatg gcgaaacccc atttctacaa
387101 aaaatacaaa aaaaaaaggc caggcacggt agctcactcc tgtaatccca
387151 gcactttggg agaccaaggt gggtagatca cttgaggtca agagttcgtg
387201 accagcctgg caaacatagt gaaaccccat ctttactgaa aatacaaaaa
387251 aaattagcct ggcggtagtg gcgcatgcct gtaatcccag ctacttggga
387301 ggctgaggca ggagaatcac ttgagcccgg gaggcagagg tggctgtgag
387351 ccgagactgc atcactgcac tccttgtctg ggtggcagag tgagagaccc
387401 tgtctcaaaa aaaaaaaaga aagaaagaaa gaaaaagaaa aattattagc
387451 caggcatggt ggcgcatgcc tgcagtctca gttactcagg aggctgaggt
387501 gagaggattg cttgaaccca ggaagtcaag gctgcagttg agccgagatc
387551 acaacgctgc actctaacct gggtgacaga gggagaccct gtctcaaaaa
387601 gattaataaa ataaacaaaa aggaacaaga tgcccctcaa acgacctctt
387651 gtgcctctta caaaacagat ggagaaagga gtcataagaa gtcaagccat
387701 ataaagccat acaagcaggt aagtaaattt caagaaaatc cagaagcagg
387751 ttttcctgga attatgaacc atatcaagtt agccttcaaa atgtttaatt
387801 ttacatgaca cagaattagc caaaaatatg actcaccacc tttaaaatta
387851 caacacaaaa ggtaagacat tcaaaaccac acaacttcct gacagcagca
387901 caattattct aaaatcatta aacaaatatg ggcaactctg ccctaagggt
387951 ttggtaatct actgcaagat caagctaacc ttcataatga tggggcatta
388001 ttatacgcac tgacttcacc cagtgctaaa tcacatgaag ctttatttta
388051 caaggtattt ctccaaagac ttgtcattta agagtcaatt caagaaatag
388101 gtcatgtatc ttacatgtcc atacccatca taaaagaaaa aggcatcccc
388151 aacaggcttg gtagggtggt aacaacagag tgctgaggcc tgtgtcccag
388201 gtttgctttt aaaatcagtc agtatgacag ctgtttgctg ttttgagcct
388251 gggtttcccc caaacctaga aatttgtcat tttatgttca agatataatg
388301 aagaagctgg gggatttctt gaacagataa gaacaacaga ggcagtaata
388351 ttggccaagc aagtaattat ccctagcaag acaatcaagc aaagctaaca
388401 gcaggaaaga agaaacgaat aactatcctg aacctgcctt gtcgtagaca
388451 ctgttaatta ggtagcttcc atacattatt tcatttaatc ttcgtaatac

FIG. 5 CONT'D

388501 tcttgtgagg aggagactgt aaaccatttc tgacagatga ggactgaggc
388551 tcaaaggtga aatgacgcca aggtcacaca gcagacccct ctaatttttc
388601 ttatggagaa tatcagtcct ggcccttgaa gggctgaact tcctcaacaa
388651 cttcagtgaa cttcctaaag tcacttcttt ctgactttat cttgccttgt
388701 aaatgtacag cagcatctgt ctttaaactg ttaccaatat aaaaagtatc
388751 caggccgggc ggggtagctc acacctgtaa tcccagcact ttgagaggcc
388801 gaggcgggcg gaccacctga ggtggggagt tcgagaccag cctgaccaac
388851 atggagaaac cctgtctcta ctaaaaatac aaaattaacc aagcatggtg
388901 gcacatgcct gtaatcccag ctactcaaga ggctgaggca ggagaatcgc
388951 ttgaacctgg gaggtggagg ttgcagtgaa ccgagattgc accactgcac
389001 cccagcctgg ggaagaagag cgaaacccca tctcaaaaaa aaaagaagta
389051 tccactctcc caataaaaag cattccgcaa aatgcttctg cctagatttg
389101 cctggttaaa cctcatgaat gtcatttatt cctgcacttt tgcatcaacc
389151 attgagaggc aggcctagag aacacatgtg acctctgtcc tcggagctca
389201 caacatacaa ggtgcatcct tgggctggag actgctaagg cacaaagtgt
389251 gtcttcatta gaccatgcat gctcaacctg ggcagctgag aacatgaact
389301 ggcatccttg gaattcagac aaggttccct gagaggtttt gtggggctat
389351 gtgccaggca gaacaacaga acagggtcct taacttgggc gcgtggcatt
389401 tccctcctaa ggcagcagag cgtaactgta aataccacca aaactttcta
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389501 ggtctttaat tattccattt tcctggaggc agtggcacct tttactactg
389551 ttaagaaaac cacattaagg atcataatta tatcaacctt aagaagaatt
389601 aatgtgtata cactatcaat ccaataaact aaagcaggtg caatctaaaa
389651 attaatgagt atttcatctg tgataaaatc tacgtcagac ttaagaactg
389701 tgcggttaac aatgactcaa aaatacagga tctgccaggt gcagtggctc
389751 acacttgtaa ttccagcact ttgggaggta gaggcaggca gatcacttga
389801 gtccagaagt ttgagaccag cctagatgac atggtgaaac cctgcctcta
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389901 gctacttggg aggctgaggt ggaaggatcg tttgaacctg ggaggtggag
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390051 aacagcaaca ttatttagga cagctctgat atcatgacat ctattaaatt
390101 tgcctaaaca tgaaagaaaa gtattaacag acttattcta actatggatt
390151 tcatttcaaa ggaatataaa tgtagttcaa ctaaatttca tttaaataat
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390251 gaggctgagg caggcagatc agttgaggtc aggagtttga gaccagactg
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390901 atttttctaa agtataatat atacagaaat gtatacacca aaatatatct
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391051 ttcgtcagca gggttgtggc cagaaaacaa gtcctatcag tctcctacct
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391251 ctcagcctcc caagtagctg ggattacagg cgcccaccat cacgcccggc
391301 taattttgca tttttttagt agagacgggg tttcaccatg tttgccaggc
391351 tggtctcaaa ctcccgacct caagtgatcc acctacctcg gcctcccaaa

FIG. 5 CONT'D

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391501 tcgctctgtt gtccagtctg gagtacactg gcaccatctt ggctcactgc
391551 aaactccccc tcatcagttc aagcaattct tgtgcctcag cctcccgagt
391601 agctggaatt acaggtgtac accaccatgc ctagctaatc tttgtatttt
391651 tagtagagaa ggggtttcac catgttggcc aggctggtct caaactcctg
391701 acctcaagtg atccacccac ctgggcctcc caaagtgctg ggattacagg
391751 cgtgagccac cacacctggc cttctttgta tttttaaaat atagtcccaa
391801 atttcttttt ttgggggtgg ggggtggaca gagtctcact ctgttgccca
391851 gtctggagta cactggcacc atcttggctc actgcaacct ccacctcccc
391901 agttcaagca attcttgtgc ctcagccttc tgagtggctg agattacagg
391951 tgtgcaccac cacgcctggc taatttttgt atttttagta gagacggggt
392001 ttcaccatgt tagccaggct ggtctcaaac tcctgacctc aggtgatctg
392051 cccacctcag cctcccaaag tgctgggatt agaggcgtga gccaccatgc
392101 tcggccagtc ccaaatttct ataacaaaca ctttgtgacc aataaaatga
392151 acaaatattt ccaatgaaaa taaaagttca attatttgaa ttatgtttta
392201 cccctaggct gttagaagtt ttaagatgta ttcttgcttt agattcataa
392251 cgtagagtgg cagaatgttt caggcaaaat ctggaaaaat gaattattaa
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392351 gaaaaccaga tggtgattcc ttaaaaaaaa aaaaaaacat tagaattata
392401 ttatctagat aaactccatt tctagcatat accccaaaga actgaaagca
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392551 taaacaaaat gtggtctaca catacgatag aatattattc acccttagga
392601 ggaaattctg atacatacaa caacagggat gaaccctgaa gacattatgc
392651 taataagtta gacaaatatt gcatgattcc acttacatga ggtacctaga
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392751 gggaggtagg aatggggagt tactgtttaa tgggtacaga gtttcacttt
392801 ggggtgatga aaaagttcta ggcaacaaat atgtgaaaaa atattcaaca
392851 tcactaatca tcagagaaat ccaaatcaaa accacaatga gatactatct
392901 cacaccagtc agaatggcca ttatcaaaaa gtcaaaaaca aaagatattg
392951 gcgaggctgt acagcagagg caacactata cactgttagt gggaatgtaa
393001 attagttcag ccactgtgga aagcagtttg gagatttctc aaagaactta
393051 aaacagaact accattcaac ccaggaatcc caagactggg tatacatcca
393101 aaggaaaata aattgttcta ccaaaaaaaa aaaaaatgca cctgtatgtt
393151 catcacagca ctattcacaa tagcaaagac atggaatcaa cctaggtgcc
393201 cgttgacagt agattggaaa aagaaaatgt ggtatatata caccatggaa
393251 tactacatgg ccataaagaa gaacaaaatc atggatgcag ctacaggcca
393301 ttatcctatg tgaattaaca caggaacaga aaaccaaata ccacatgttg
393351 tcacttagaa atgggaacta aatatagggt acacgtggat ataaagacag
393401 gaacaacaga cactggagac tactacaggg gcagggaggg aggggtacac
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393751 agtagtccca gctactcggg aggctgagga aggagaatgg catgaacctg
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393901 atgatttttt ttaagtagtc tagagattga tggtggtgat gattgtacaa
393951 caatgtgaat gtacataatg tgactaaaat gtgtaattaa aaatcattaa
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394051 ataatcatcc tgtgggcttt tatcaagact gcattaataa actcaaagat
394101 acatttctaa aattaaatat agaaaggttt cagtcctaaa aaatgtgttt
394151 ggaaaagtaa aatcatactg ttttaatcat gtcttgagaa tataagttca
394201 gattagggaa attctcaacg gagcatttat aaaagaaata tagccttctt
394251 agaatttttcc agtgcataca gcaatttaaa ccagaccaaa caaattgcta
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FIG. 5 CONT'D

394301 agatgacagg tccttccagg gcttgtcatc ttgataatta taaaaatgat
394351 gagctgtaat tagaatgtca gtcatcttta aatagttact tctgaagtac
394401 ctcactaaga tagtaatttt tttgcaagcc ttccatgttt tatttaggaa
394451 atactttctg aaaaacaata ttaatgtgtt gcagcctgaa ttaccactct
394501 ttatgagtta ttattaggtg aatcaatgac ttttttttt aactgtataa
394551 agataaaaca agggtgcaag gaaagaaaag aggaacgcaa aaatgcaagc
394601 agaggtagaa agagtgtaac gtccttaaag ataatatgcc aacccacttg
394651 gctcttcgta ttttctctgg cacttgaaaa tacatcctgt atccccactg
394701 cacttatcct acgtccatta gtcctacaga tcaatatccc attccctggg
394751 atggcttatc ctagctattg gcactgtccc tcagagaact tgtggcatga
394801 ggaagaaaag gttattttac tttatactct gaaagcaaat tcagtcagga
394851 caaacacagg ccttccaatt ttagaaatct acatttagaa ctggaaggct
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395051 tttaaaaaca acaggaaatg gagagaaatg gtacaggaaa actggttttg
395101 atgaaataat gttctcaata ttaaacaaca gtggaaattt agggttgatc
395151 tgtaagcaca tggcttccac acagacctca actaaccaga atgtatttgt
395201 ttgggctagt ttaaattgct gttatgtact ggcttttaaa tgccaccaat
395251 agggtattct acctttagat ctggcttcta ctgaccttag agctaaggaa
395301 aagagtggga aaagagtaag caatccttca gcattggcga gcaccaagat
395351 tctgacgctt ctggtgtcat tttagaagca tgaaatgagt ttgtgtcatt
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395451 tggaacaatc attttaagta gcctaaacat tcttcagcat acaagctaca
395501 gcaagcttta aactactcaa aacagcaact tctaatatgc aaaatgatat
395551 ttttaattgc aaaaactttg aattaaagca tttacacata cactgaaaat
395601 tcctaataga ggtttctcta tttttgtaaa ctgaatgggt gatgatttta
395651 tttatcagtt taagttgcta agctgtctta cgaaaaaaat ttatttatag
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395751 tatgctaatg tgaacaaaat ccagttgtcc ctcagtatct gtgggggacc
395801 ggttccagga tctcctgcag atactaaaat ccacagatgc tcaagtccct
395851 gatagaaaat ggcatagtat ttgcacataa cctacacaca tcctcccata
395901 tactttaaat gatctccaga ttacttataa tacctaatac aatgtaaatg
395951 cttggtaaat agttgttaac gtttattgct tggggaataa tgacaagaaa
396001 aaatactcta catgttcagt acaaatgcaa tttttaatat ttgcaatttg
396051 aggctggttg aatccacaga tgtggaatcc atggatacag agagctgact
396101 ttaatagcat acattaattc ttcttctgca atgaccccag ataccaacaa
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396501 agccttcttc ctttttttagc aataaatgtt ccatttgagc acaaaagatt
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397051 cctgtaatcc cagcactttg ggaggccgag gcaggcggat cacgaggtca
397101 ggagatcaag accatcctgg ctaacacagc gaaaccccgt ctctactaaa
397151 aatacaaaaa aattagccgg gcctggtagt gggcgcctgt agtcccagct

FIG. 5 CONT'D

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397201 actctggagg ctgaggcagg agaatggcgt gagcccagga ggcacagctt
397251 gcagtgaacc gagatggtgc cactgcactc cagtttgggt gacagatcga
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398351 gtcaaattca aatctaaata tggtttcatg aatctttctc atgtggatac
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398451 tgtaccctgc aatgacctaa agccaaactg aaattccagc aatggactgg
398501 cagaaccata cactattaat tcaataaatt ttcttaggta aacaggacac
398551 agagccaaca ccaacagaaa ttacatgggg ttgggggatc tagacacata
398601 aacagatgct cacaacagtg tggctggtca gatgctgtgg aggcaacaga
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398701 tgagcactca tgccaggtaa ggctctggtg gaggaactga aagaaagtca
398751 gcatggctgc agccaaacaa ctcaggcttt atcctaagag caccaggtaa
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398951 ccacactagg gaaatggaga aaattgaaca agaaggaaaa tcaagaagat
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399551 aacaagaaca gtttcactga ggttgtgggt ggaagaggcc aggttgcagc
399601 aggttgaggc gtatgtgaaa ggtgaagaaa aggaaaccat gagtataaac
399651 aacttgttca agaaatttca ctctgaagga aaaatgagaa atcgcatagt
399701 aatcacagaa tgtgatagag ttgcaggacg ttttctgtta acctttttaa
399751 tgtaaacatt gttagaggct tgaacatgtt tgaattaatg ggaaggagcc
399801 agtagaaaca tcaaagagga gaggatgtaa caactcaatg ggccttaaga
399851 aagtagcagg gaatgggatc tgaagcagaa gtgcaacaga agcgccgggc
399901 gcagtggctc atgcctgtaa tcccagcact ttgggaggcc gaggcaggtg
399951 gatcatctga tgtcaggagt tcgagaccgg cctggccaac atggtgaaac
400001 cccatctcta ttaaaaatac aaaaattagc tgggcatagt ggtgggtgcc
400051 tgtaatcgca gctactcagg accctgaggc aggagaatcg cttgaactcg
```

FIG. 5 CONT'D

```
400101 ggagacggag gttgcagtga gccaagatca caccactgca ctccagcctg
400151 ggcaacaaaa gcaaaattct gtctctaaat aaataaataa ataaataaat
400201 gcaagagaaa ctgtagaaag gagcaagtct tccttttctt ccttccacaa
400251 gaggaggagg aaagggtgaa tgtgaatgaa agccagttta aaggttagga
400301 atccagatgc tggagacata ctcattctct cattctcatt ctctctcccc
400351 gctgagtctc cattttacat gcccaccggc aatgtacaac agtgctgctt
400401 tctccagtat ttactgtctt ttgtattata cccatcctag tggatgggag
400451 gtggtatctc atggttttga ttggcatttg gagaccattc tcttctgagg
400501 tcacctattt ttcccctatg aagaaagagt taggcttttt gctaagagta
400551 agaggggagg tagcaataaa cagtggagtg gaggccgggt gtggttgctc
400601 acgcctgtaa tcccaacatt ttgggaggcc aaggcgggag gactgcttga
400651 ggctaggtgt tcaagaccag cctgggcaac atagggagac cctgtctcta
400701 caaaaaataa aaaaattagt cgaatgtggt ggtgcgcacc tgtggtccca
400751 gctacttggg agtggggagg atcacttgag cctgggagtt tgaggctgca
400801 gtgagctatg atcacatggc acactgtact ccagactggg cgacatagtg
400851 agaccctgtc tcaaaaagaa aaaagtggag tggagcaatt gggggtaaaa
400901 tggtgaagtc tgaagcagtc accagggagg atgggaaaga gcactgagca
400951 gagaaaccta gcaggatggt aagaccaagc ccagagaaag ctggagaccg
401001 taagtcttta gaggtaccca tctggtctcc tctgtgagct tttctacccc
401051 aggaaagaag tgtgcttttg tgtatgtgtg tgtgtgtgtg tgtgtgtgtg
401101 ttttaaatgt gatctaacac acagttgact tatataatta tttcattaac
401151 tgatctcctc tactaagtct attctggcta aattcagaca acactcatca
401201 taccctctt gtgcattctt cagcacgtac acaacatgta ctttttttt
401251 ttgagatgga gtctcactgt gtcgcccagg ctggagtgca gtggcacaat
401301 ctcggctcac tgcaacctct gcctccccag gtcaggtaat tctcgtacct
401351 cagcctcctg agtagctggg actacaggcg cacaccacca cgcccagcta
401401 atttttgta tttttagtag agacggggtt tcaccatgtt ggccaagctg
401451 gtcttgaact cctggcctcg tgtaatctgt cgcctcaatc tcccaaaatg
401501 ctgggattac agatgtaagc cactgcgcct ggccaatatg taacattttt
401551 aacttttgt aaaaccagag aatattttga aatgtgtccg aatgccctgc
401601 ctagattcta gactctgtga ggccccagcc tcctttcctа tgcatgactt
401651 actgtttaat gtagtacaca cagaagggat atcatcatca taataaaggt
401701 cctcactttc cttcacagtt tcatctaccc cacaatgact cccaggaaaa
401751 ggagggtact gtttcagact tcccagctcc cgtatattag gtggagccaa
401801 gttcttgctg cagcatacgg gcacgcttta aaattttcaa atcatttttt
401851 aaaagctaca agcttgacag ctttgggttt ttatggctac ttgttttctg
401901 aagttcacag aactttatca tttggatcac acacttaaaa aaatcacttg
401951 caaaaatctc tttaaagatg aatatgcttc ctcttcaaga gaaacagact
402001 agcgggtaga agaaaaagga cccgtctaga gtattaataa atagactgat
402051 attcacacaa tggattaaat ggattaaagt ccatcccaca gatgaactgt
402101 tatattaata gaatccaaat atacagttac atcctcgacc ctgaaagcag
402151 tttaaacggg tgaaattcac ccagtgctca cttgaaatga gtactctaaa
402201 gtttaaagca cctataaact gccctcagga ttcaatcatt tttccattcc
402251 ttccggcatt atatactttg atgttttaat gttattagcc cacaatacac
402301 accagtttca gaaactcagt ttttgtcctc taagggcttt tagtcctccc
402351 aaaaaaagaa tagggcaaaa gcaaggaaga tcatgaatct ggttttctaa
402401 aagcattatt acaagactgc tttataaaat tgtaatcccc agctgcagag
402451 ttccgcagat ggcttgaaag tgtcttacat gcaaataaat aaaaacaaaa
402501 ggccacttat gcgagcagaa cacagcgtgc tcgatagtca tcttaaaccg
402551 agcaggtagg tactttatca gaggcagaca agggaaacgt cacttattta
402601 gagttcaccg cacgcctgga taaaagtcct cactaacaaa atccctgcct
402651 ttgtggattc tgtgtcggaa agggaaacga taaagaatac ggtttgtgac
402701 agcactactc tcaggagacg aaggagagat gctaagatct tggaaaggag
402751 agagaatagg aagagtcgga ggggagatct cctctcagta aaacggcacc
402801 cacagcagtc agacttcagc tacgagcaaa atcgagtccg tgcacctcaa
402851 aaaagagagg gaggcaggga aaactttccc tcgcctctcc ccatccttcc
402901 ctcctcctcg caggagagca cattagctga ggtgctggcg ggggccgggc
402951 cggggacccc atccctcgcc ccggacgcag cgcccgcagg gactgcccgg
```

FIG. 5 CONT'D

403001 gagcccgagc gagggaggcg ggaggtacag gagtaacggg gcactcccgg
403051 cccggcctgc ggggaaggga agcaggggca gggccgaggg ggaagaggcc
403101 tccgcgagct cgaccccgcg cccacacgct acctgcgagg tcagctgctg
403151 ccgcgccgtc ccgcgggacc gcagggatct ccgaagctcc aatgggcgca
403201 gaagtgcgag cgagcggcgg tgcccaccgg cagcgaagag gaggagcgcc
403251 agggcgccgg gcccgccggg tcacgtggcc ccggccgcct cacgtgaccc
403301 ggtgcagcgc gcgcccggga cgctacccag ccgagcatcc cgcaccgccc
403351 cggccccggc cccggccgaa accctgctct tcgggcccta caacccgact
403401 tctttagaag ccgattggcc gtctcaggcc cgccccgagg ccctgccact
403451 ggagtgtccc catgaaatcc ggtggctgct gccgggactt agaggctttt
403501 gtgtctgagg aaccaggaac gcgcgaggca cgggctcctg ctctgctccc
403551 cgagatggct tggctgtggg gagggtcggc ctaccacccc agagacctag
403601 gacggaaaag cgaccgagaa acttggctcc ctgcccactc tagagcgcgt
403651 ctggccccgg ggcaccaccc aggtggtgct gcctgggagg aaaggcggcg
403701 gagctgggac tagtttgttt ttactggaga cgcgcctccc tccctccccg
403751 cccctcactt cctgattgaa agtacctgag gcaggccagg gactagggaa
403801 ggtggcagct ggacaaaggt atgaaggaag gacgagatga ggcacaggtc
403851 ctggtattgg aaagaggcag aggtacctcg gaagcatgcc atagaggtta
403901 gacgggacct aagagggcat ctggtccaac cggattcgtg ttaccagcga
403951 gtaaactgag gccaggagag ggactgctac gagctgctcc agcctatcac
404001 ctataaagac tacagtccct ttgtaaaata ccatacagct ctcggagaac
404051 tcccagttgg cgctgcagga taaaatccaa acttgttggc atagcattcc
404101 agccacttgt tcacttacct ttcccatttg agctcctagg aataaacaga
404151 aaaacatttc attttctaaa tatcaccaga taacttcact tttggtaact
404201 tgaattatta aaaaagtcct accgtccctc atctcttgcc acttccccaa
404251 cattactgga ggctctggct acaaataatt tgttttcctt gactactcaa
404301 ctttctttgg attatttact ttttctctaa gtttctttac tccttttgc
404351 tttgttcatt cttttgtctg tatctgaaat gtcctgaatc accacctccc
404401 ccacttaaag aaaaccaggg ccaatgatta aaaaaaaaaa aaaaggtatt
404451 aagaaactaa tgcaataaga gaattgagct tagttctgta tctattctga
404501 ggtctcgctc ctgttgcact agttcctgaa taaaatgttt ttaccacttc
404551 aactactgtt tggctctggt tttcttcaac agcctccaaa gtacacatca
404601 gtttcctact catctttcaa aatccaggtc aaatgccgcc tactcttgtc
404651 ttcccagcat cctcttccct gatttttag caattgaagt tcatccagac
404701 agtgtcagct gcaacttctt ccctgatttc cagaatacta tatatattct
404751 gatacacctc acactgccca gaaatagact gcgcatttcc tgtaaaaggt
404801 gaattgtcta ttgctgtctt ctcccttaga ttataaactc tttgaaacag
404851 gattcttctg ggtttagaac agcgcctggc atgtgataga cccttaatac
404901 tcactgaatg aagtggcttg cccaaagtag tggcagttga gtgaatttac
404951 tagaagaggc ctgttttgct caaagaaact aaaatcagtt tcttttggtt
405001 gcaacccgat caaaagaact tgtgtaaaca tgtctgagag aaaaacgagg
405051 gcatggggtg tgagcaatca aatatgtcct gagccctcac tgcttatgtg
405101 tcagatgcca tacttggagc atcttggagg attaaaagct gaatgagaca
405151 tggttgctga taaggaatgt gtagtctggt tcattattcc agtacagggt
405201 gaaaagtatt atgatacaag gtgctaagtg aacacaaacc agggaccaca
405251 aatcagggag tcagggagaa acttcatgag aaggtcagtt ggacaggaag
405301 tagataagaa gaaagaaaaa gacattccag gagagagcaa tgtgttcaaa
405351 agtagtgaca catgaaacag tactatttgt ttaggaaaaa acaaacaggt
405401 aggtgcagtg gctcatgcct gtaatcccag gccaaggcag gcaaatcact
405451 tgaggtcaag agttcaagac cagcctggcc aactttggaa aaccctgtct
405501 ctactagaaa tacaaaaatt agccagctgt ggtggcacgt gcctgtaatc
405551 ccagctactt gagaggctga ggcacaaaaa tcacttgaac ccaggaggca
405601 gaggttgtag tgagccaaga tcgcatcact gcattccagc ctgggtgaca
405651 gagtgagact ctgtctcaaa aaaacaaaaa caagtaaccc tatattgatg
405701 ccttgatgac ttcattcaca tctaggataa aggaaaccaa attaggttaa
405751 ttttaatata cttgaaagaa tgacatattt actggtattg gtgttattta
405801 ttgtattgaa taactttcta tcaggcacat cataggctct gcatctaaaa
405851 ttggcctagg ccaggcacag tgggtcacgc ctataatccc aatgctttgg

FIG. 5 CONT'D

```
405901 gaggccaagg taggtggatt gcttgagccc aggagttcaa gaccagcctg
405951 gacaacatag caagacgctg tccctataaa taaataagaa taaaactggc
406001 ttggactaac gcgaggtgat tttttacctt tttttccagc ctcaaaagct
406051 ttctatgatt attatgtaaa aataccaaaa ttacttgttc caaagaagat
406101 gatttttttt atttttgag acagcgtctt gctctgttgc tcaagctgta
406151 ctgcagtggc atgatcataa ctcactgcag cttcaacctc catgggctca
406201 agtgatcttc ccacctcagc acctcagcct cctgagtagc taggaccaca
406251 ggtgagggcc atcaggctgg gctaatttat attttctgtg gagacggggt
406301 ttgccatgtt ggccagcctg gtctcgaact cctgagctca agcagtttgc
406351 ctacctcagt ctctcaaagt gccaagatta caggtgtgag ccaccatgcc
406401 tggccccaaa gaagattatt ttagagcact ccaaaccttt cctttagagc
406451 aaaataattc aattaacagg tagtacttta agacagaaac tgggcttaac
406501 ctccagcatg tgaaaaggga gaaccactcc acttaatgct aacacatgat
406551 tacgttggga aaagtacctg tcaagaacct aataaaatat cataaggttt
406601 gtccggacat ggtggctcac gcctgtaatc ccagcacttt gggaggccaa
406651 ggcaggtaga tcacttgagg tcaggagttt gaaaccagcc tggccaacct
406701 ggtgaaaccc tgtctctact aaaaatacaa aagttagctg ggtgtggtgg
406751 tgggcacctg taatcccagc tactcaggag gctgaggtgg gagaatcact
406801 tgaaccctgg aagcagagat tgcagtgagt cgagatcatg ccactgcact
406851 ccagcctggg caacagagta agagtccatc tcaaaaataa aataaaaata
406901 aaaaatgaat aaaattgctt ctttgtcctt tggcaggcaa aatagctttt
406951 ttatttttt atttttattt tttgacacag ggtctcgccc tgtcacccag
407001 gctggagtgc agtgtcatga tctcagctca ctgcagtctc cacgtcctgg
407051 acttaagcga ccttcccacc tcagccgccc gagtagctag gactacagat
407101 gcataccacc acacctggct acttctgttt attgtttgta gacacaggat
407151 ctcactattt tgtccaggct ggtcttgaac tcctgaaccc aacggatcct
407201 cccacctcag catcccaaag tgctgggatt acaggtgtga gccactgtac
407251 ccagcccaag agagcttctt aattatggaa tttcttcact gtccatgtca
407301 gttgatggtg aaatgtttat tttttattca ttagcagtgg tccttgttcc
407351 acctgcattt agctgtggta gcaccatggc ttattaggag gtcaccaact
407401 tctggtggga gatacgcagt ctctagtctt ctgagacata gaagttctga
407451 ctgcaattga ctatgaagca ggactggtcc tctgaatgtt aacatgcatc
407501 ttgaagactt cttagagtga ccctgggatg atgatggagg tagtaagaat
407551 attctcagat ggggcttgac tcactcattt ggaatattaa aggtgaagtt
407601 acctgggaca aactcagtga ctttatgagg aaacaatcag agaaatacat
407651 aatagcggac aagaaccttt ctagccttgg tttcctcaaa aagttaaatt
407701 taggggggaag gccaggcacg gtggctcaca cctgtaatca taacactttg
407751 ggaggccaag gtaggcagat cacttgaggt caggagttcg aaactaggct
407801 ggccaacatg gtgaaactcc atctctacta aaaatatttt aaaacgttag
407851 cccagcgtgg tggcaggcac ctgtaatccc agctacttgg gcggctcagt
407901 caggagaatt tacttgggag gctcagtcag gagaatcact tgaacccaga
407951 ggcaaaggtt gcagtgagct gagatcacgc cattgcactc aaccctgggc
408001 aacatgagca aaactccata tcaaaaaaaa attaaaattg aaaaattagg
408051 gggttaaaaa aaagaggggg actgttctag attaaaagag actaaagaaa
408101 catgaaattc aaatgcagtg catgaacctt aggtagaatc ctggttccaa
408151 ttttatttt taagagatgg gggtctcact ctgtcaccca gcctggagtg
408201 cagtggcacc atcacagccc actgcagcct caaactcctg ggctcaaaag
408251 atcctctggc cttggcctcc taaaaggttg ggattacagg tgtgagtcac
408301 cacgcccagc cccttggttc caatttttt aagctataaa taatattttg
408351 taaagaatca gaaatttaat atggactgga tattagatag tattaggaga
408401 ttactgggtt ttttagatgt ggtaatagta atattaagaa catcctggct
408451 gggcatggtg gcttatgcct gtaatcccag ccctttggga ggctaaggcg
408501 ggaggattgc ttgagcccag gagtctgaga ctagcctggg caacatgacg
408551 aaaccctatc tctaccaaaa attagccagg caagatggca cacagctgtg
408601 atcccagcta ctcgggaagc tgtggtggga ggattgcttg agtccaggag
408651 gtcaaggctg cagtgagcta tgattgcacc actgcactcc agtctgggca
408701 acagagcaag accttgtctc aaaaaacaaa aaaacaaaca aacaaaacaa
408751 aaaaacaaag aaagaatgtc cctattttta tgagatgtgt accagaataa
```

FIG. 5 CONT'D

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408801 ttaaggacag agtgtaatga ggtctgcaaa tggttcacac aaaaaattaa
408851 tactgtatat atccatgtcc ataaagaaag agaaaatatg gcaaaatgtt
408901 tgcaattgtt aaatcgagga gctattattt atacttttat ttaaactttg
408951 aaatttttctt tctttttttt ttttttttt tgatatggcg tctcgctctc
409001 ttgcccaggt tggactgcag tggcgtgatc tcagctcact gcaacctcca
409051 cctctgaggt tcaagtgact ctcatgcctc agcctcccca gtagctagga
409101 ttacaggtgt gcaccatcac gtctggctaa tttttgtatt tttagtagag
409151 atggggtttc actatgtgtg atccacccac tttgacctcc caaagtgctg
409201 ggattacaga tgagagccac cacgtccggc taaactttga aattttcata
409251 gcaaaatgtt gtaaggtggg atgagatgtg ccctttatat ttcaaactaa
409301 gaaagcagga tatttcagta atttatttat tcataaagat cttttgaatg
409351 cctgccatgt gctaggcact gtaataaggt ctgggtgtac cttggtgatt
409401 aaaacagtaa tgttctcttt tataaatgtt atgctgcatt acccaatctc
409451 tcctttaaga ctgaaggatt tattccccca gcttttggga agcttgtatg
409501 ctgacagcct tcttcagtga ctgtcttgct aaagaaagct gccttattca
409551 aggtccagtc accttatagg ggcagcctgc aacaaatgac tagtcgcgcc
409601 aggcctaatc tttaatttca atgcaattac catttttct tgttttcaaa
409651 acttaacaaa attattctaa tgtttatatg tgagaagagc caggaaatac
409701 caaaaaagaa ttctagaaaa gaagagtgat ggctatgaag agacagagta
409751 ggagcaattt actaatccat catagtgatt tcaagagttg agtattgact
409801 gctgccttct aagaacttaa aaggccctct ccgctctccc ctctcccctc
409851 tcccctctcc cctctcccca cggtctccct ctcatgcgga gccggagctg
409901 gactgtactg ctgccatctc ggctcactgc aacctccctg cctgattctc
409951 ctgcctcagt ctgccgaatg cctgcgattg caggcacgcg ccgccacgcc
410001 tgactggttt tggtggagac ggggtttcgc tgtgttggcc gggccggtct
410051 ccagccccta accgcgagtg atccgccaac ctcggcctcc cgaggtgccg
410101 ggattgcaga cggagtctcg ttcactcagt gctcaatggt gcccaggctg
410151 gagtgcagtg gcgtgatctc ggctcactac aacctacacc tcccagccgc
410201 ctgccttggc ctcccaaagt gccgagattg cagcctctgc ccggccgcca
410251 ccctgtctgg gaagtgagga gtgtctctgc ctggccgccc atcgtctggg
410301 ctgtgaggag cccctctgcc tggctgccca gtctggaaag tgaggagcgt
410351 ctccgcccgg ccgccatccc atctaggaag tgaggagcgc ctcttcccag
410401 ccgccatcac atctaggaag tgaggagcgt ctctgcccgg ccgcccatcg
410451 tctgagatgt ggggagcgcc tctgccccgc cgccccatct gggatgtgag
410501 gagcgcctct gcccggccga gaccccgtct gggaggtgag gagcgtctct
410551 gcccggccgc cccgtctgag aagtgaggag accctctgcc tggcaaccac
410601 cccgtctgag aagtgaggag cccctccgcc cggcagctgc cccgtctgag
410651 aagtgaggag cctctccgcc cggcagccac cccatctggg aagtgaggag
410701 cgtctccgcc cggcagccac cccgtccgga agggaggtgg gggggtcag
410751 ccccccgccc ggccagccgc cccatctggg agggaggtgg ggggtcagcc
410801 cccccgcccg gccagccgtg ccgtccggga gggaggtggg ggggtc
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FIG. 5 CONT'D

ANGE

Exon1
ATCCGGCCGCCACCCGCAGCTGCAGCACAGTCATGGCCCAGGCGTCGCCGCCCCGG
CCCGAGAGGGTGCTCGGCGCCAGCAGCCCGGAGGCCCGGCCCGCGCAGGAGGCGCT
CCTCCTTCCCACCG

Exon2
GTGTCTTTCAGGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAA
GATGTCGAATATAATGTCCTGTACTTTGCACAATCAGAGAATATAGCTGCTCATGA
GAATTGTTTG

Exon3
CTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGGATCCACTTAATCCTGATAG
AAGTTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTTG

Exon4
AAATGCAAATTTTGTCATAAAAGAGGAGCCACCGTGGGATGTGATTTAAAAAACTG
TAACAAGAATTACCACTTTTTCTGTGCCAAGAAGGACGACGCAGTTCCACAGTCTG
ATGGAGTTCGAGGAATTTATAA

Exon5
ACTGCTTTGCCAGCAACATGCTCAATTCCCGATCATCGCTCAAAGTG

Exon6
CTAAATTTTCAGGAGTGAAAAGAAAAAGAGGAAGGAAGAAACCCCTCTCAGGCAAT
CATGTACAG

Exon7
CCACCCGAAACAATGAAATGTAATACATTCATAAGACAAGTGAAAGAAGAGCATGG
CAGACACACAG

Exon8
ATGCAACTGTGAAAGTTCCTTTTCTTAAGAAATGCAAGGGAAGCAGGACTTCTTAA
TTACTTACTTGAAGAAATATTAGACAAAGTTCATTCAATTCCAGAAAAACTCATGG
ATGAGACTACTTCAGAATCAG

Exon9
ACTATGAAGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAAGACACATTT
GTAAATTTTCAAGCAG

Exon10
CAATAGAGAAAAAAATTCATGCATCTCAACAAAGGTGGCAGCAGTTGAAGGAAGAG
ATTGAGCTACTTCAGGACTTAAAACAAACCTTGTGCTCTTTTCAAGAAAATAGAGA
TCTTATGTCAAGTTCTACATCAATATCATCCCTGTCTTATTAGGGATTACCATTTC
CTAAGCCAAGAGTCATGTCAAATTGCAATCAGGCTCAAAACCAGAGACCAGGCTGT
GAAATCCACACATCTTTAGAACTAGTCGTCTCCTCTTGGCCTCAGCAGCTCTTCCC
TGTTCTTACTGGTTGACATTTTGATCACTCTTTGCACACTCTTGTGTTTTTTGCTC
ACTGTCACACTCCCAGCACCTAGTATGCTCAGTAAATGTTTGTGGAATAAGTGCAT
AAAATGTTCTTAACCTTTGATTCTACTTACAGCCCATGATAGCCTCTTAGATATAA
TAAATTTGGATTATACTAAAA

FIG. 5a(i)

ANGE Protein Sequence

```
  1  MAQASPPRPE RVLGASSPEA RPAQEALLLP TGVFQVAEKM EKRTCALCPK
 51  DVEYNVLYFA QSENIAAHEN CLLYSSGLVE CEDQDPLNPD RSFDVESVKK
101  EIQRGRKLKC KFCHKRGATV GCDLKNCNKN YHFFCAKKDD AVPQSDGVRG
151  IYKLLCQQHA QFPIIAQSAK FSGVKRKRGR KKPLSGNHVQ PPETMKCNTF
201  IRQVKEEHGR HTDATVKVPF LKKCKEAGLL NYLLEEILDK VHSIPEKLMD
251  ETTSESDYEE IGSALFDCRL FEDTFVNFQA AIEKKIHASQ QRWQQLKEEI
301  ELLQDLKQTL CSFQENRDLM SSSTSISSLS Y
```

A third alternative transcript of this gene has a different initial exon and is then assumed to have the same structure of exons 2-10 as ANGE and BCAP. Exon 2 starts at base pair 247. The 5' sequence only of this transcript is shown:

FIG. 5a(ii)

NY-REN34

Exon 1

CACAAAGGCACCAAACCACAAAACGTCACACGTAAACATCATACGTGGCAACCACAAG
CCAATCAGTTGGATATTTCATTCATTGGTATACATATGGACTGTAAG

Exon 2
GTGTCTTTCAGGTTGCAGAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGAT
GTCGAATATAATGTCCTATACTTTGCACAATCAGAGAATATAGCTGCTCATGAGAATTG
TTTG

Exon 3
CTGTATTCTTCAGGACTTGTGGAATGTGAGGATCAGGATCCACTTAATCCTGATAGAAG
TTTTGATGTGGAATCAGTAAAGAAAGAAATCCAGAGAGGAAGGAAGTTG

Exon 4
AAATGCAAATTTTGTCATAAAAGAGGAGCCACCGTGGGATGTGATTTAAAAAACTGTAA
CAAGAATTACCACTTTTTCTGTGCCAAGAAGGACGACGCAGTTCCACAGTCTGATGGAG
TTCGAGGAATTTATAA

Exon 5
ACTGCTTTGCCAGCAACATGCTCAATTCCCGATCATCGCTCAAAGTG

Exon 6
CTAAATTTTCAGGAGTGAAAAGAAAAAGAGGAAGGAAGAAACCCCTCTCAGGCAATCAT
GTACAG

Exon 7
CCACCCGAAACAATGAAATGTAATACATTCATAAGACAAGTGAAAGAAGAGCATGGCAG
ACACACAG

Exon 8
ATGCAACTGTGAAAGTTCCTTTTCTTAAGAAATGCAAGGAAGCAGGACTTCTTAATTAC
TTACTTGAAGAAATATTAGACAAAGTTCATTCAATTCCAGAAAAACTCATGGATGAGAC
TACTTCAGAATCAG

Exon 9
ACTATGAAGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAAGACACATTTGTAA
ATTTTCAAGCAG

Exon 10
CAATAGAGAAAAAAATTCATGCATCTCAACAAAGGTGGCAGCAGTTGAAGGAAGAGATT
GAGCTACTTCAGGACTTAAAACAAACCTTGTGCTCTTTTCAAGAAAATAGAGATCTTAT
GTCAAGTTCTACATCAATATCATCCCTGTCTTATTAGGGATTACCGTTTCCTAAGCCAA
GAGTCATGTCAAATTGCAATCAGGCTCAAAACCAGAGACCAGGCTGTGAAATCCACACA
TCTTTAGAACTAGTCGTCTCCTCTTGGCCTCAGCAGCTCTTCCCTGTTCTTACTGGTTG
ACATTTTGATCACTCTTTGCACACTCTTGTGTTTTTTGCTCACTGTCACATTCCCAGCA
CCTAGTATGCTCAGTAAATGTTTGTGGAATAAGTGCATAAAATGTTCTTAACCTTTGAT
TCTACTTACAGCCCATGATAGCCTCTTAGATATAATAAATTTGGATTATACTAAAA

FIG. 5b(i)

NY-REN-34 Protein Sequence

```
  1  MEKRTCALCP KDVEYNVLYF AQSENIAAHE NCLLYSSGLV ECEDQDPLNP
 51  DRSFDVESVK KEIQRGRKLK CKFCHKRGAT VGCDLKNCNK NYHFFCAKKD
101  DAVPQSDGVR GIYKLLCQQH AQFPIIAQSA KFSGVKRKRG RKKPLSGNHV
151  QPPETMKCNT FIRQVKEEHG RHTDATVKVP FLKKCKEAGL LNYLLEEILD
201  KVHSIPEKLM DETTSESDYE EIGSALFDCR LFEDTFVNFQ AAIEKKIHAS
251  QQRWQQLKEE IELLQDLKQT LCSFQENRDL MSSSTSISSL SY
```

FIG. 5b(ii)

NM_016119.1 (NY-REN-34) Protein Sequence

```
  1  MEKRTCALCP KDVEYNVLYF AQSENIAAHE NCLLYSSGLV ECEDQDPLNP
 51  DRSFDVESVK KEIQRGRKLK CKFCHKRGAT VGCDLKNCNK NYHFFCAKKD
101  DAVPQSDGVR GIYKLLCQQH AQFPIIAQSA KFSGVKRKRG RKKPLSGNHV
151  QPPETMKCNT FIRQVKEEHG RHTDATVKVP FLKKCKGSRT S
```

FIG. 5b(iii)

FIG. 5c(i)

Homo sapiens CLLD7 protein mRNA, Exon sequences

Exon1
CTCCTCCTCTTCGCTGCCGGTGGGCACCGCCGCTCGCTCGCACTTCTGCGCCCATTGGAGCTTCGGAGATCCCTG
CGGTCCCGCGGGACGGCGCGGCAGCAGCTGACCTCGCAG

Exon2
ACAGGATCTTGCTCTCTTGCCCAGACTGGAATACAGTGGTGTGAACACGGCTCACTGCAGCCTCAACCTCCTGGA
CTCAG

Exon3 (start codon boxed)
AGATGTCGGCTTATTTATAGGAATTGCTTGAAGCCAGAGTC[ATG]GTGGATGTCGGAAAGTGGCCCATCTTCACTC
TACTCTCCCCTCAAGAGATCGCGTCTATTCGGAAGGTGTGTGTCTTCGGCACCTCAGCCAGTGAAGCACTGTACG
TTACTGACAATGATGAG

Exon4
GTCTTTGTATTTGGACTGAACTATAGTAACTGTCTAGGAACTGGAGATAACCAGAGTACACTTGTACCCAAAAAG
CTAGAAGGCTTATGTGGAAAGAAGATTAAAAGCCTCAGTTACGGGAGTGGACCACATGTTCTTCTCAGCACCGAA
G

Exon5
ATGGAGTGGTTTATGCCTGGGGCCACAATGGATATAGCCAGCTTGGGAATGGGACGACCAACCAAGGCATCGCTC
CCGTCCAGGTCTGTACCAATCTCTTGATCAAGCAAGTGGTGGAAGTAGCTTGTGGCTCACATCATTCAATGGCTC
TGGCAGCTGATGGAGAG

Exon6
GTGTTTGCTTGGGGTTATAACAACTGTGGCCAAGTGGGATCAGGTTCTACAGCAAATCAACCAACTCCTCGAAAA
GTTACAAACTGTTTACATATTAAGAGGGTAGTTGGCATTGCCTGTGGTCAGACTTCATCCATGGCTGTTCTGGAC
AATGGCGAG

Exon7
GTATATGGCTGGGGTTACAATGGCAACGGTCAGCTGGGCTTGGGAAACAATGGCAACCAGCTGACCCCTGTGAGA
GTGGCAGCTTTGCACAGCGTGTGTGTGAACCAG

Exon8
ATTGTCTGCGGTTACGCACATACTCTAGCACTAACAGATGAGGGCTTGCTGTATGCCTGGGGAGCTAACACATAT
GGGCAGCTGGGAACTGGCAATAAAAATAACCTGCTAAGCCCAGCACACATCATGGTGGAGAAAGAAAG

Exon9
GGTGGTAGAGATTGCAGCCTGTCACTCTGCCCACACGTCTGCAGCCAAGACGCAGGGTGGGCACGTGTACATGTG
GGGCCAGTGCCGGGGTCAGTCCGTGATCCTCCCGCACCTCACCCACTTCTCCTGCACCGACGACGTGTTTGCCTG
CTTTGCCACTCCGGCCGTCTCGTGGCGCCTCCTGTCTGTGG

Exon10
AGCATGAAGACTTTTTAACAGTTGCAGAGTCACTGAAGAAAGAATTTGATAGTCCAGAAACTGCTGATCTGAAGT
TTCGAATTGATGGAAAATATATTCATGTCCATAAAGCTGTTTTGAAAATCAG

Exon11
GTGTGAGCATTTTCGATCCATGTTCCAGTCGTATTGGAATGAAGACATGAAGGAAGTGATAGAAATCGATCAGTT
TTCTTACCCAGTGTATCGTGCCTTTCTCCAGTACCTCTACACAGACACAGTCGACCTGCCGCCAGAAGATGCTAT
AG

Exon12
GTCTTCTGGATTTGGCGACATCTTACTGTGAAAACAGACTGAAAAAACTTTGTCAGCACATTATCAAGAGAGGAA
TTACTGTGGAGAATGCCTTTTCGCTATTCTCTGCTGCAGTCAGATATGATGCAGAG

Exon13 (stop codon boxed)

GATTTAGAAGAATTCTGCTTTAAGTTTTGCATCAATCATTTGACAGAAGTTACACAGACTGCAGCATTTTGGCAA
ATGGATGGCCCTCTGCTAAAGGAATTCATTGCTAAAGCCAGTAAATGTGGAGCCTTTAAGAACTGAAGCGCAAGG
CTGCTGGGTTCTGTGTGAGTGCTCTGGGGCACTGTTGAGGATGTGTCCAGTTTGTGCTCTACGGGTGATGTGATT
CTGCAGGTAAAAGACCATCAGGTTGTTTTTTTCCACATCTGGGACACAGTTGTTTGTGTAGGAACATAACAAGGG
TGTACGGCTTTTCTTGAGCCCATTTTAAACAACCCTTGTTTCCAGATAAGTGTATTTTAAATGTGACCTTTCGTA
AATTTGGGCTGGAACATGTAAAAGGGTGAAAGTTAGTCGTTTTTGGTCTTCTTTTCATTTTTGATTAGAGGAACT
TCTGAACTTGGAAAGGGGAAGTTGGCAGCAACTCTCCTGGGCCACGTATCAACAATCTTCTGACAGCAGGAGCAG
TGATAGTTGGGGAATTGTGAGATGAATGGAGAGGCCCCATCGTGAATTAAAGATGCTGACCTGGGGATTGTTAAG
TGCTGCCTTAGTTGCTAGTTTAGTAGCCTTACTGTGAAGGAATAATTAAGATTGTTTCAGACTTTTGTTTGTGTG
CTTGCGTTGATGACTTTTTTAACTTCAAGATAAATCAAAGTAATAAGTTTAACGTATATTAAACCTGTTGAAATG
ATAATTATGTAAAGATAAATATTCTAGGTTAGTCAAGATTTCTCTTAAGATTTAAGTGCATAAAGAATAGTAATT
TAGAAGTATCCGTGAAAAGTTGATAATGAAAGAAATTTGATGAAGGTGAATATTTTATAAATTAGAATCTCCACT
ACTTATCCAATGGTGTTTTATTTCATTAAGGTAGAACTTGAGAACTCAAGTTTAAATTGTCCCCCACCACCTTCT
TCTATAAATGCAAACTTAAGAGGAAAATAATGACATGTATAGTATACTCTTGCCTTCCTAAATTATGACTGCTGA
ATCATCATATCTACTATATATGACTGGAAGAAGTGGTTCTTCAAGTCAACCCTCTTACAAGACTTAGTGGGAATT
TGCTTTATCTACTTTAGGCCAAATCCATCACACATTGGCTTATGTGAAACTTTATCATCTTTCACTTTTGGTTTT
CCTCTGTTTTTAAACATCTTAGGTATAACAGCACAATTTCACCTTGAAAAAGCACCAAAATTATGGTGTTCCTGA
AAAGATCCTATTAAAAGACAGTAGTTTATTTGAACTGGTTATGGAAGGTGACTTTGGGATGTAAGAGTGTTCAAC
TGTGAGTTTCATCATGTGTGTCCGTTGAGCTTGCTTTTAAGAGCAATGTTTTGCTTTGCTCTCTGGTCCATGAAC
TCATTTCCATTTGAGTGAGTTCCCTTAGTGAATTTTGTCTCCTGCTTGGAAAGTCTCTCTTCTGAACCTGGAGCC
TGAATACATTTTCAGAGCCAAATTACAAGTGGGTGAAGACATGCTACAACTACTATTTTTAGCAATGTTTTTAAA
TTTGTGTCTATTGGGGTGGGAAGGGGAGTGAGGCCCTAAAGATAGGAATTCACTGATAGCTGAAATAGATACAAG
CCTAGGAGCCCCAGCCCCCTTTTCTTGACCATATCACAAGTGATTGAAGCCCAGTGAATTAGTCGGTTAGAATTC
GTTCTACAACATGATAGAACTTTTCTTACTAGCTTCAGAAATGCACATTGATTTGTGCTATGATGGGTGGTGTTT
GTAACAATCACTGTTCTATAGGCTTATGATCTGAGCAAAATGTGAACTTCAGTATGTTTACTATTGCTCTTACTT
GAAAACTTTTTTTCAAAAAAAGCACAAATTAAAGTAGTAAATTCATATCCATAGATAGTTCATTCATTCAACAAA
TATTTACCAAGTTCCTAATATAAGTGAAGGACCACTTCTCATATTAGATTACTAAGTCATTTGTATGAATATGTG
TGGCAGTGAAGAGAACAGGTCTTTCAAAAAGCATTTGATTATTTTTTTTAAATACACTCTCTTATTTTTCTACTT
GTTTTTTTGTTAATCATAGCAGGATATGACAACTCTTATTTGAATTGATTTTTTCATCTAATGTAATAATGGAAG
CCAAAGTATTCATATTTCTTAAGATAGCCCTAAATGTACTCTTGAACTTCTTACTGGAACAATGTTTGATACTCT
AGTATGTAAGCTGTATTTATGTAATATTTAGAACGACATGTTAATAAACAAAGTAACATTAAAATA

FIG. 5c(i) CONT'D

CLLD7 Peptide Sequence

MVDVGKWPIFTLLSPQEIASIRKVCVFGTSASEALYVTDNDEVFVFGLNYSNCLGTGDNQSTLVPKKLEGLCGKK
IKSLSYGSGPHVLLSTEDGVVYAWGHNGYSQLGNGTTNQGIAPVQVCTNLLIKQVVEVACGSHHSMALAADGEVF
AWGYNNCGQVGSGSTANQPTPRKVTNCLHIKRVVGIACGQTSSMAVLDNGEVYGWGYNGNGQLGLGNNGNQLTPV
RVAALHSVCVNQIVCGYAHTLALTDEGLLYAWGANTYGQLGTGNKNNLLSPAHIMVEKERVVEIAACHSAHTSAA
KTQGGHVYMWGQCRGQSVILPHLTHFSCTDDVFACFATPAVSWRLLSVEHEDFLTVAESLKKEFDSPETADLKFR
IDGKYIHVHKAVLKIRCEHFRSMFQSYWNEDMKEVIEIDQFSYPVYRAFLQYLYTDTVDLPPEDAIGLLDLATSY
CENRLKKLCQHIIKRGITVENAFSLFSAAVRYDAEDLEEFCFKFCINHLTEVTQTAAFWQMDGPLLKEFIAKASK
CGAFKN

FIG. 5c(ii)

FIG. 5d(i)

Homo sapiens CLLD8 protein mRNA, Exon sequences

Exon1
CCTGCGCTCGGGAGGTTTGGGCGGCTTGGCGTCGGAGGAGAGCCCCACCCGCGGAGGAACCCAGCCTTGCCAACG
GAGCTGGCGGAGCTCACTCCTCAGGTCAGGCGGGCGGCGTAGAAAACGCAGCGGAGCCAGGTGAAACCAAGGCAC
CGCCGTGGCTGGCCCCCGACAGTTCCTCTAGCCGGGAGGTTGGAGGAGCTGAAAACGCCGCGGAGCCCTCGGCCG
CCCGAGCAGGGGCTGGACCCCAGCCCTTGCAGCCTCCCTTCTCCTGGCACCCAAGTGCAGTCCTGGCTGCAGAAG
GGGCCGCGGGCGCACTGAGTTTCCAACCTCCATTTCAGCCTGTCTGTCTCAGGGTGCAGCCTTAATGAGAGGTGA
TTCCTAAGCTGCTGGGAACCTGAGGTTGTCAAAGGGGCGGCAGGAAATGGACAGCAGTATAAAACCCAGAAGCAG
AACTTGAAGGTTAAACCACTAGCCCATTTCACAG

Exon2 (start codon boxed)
TGCACTATTCTTTA:TTGTTTTCCTTACAGAATGTTTCATCCATTTGTGGACCAAAAGATGGAGTTGGTTTTTAT
TTTTAAAAAGATAATGTTAATGATCTGATACCACTACAAATATTTACGTGAGAAGATTCATGGACTTGTCTTTTG
GTTGGACTGTCACTCATTTCTGAAAGTTTCTTCAGCCACAATTTCTATTTGAAAATTCAAGTATCAAAGGATACC
AGGTTTAGAATGGTATAATGATGTATTTTGTCTGAGGACTGCAAATTTTATAGAGACCACAGTTGGATTCCAGTG
ATATTCTGCAATCAAAGTGATTTGATAAACCTAATTTTGAAGCATTTTATATTTATAAGCGACATCAAAAG[ATG]G
GAGAAAAAAATG

Exon3
GCGATGCAAAAACTTTCTGGATGGAGCTAGAAGATGATGGAAAAGTGGACTTCATTTTTGAACAAGTACAAAATG
TGCTGCAGTCACTGAAACAAAAGATCAAAGATGGGTCTGCCACCAATAAAG

Exon4
AATACATCCAAGCAATGATTCTAGTGAATGAAGCAACTATAATTAACAGTTCAACATCAATAAAGG

Exon5
GAGCATCACAGAAAGAAGTGAATGCCCAAAGCAGTG

Exon6
ATCCTATGCCTGTGACTCAGAAGGAACAGGAAAACAAATCCAATGCATTTCCCTCTACATCATGTGAAAACTCCT
TTCCAGAAGACTGTACATTTCT

Exon7
AACAACAGAAAATAAGGAAATTCTCTCTCTTGAAGATAAAGTTGTAGACTTTAGAGAAAAAGACTCATCTTCGAA
TTTATCTTACCAAAGTCATGACTGCTCTGGTGCTTGTCTGATGAAAATGCCACTGAACTTGAAGGGAGAAAACCC
TCTGCAGCTGCCAATCAAATGTCACTTCCAAAGACGACATGCAAAGACAAACTCTCATTCTTCAGCACTCCACGT
GAGTTATAAAACCCCTTGTGGAAGGAGTCTACGAAACGTGGAGGAAGTTTTTCGTTACCTGCTTGAGACAGAGTG
TAACTTTTTATTTACAGATAACTTTTCTTTCAATACCTATGTTCAGTTGGCTCGGAATTACCCAAAGCAAAAAGA
AGTTGTTTCTGATGTGGATATTAGCAATGGAGTGGAATCAGTGCCCATTTCTTTCTGTAATGAAATTGACAGTAG
AAAGCTCCCACAGTTTAAGTACAGAAAGACTGTGTGGCCTCGAGCATATAATCTAACCAACTTTTCCAGCATGTT
TACTGATTCCTGTGACTGCTCTGAGGGCTGCATAGACAT

Exon8
AACAAAATGTGCATGTCTTCAACTGACAGCAAGGAATGCCAAAACTTCCCCCTTGTCAAGTGACAAAATAACCAC
TGGATATAAATATAAAAGACTACAGAGACAGATTCCTACTGG

Exon9
CATTTATGAATGCAGCCTTTTGTGCAAATGTAATCGACAATTGTGTCAAAACCGAGTTGTCCAACATGGTCCTCA
AGTGAGGTTACAGGTGTTCAAAACTGAGCAGAAGGGATGGGGTGTACGCTGTCTAGATGACATTGACAGAGGGAC
ATTTGTTTGCATTTATTCAG

Exon10
GAAGATTACTAAGCAGAGCTAACACTGAAAAATCTTATGGTATTGATGAAAACGGGAGAGATGAGAATACTATGA
AAAATATATTTTCAAAAAAGAGGAAATTAGAAGTTGCATGTTCAGATTGTGAAGTTGAAGTTCTCCCATTAGGAT
TGGAAACACATCCTAGAACTGCTAAAACTGAGAAATGTCCACCAAAGTTCAGTAATAATCCCAAGGAGCTTACT

Exon11
GGAAACGAAATATGATAATATTTCAAGAATTCAATATCATTCAGTTATTAGAGATCCTGAATCCAAGACAGCCAT
TTTTCAACACAATGGGAAAAAAATG

Exon12
GAATTTGTTTCCTCGGAGTCTGTCACTCCAGAAGATAATGATGGATTTAAACCACCCCGAGAGCATCTGAACTCT
AAAACCAAGGGAGCACAAA

Exon13
AGGACTCAAGTTCAAACCATGTTGATGAGTTTGAAGATAATCTGCTGATTGAATCAGATGTGATAGATATAACTA
AATATAGAGAAGAAACTCCACCAAGGAGCAGATGTAACCAGGCGACCACATTGGATAATCAGAATATTAAAAAGG
CAATTGAGGTTCAAATTCAGAAACCCCAAGAGGGACGATCTACAGCATGTCAAAGACAGCAGGTATTTTGTGATG
AAGAGTTGCTAAGTGAAACCAAGAATACTTCATCTGATTCTCTAACAAAGTTCAATAAAGGGAATGTGTTTTTAT
TGGATGCCACAAAAGAAGGAAATGTCGGCCGCTTCCTTAAT

Exon14
CATAGTTGTTGCCCAAATCTCTTGGTACAGAATGTTTTTGTAGAAACACACAACAGGAATTTTCCATTGGTGGCA
TTCTTCACCAACAG

Exon15 (stop codon boxed)
GTATGTGAAAGCAAGAACAGAGCTAACATGGGATTATGGCTATGAAGCTGGGACTGTGCCTGAGAAGGAAATCTT
CTGCCAATGTGGGGTTAATAAATGTAGAAAAAAAATATTATAAATATGTAACTAACGCCTGTTTGTGAAATTAGC
TTATCAGGCTGAAATTAAAGCCATGCAAAAGAAGGTCTAGGTCCATCAAGGAAATTCCCCTCCGTTTTCCTTTGT
CATGGGGTTTATGTTTTATTTCAGATTTTATTTGTGTGACTTAGAAATTCCAGGAACACAATTAGGATATTTTCA
TACACATAGGGTATCTTGTTCACTGCTGTGCTACTTTACATGAGTAGGATGGAAGTGTATATTTTATATGAAATA
CCACTGTACAATTTATAATTTATTTACAAATTATATATTAAGAGAAACAAATGTCA

FIG. 5d(i) CONT'D

CLLD8 Peptide Sequence

MGEKNGDAKTFWMELEDDGKVDFIFEQVQNVLQSLKQKIKDGSATNKEYIQAMILVNEATIINSSTSIGASQKE
VNAQSSDPMPVTQKEQENKSNAFPSTSCENSFPEDCTFLTTGNKEILSLEDKVVDFREKDSSSNLSYQSHDCSG
ACLMKMPLNLKGENPLQLPIKCHFQRRHAKTNSHSSALHVSYKTPCGRSLRNVEEVFRYLLETECNFLFTDNFS
FNTYVQLARNYPKQKEVVSDVDISNGVESVPISFCNEIDSRKLPQFKYRKTVWPRAYNLTNFSSMFTDSCDCSE
GCIDITKCACLQLTARNAKTSPLSSDKITTGYKYKRLQRQIPTGIYECSLLCKCNRQLCQNRVVQHGPQVRLQV
FKTEQKGWGVRCLDDIDRGTFVCIYSGRLLSRANTEKSYGIDENGRDENTMKNIFSKKRKLEVACSDCEVEVLP
LGLETHPRTAKTEKCPPKFSNNPKELTMETKYDNISRIQYHSVIRDPESKTAIFQHNGKKMEFVSSESVTPEDN
DGFKPPREHLNSKTKGAQKDSSSNHVDEFEDNLLIESDVIDITKYREETPPRSRCNQATTLDNQNIKKAIEVQI
QKPQEGRSTACQRQQVFCDEELLSETKNTSSDSLTKFNKGNVFLLDATKEGNVGRFLNHSCCPNLLVQNVFVET
HNRNFPLVAFFTNRYVKARTELTWDYGYEAGTVPEKEIFCQCGVNKCRKKIL

FIG. 5d(ii)

FIG. 6

bA101d11.01116

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   1 atcctttccc cctaccaatg gggtaatcag aaagtggtca atactaaatc
  51 caaatgaagt cctttaattg caccatcaga agcagaaagg gtgatttgag
 101 aataacccag tgtattccgt ggctacataa aaaagatgat ttgagaataa
 151 cccagtgtat tccgtggata cataaaaaag atgatttgag aataatccag
 201 tgtattccgt ggatacattt gtagtgaagt ttggtggctt gcttagaatc
 251 ccagctcagc gtggccaccc ggtttgtgaa gcgctgagct ccttggctca
 301 ggacacgctc cttcacctca gacccactca tgtctgtttc ttctgcgcct
 351 ttttctccgt cccatagacg gtggcatttc tcagggcttt gtcttcaacc
 401 cccttccctt gccactcaac ctgcctccct ggggccctca cccaggcatg
 451 tggtttctgc ttcttccagc gctgacagtg cccttcctgg gagtgctggc
 501 tgtgggcaga gcctgtgcgc ccgtgcgttt gtgcctcgcc tgtttggtcc
 551 tcaggcagtg tggcgggcag ggcatgaaac agcccctggt atgcaagtgg
 601 agacagaggc tgggagagag ccggtgccct gcctaaactc acgcaagcag
 651 gaagaggtaa gaccaggatt tgaacccggg agggcgagat gccatgtctg
 701 agctcttttt ggagttttgt cttcctggat gttctgcaca ggcacagccc
 751 gtgtggggag aaccccgccc tagacccctc cctgacttcc ctcccaacgc
 801 ccacttccct cttggactca accaccagcg tctccacatg catccaatca
 851 ccgtgaccaa aactccattt ctccttctcc cctgcagacc gagcaccctc
 901 tgggccctgt tctgtttccc cccaaggtac tcctgtcatc tgtggatttt
 951 tctgtttttt tgataaagca ttctgaaata aatcaaagcc accatagaat
1001 ttcagatacc atcatcacac ttttcaatac gaacaataat tcatctaata
1051 ctctgcttca cattcctcca attatcctag aaatactgtt tttcctgttc
1101 atttgctctg tttttctgga atggcttttt gtgcccctgt gactatttga
1151 gtctgtgaca ccaggtgacc ccaccctaat gtgtgctaag aatttgatgt
1201 agaaaataaa ataatattca aagcaaaggg atataacctt atgccagtgg
1251 ttctcaattg gggacaattt tgtctctggg gatacttggc aatgtctgga
1301 gacatcttac attgtcacgg tgcaagggag ctcctggtat ttaattgtag
1351 aggctgtgag gtgctgccaa acgtgccaca aagtacaggg caggcctcgc
1401 aaagactcat ccagcccacg atgtcaattg tgcagaggct gggaaactgg
1451 cctagaagtg tcacaggaca ctggccacaa gcccacacaa aggaggacct
1501 ctctctactt ttgttgtttc tactgtttgt tgaacattta ctaaatgcca
1551 gtcagtatcc tacacactct ggatacaaca cctcatttaa tcccaaaaca
1601 actctgagag ccatgtattc cataccatta cccccatttt atagatgaga
1651 aaattggagc ccagagaggg taagcccatc gtccagggtc accaagctca
1701 ggacaagaga ttacaacact ggcctctgaa aagactcact accaccttag
1751 gagcaagtgt tagaggaagg cgaggaggag ggtgaggaag aacacgagct
1801 gactgcagga ggcgtcaggc tgagctcctg cctggagggg ggcactgcag
1851 cctgggcagc agcaggagct ggtgctgtgt gtgtatgagt gtgtgtgtga
1901 ttgtgtgtga ttttgtgatt gtgtgtgatt ttgtgattgt gtgtgtctgt
1951 gtgtatatgt gtgattgtgg gtaccgagcc gaattcgtaa tacagtgata
2001 ttttcccccc ag
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FIG. 7

bA236m15.00303

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   1 gaccctctgc ctggcaacca ccccgtttga gaagtgagga gcccctccgc
  51 ccgacatttg ccccgtttaa aaagtgagaa gcctctcctc tcgcccgccc
 101 ccccttttgg gaagtgagga gcctttctgc ccggccaccc ccccgttcgg
 151 aaaggaagtt gggggggtca gccccccccac ccggccagcc gccccgtccg
 201 ggagggaggt gggggggtca gccccccgcc tggccagccg ccccatccag
 251 gagggaggtg ggggggtcag ccctccgccc ggccagccgc cccgtctggg
 301 aggtgagggg cgcctctgcc cggccgcccc tactgggaag tgaggagccc
 351 ctctgcccgg ccagccgccc cgtccgggag ggaggtgggg gggtcggccc
 401 cccgaccggc cagccgcccc atccgggagg gaggtggggg tgtcagcccc
 451 ccgcccggcc agccgcccca tccgggaggg aggtgggggg gtcagccctc
 501 cgcccggcca gccgccccgt ctgggaggtg aggggcgcct ctgcccggcc
 551 gcccctactg ggaagtgagg agcccctctg cccggccacc accccgtctg
 601 ggaggtgtgc ccagcagctc attgagaacg ggccaggatg acaatggcgg
 651 ctttgtggaa tggaaaggca ggagaggtgg ggagaggatt gagaaatcgg
 701 atggttgccg tgtctgtgta gatagaagta gacatgggag acttttcatt
 751 ttgttctgca ctaagaaaaa ttcctctgcc ttgggatcct gttgatctgt
 801 gaccttaccc ccaaccctgt gctctctgaa acatgtgctg tgtccactca
 851 gggttaaatg gattaagggc ggtgcaagat gtgctttgtt aaacagatgc
 901 ttgaaggcag catgctcgtt aagagtcatc accaatccct aatctcaagt
 951 aatcagggac acaaacattg cggaaggccg cagggtcctc tgcctaggaa
1001 aaccagagac ctttgttcac ttgtttatct gctgaccttc cctccactat
1051 tgtcccatga ccctgccaaa tccccctctg tgagaaacac ccaagaatta
1101 tcaataaaaa aataaattta aaaaaaaaaa aaatgactag tcaatgtcag
1151 aatgttaaga cctgatccac ggtggttcat gcctgtaatc ccagcacttt
1201 gggaggccaa agctggtgat cacttgaggc caagagttca agaccagcct
1251 ggccaacatg gtgaaagccc atctctacta aaaatatgaa aaattagctg
1301 ggtgtggtgg ctggtgcctg taatcccagc tacttgggag gctgaggcag
1351 gagaatcgct tgaacccagg aggcagaggt tgcagtgagc caagactgca
1401 ccactgcact ccagcctggg ccacagagca agattccatc tcaaaaaaaa
1451 aaaaaaaaga aaagaaaaga aaaaaaatac ctgtcccttt cacctcctca
1501 ggggacatct ctgaagagtc atcccagctt tagaactccc cacagggttg
1551 gctgagggct ggttgtgact acactgcagc ccactttctc tttctgccag
1601 ttttgcttcc atccttttcc tccacaggtc ccaagagcat ctaccattga
1651 aaaggcatta aataaccaag tggaatgact cagccagttg atgtcagcca
1701 gctttttcat cagccaccct agtcctggca caatggattc atagaggaga
1751 catggaagca aaggaggcta tccatgggcc caactgcatg atgtcccact
1801 taccattgtt aatctagcta ctgtcacagc caaataatca ccctgacacc
1851 aacagaaact gttgctgaaa ctcagtacaa caatatccct tgaagatacc
1901 aaccagccac ttgatggcaa gttgacccta ttgaactctt tccataatga
1951 aaggagcagc cattcatttt cacaggaata ggcaggtatt ctgtgtatgg
2001 gtttgccttt cctgcctgca gtctcatcaa acatgaccat ccaagggctt
2051 agctgcattt aatccaccaa ggtggcattc cacatatcat tgcagcagac
2101 caagggacca gctttacaac aaaggacata tagcattggt cacatgacca
2151 tggaatccac tggacctatc atatggcaca ccacccaagc tactggccta
2201 ataagcaatg gaacagcctg ttgaaagctt ggctaaagtg ccagcttgga
2251 aatgataccc tgtgaggata aagcttggaa tgcttttata ctgttggtgg
2301 gagtgtaagt tagtttgacc actgtggaag acagtgtggt gattcctcaa
2351 agatctagaa ccagaaatac catttgaccc agcaatccca ttactgggta
2401 tatacccaaa agattataaa tcattctact gtaaagacac atgcacacat
2451 atgtttactg cagcactatt tacaatagca aggacttgga accaacccaa
2501 atgtccatca atgatagact ggataaagaa aatgtggcac atacacacca
2551 tggaatacta tgcagccata aaaaagcatg ggatcatgtc ctttgcaggg
2601 tcatggatga aactggaagc catcattctc agcaaactag cacaggaaca
2651 gaaaaccaaa tatcacagtt ctcactcata agtgggagtc gaacaatgag
2701 aacacatgga cacagggagg ggaacatcac acaccagggc ctgtcggggg
2751 gtgggggggca aggggaggga gagcattagg acaaatacct aatacatgtg
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2801 gggcttaaaa cctagatgac aggttgatgg ctgcagcaaa ccaccatggc
2851 acatgtttac ctatgtcaca aacctgcaca ttctgcacat gtattccaga
2901 acttaaaatt taaaaaaaat ttttttaaa aagcactacc ctccaggatg
2951 cagtaatgcc tgaagtcagt caccattata tagtgcagta tccccaagag
3001 aatacctggg agatgaatcc atggtgtggg agcagcagtg tccccacttg
3051 ctatcagtcc cagtgaccca gttaaagaat ttatgttttc atcctcacaa
3101 atgtagccca cagggtcgaa ggtcttggtt tccaacaggg aaacatttcc
3151 accagggaac acagcaagag tcttcattga actttaagct acctcatcat
3201 gcaggcactt tgggcctttc atgccaaggg ccagcaggca aggaaaggat
3251 cccagttggg gtgattgact cttatcatca agaagcagtc cagctgttgt
3301 tacacaatgg aggcaggaag catatgtttg atacccagat cattgacttg
3351 gacatctgtt agtaccagct tggccaattt tgatggcaaa tggacaagtg
3401 cagcagctac accctgagaa ggtacggcaa atgggacaga atgcctcagt
3451 tttgagagtc tgagtcacct cactagaaaa gtcacctaaa ccttcacagg
3501 gacttgtcga gcagagggtg gggggatgaa tatcagctat agcctcaaga
3551 ccagctgcag ctgcagggag gctgtagttc atcctaccaa ccctcctttt
3601 acaagtcatc cccaggaaga gaggcccacc agtgtcccaa aggagccact
3651 cccagaattc ttgtaaagaa agtagatctg agtgacactt gctgtattag
3701 gctgttctca cattgctata aagaaatatc tgagacttgc taatttataa
3751 agaaaagagg ttttgttggt tcacggttct gcaggcttta caggaagcat
3801 agcgctgttt ttccgttatg gtggaaggtg aaggggaaac aggcaagtca
3851 catggtgaaa gcaggaggaa gtgaagggaa tggggtagat gccacacact
3901 tttaaaactg ccagatctca tgtgaactca gagcaagagc tcacttatca
3951 ccaagaggat ggcgcaagcc attcatgaag gacccaccgc accctccccc
4001 gtgatcccaa cacctctcac caggctccac cttccaacat tggggattac
4051 atttcaacct gagatttggg tggggacaaa tatccctatg ctatcacgtg
4101 ctgtggactg ccttgcctgg gttgtagctg tcatccctct ggggatggct
4151 tcagctgaag agagctgcct cagcgtaagg cctgtgccga acagctagtg
4201 tacggcgact gagtgatgcc caatcctatt tccttttgtt caatgggtgt
4251 tgattagagt gccccctcgt aaacttccta tgtgctaatc tccatctcgc
4301 agttggcttc cggggaacat cttatctgtg acagtctgtc cagtgtagat
4351 tacagtttgc agaagacagc aaacaagcaa agtagatttg tgatttgtac
4401 actgaaggaa atgaacaaga tgcaatgata gcagataaca gggaggtgta
4451 cctggaagag gtgacactta agccaagaac tataaacaga tagatgccag
4501 ccatgtgaaa agcaggtagg agagtgtgtc ccagaaagag aaacagttct
4551 gataaaagcc gatcgcaaag agtcaggcat gtttaagtac cacccagagc
4601 tttgtaatct ttttaaaagt ttttctgtgg ccaggcgcgg tggctcacac
4651 ctgtaatccc agcgccttgg gaggtcaagg cgagtagatc acctgaggtc
4701 aggagtttga gaccaacatg gcaaaaccct gtctctacta aaaatttaaa
4751 aattagccgg gcatgatggc gcatgcctgt aattccagct actcagaagt
4801 ctgaggcacg agaattacct gaacctggga ggtggaggtt ggagtgagcc
4851 gagatcacgc aactgcactc cagtggtgtg atcacatctc actgccgctt
4901 tgacctcccc aggttcaggc gatctcccac ctcagcctcc caagtaactg
4951 ggactacagg catatgccac catgccccac tagtttttt tgtagagacg
5001 gtttcaccat attgtccagg ttggtctcaa acttctgggc tcaagcaatc
5051 catccaccct ggcctcccaa agtgctagga ttacagatgt gagccaccat
5101 gcatagccta aaaggtttta tttcaaatgc aatggaaagc cttcaaaagg
5151 ttttaagaca agagagtaac atgctatgat ttacattttt aaaaaattct
5201 gtctggatac tgtgtggaaa acagattgga tgggggggaac cattaagaag
5251 gttatttgca gggtggggtg tggtggttca cacctgtaat cccagcactt
5301 tcggaggcca aggtgggtgg atcacgagat caggagatcg agaccatcct
5351 gaccaacatg gtgaaaccct gtctctacta aaaatacaaa aatcagccag
5401 gcgtggttgt gtgtgcctat agtcccagct attcaggagg ctgaggcagg
5451 aggctcactt gaatccagga ggtggaggtt gcagtgagcc aagattgtgc
5501 cactgcactc cagcctgggc gacagagcag gactccatct cgaaaaagaa
5551 atagaaatta aaataaaata aaaatgttat tgcagtatca aggaaagatg
5601 cccacccaaa gtctgtccct tcgcactaaa ccatagtcca aatgcccaag
5651 accttggaat tccatgccca gacaactcca acccacttcc aagatttgca

FIG. 7 CONT'D

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5701 tgggcctctt ccctaggtcc ttctcctcaa cagcagactc cacacaccta
5751 gagccatggg gtggcctgtc tgtttgtggg gaatgtggac agagtttgga
5801 agagaagtat ccacaagcat gtgggtgaag ccccttgcag tgccagatga
5851 agccaagatt ggaatggagg gagatgaggt gaggggaaag gggccagggt
5901 ggtaattgtg gggaaaagca agagagatca gattgttact gtgtctgtgt
5951 agaaagaagt agacatagga gactccattt tgttctgtac taagacaaat
6001 tcttctgcct tgagattctg ttaatctatg accttactcc caaccctgtg
6051 ctctctgaaa catgtgctgt gtcaaactca gggttaaatg gattaagggc
6101 ggtgcaagat gtgctttgtt aaacagatgc ttgaaggcag catgctcgtt
6151 aagagtcatc accactccct aatctcaagt atccagggac acaaacactg
6201 cggaaggcca cagggacctc tgcctaggaa agccaggtat tgtccaaggt
6251 ttctccccat gtgatagtct gaaatatggc ctcgtgggaa gggaaagacc
6301 tgaccgtccc ccagcccgac acccgtaaag ggtctgtgct gaggaggatt
6351 agtataagag gaaggcatgc ctcttgcagt tgagacaaga ggaaggcatc
6401 tgtctcctgc ccgtccctgg gcaatggaat gtctcggtat aaaacccgat
6451 tgtacgttct atctactgag atagggaaaa accgccttag ggctggaggt
6501 gggacatgcg ggcagcaata ctgctttgta aagcattgag atgtttatgt
6551 gtatgcatat ctaaaagtac agcacttaat cctttacctt gtctatgttg
6601 caaagacctt tgttcacgtg tttgtctgct gaccctctcc ccacaattgt
6651 cttgtgaccc tgacacgtcc ccctcttaga gaaacaccca cgaatgatca
6701 ataaatacta agggaactca gaggctggcg ggatcctcca tatgctgaac
6751 gctggtcccc cgggtcccct tatttctttc tctatacttt gtctctgtgt
6801 ctttttcttt tccaagtctc tcgttccacc ttacgagaaa cacccgcagg
6851 tgtggagggg caacccaccc cttcagtaat cactccctac actgccaagt
6901 tccaatatgg aacccctagg atttctaaat tcaaggtatg gccatccaag
6951 tcactaaaaa gctgtatctg tcaagatagg aggataggct gggtgtggta
7001 actcacacgt gtaattccga tgctctggga ggctgaggct ggaggatcat
7051 ttgagcccag gagtttaaga ccagcctgag ttacatagcg agacccccat
7101 ctctaagaga ataaaaaata taattcgcca ggtgtagtgg tgcatgcctg
7151 tggtcccagc tactcaggag gctgaggcaa gaggattgct tgagcctggg
7201 aagttgaggc tgcagtgaac tgtgattgtg ccactgcact ccaacctgat
7251 ggatgacaga atgagactgt gtcttaaaaa aaaaaaaaaa ggaggataga
7301 acatatttta tttaacaagt tattcgcttg atttctgact taaaaatttt
7351 tagacatatg gtatccccca tttgtaattt tgcactgggt gctacggatg
7401 ttcaggatag ccccgaaagt cacgtcatct ataaagaaac aacaagagac
7451 cgaaagctgg tttcttattt caaacagtag ataatgcaca gaggataatg
7501 cagtatcttc aaaatgaaag ggaaaatttc tgtcggttta gaattccctg
7551 tctagttaaa ctggtattca aaagtgagga taaaataaag acattatcaa
7601 accaagacta agagaatttc ccactcacag acccttgctg aaagaagtcc
7651 tgaaagatgt agtttattta tttattttga gacagagtct tgctctgtca
7701 cccaggctga agtgcagtgg tgcagtcttg gcttactgca acctccgcct
7751 cctgggttca agcaattctt ctgcctcagc ctccagagta gctgcgacta
7801 tgtatgcacc accgtgcctg gctaattttt tcgtattttt agtagggacg
7851 gggtttcacc atgttggcca ggctggtctt gaactcctga cctcaagtga
7901 tctgcccgcc tcggcctccc aaagtgctag gattataggc atgagccacc
7951 acgcctggcc aggatgtagt ttagaaagag gaaaaataaa cccagcagaa
8001 aggatcagta tgtgaggctt aatgatgagc aaagaaatta ctgatttta
8051 gaggataagc acagagtgga actagactag tacctagcaa tcaagtgaaa
8101 ggtgagaggc aagattcaca gttaaaacag tctaagatct ttatgatgta
8151 aggtatacaa tttaaacttt ttcagctata acttttagt ttttttttat
8201 ctcagaaaaa aatatggaat gcttcacgaa ttttttattt ttttgtgtgt
8251 ggagatgacg gggtctcact atgttcacca ggctggtctt gaactgctgg
8301 cctcaagcaa tccttctgcc ttggcctccc aaagtgctag gactacagat
8351 gtgagccacc ttactgggtc tcagctataa attttaatat ttttaaagta
8401 actatgttaa gcaaatatgc aaaaagaaag aaaaaaagtg aatagttagg
8451 atgaaagacc ccttccccca gaaaagcaaa acaagtttag ttgttagtac
8501 atataaaata gtcctcattt caatatgaga aaaggcactg attttttttt
8551 ttttttttg agacggagtc ttgctctgtc gcccaggctg gagtgcagtg
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FIG. 7 CONT'D

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 8601 gcataatctc ggctcactgc aagctctgcc tcccgggttc acaccattct
 8651 cctgtctcag cctcccgata gctgggacta caggtgcccg ccaccatgcc
 8701 cggctaattt tttgtacttt tagtagagac gggggttcac catgttagcc
 8751 aggatggtct tgatcccctg acctcgtgaa ctgcccgcct cggactccca
 8801 aagtgctggg attacaggtg tgagccaccg cacccggcct actaatttat
 8851 tttttgtaaa actcctctaa cccaaaccac tggctataaa atactaccac
 8901 ctctgccatc attgtccccc aaatacaagt tatttttcat ctgtgaagga
 8951 agctttatga gagctattgc actttattct tataaaactc catgaaagat
 9001 agacattaaa atgtttgcag aaatctcata aacttggctt ttaaatgaat
 9051 gagtcagtca tcaacagcta tttgcacaaa actttactct tttctctgag
 9101 caatacaaag aaaacaggac agtccctccc atgaaggagc ttaaaatctg
 9151 atttggcaga cgcaagctgt ataaactcac ctggaaataa aacctgggat
 9201 agaagacagc aaatagtaaa aggctgcaat tggtataacc cttacatatc
 9251 ttggaaggct ttgactcaat acatgaaatt tgagctttaa gagaggtaga
 9301 atttcgttag agaaaactgg ggactggcat aagcataaag cactaaaaca
 9351 gagaaaggtg ttagagccaa gacagaagat attttcaaaa aagaagggta
 9401 gctgggtgtg gtggcacatt tctgtagtct tgtaactgcc cagtgggttc
 9451 gttttccttg ctgcccagat agagctgatt tatccagaca ggggagtcat
 9501 gatacagagt ttaactcaca cagagctggc tgacaggaga ccagagtttt
 9551 attattactc aaatcagtct cttcaaagat ttagagacta gggtttttca
 9601 aagacagttt ggtgggtaca gggccagtga gtcgggagtg ctgattggtt
 9651 ggatcagaga tgaaatcata gggagtcaaa gctgtcctga gctgaattgg
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 9751 gttcatcaga aatgcaaaaa cccaggccgg gcgcggtcac tcacgcctgt
 9801 aatcccagca ctttgggagg ccgatgtggg tggatcacaa ggtcaggaga
 9851 tcatgaccat cctggccaac atggtgaaac cccgtttcta ctgaaaataa
 9901 aaaaaaaaaa ttagccgggc atggcgacgt gcacctgtag acccagctac
 9951 tcaggaggct gagacaggag aatggcgtga acccgggagg cggagcttgc
10001 agtgagctga gatcatgcca ctgcactcca gcctgggcga caaagcgaga
10051 ctccgtttca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa ggcaaaaacc
10101 cgaaaagaca tctcaaaagg ccagtcttag gttctacaat agtgatgtta
10151 tctgcaagaa taattgagga agttgctaat cttgtggcct ccacaataat
10201 ggttggtaat attttagcta agcctgtatc ttaatagaat ccaggcccct
10251 cccatcctcc taacttgacc ttccattagg tttacaaggg cagtttagtt
10301 ttgggggagg gctattatcg tttaaactat aaactaaatt tgccccaaag
10351 ttaccttggc ccacatccag gaatgagtga agacagccag cctgtgagac
10401 tggaagcaag atggagtcag ccatgtcaga tttcttttac tgttgtaatt
10451 ttgcaaaggc agtttcagcc cgagctactc aggaggctga ggcttcactt
10501 gagtccagga attcgggctg tagtgcacta tcatggtggc tgtgaatagc
10551 tgctgtactc cagcctgggc aatgtagcag acccagtctt taatttaaaa
10601 aaaaaaaaaa aaaggacata tcctaatctg tcatgggagt agagttaaaa
10651 aaaaaggggg gggggtaatc attatgtgaa atactgagag aaatcattta
10701 atgaatcata atatggactg aagtaaacac aaggatgaaa taattgaaaa
10751 tactgttttc aatatgacac caacttcagt attttatctc atttcccttc
10801 ttgtatatgc cattaaattt tcaaaaaatg tagcaaatat aaatacaaga
10851 tgttgacttt ctgtgagtta catatatgaa tagcttacag ttttactgct
10901 tctacataca actttatttc ctagactttc tctagcttaa aaaaatcctg
10951 cagacaagat caccattata ttgcttgtgt tttaagttca gggctgtagg
11001 cttctggttt gtaatactga gagaaacgct attaatagta ttcctaaagg
11051 cataaagctt tcctccaaac catgactctc ggaccaaggc tcctttcatt
11101 ttgtggccct gccatcttca acaagtggct tccagggtct ttgcagaagg
11151 ggaaagaaca aggaggacca ccgtgggaga gctgcgtgtg agcttagcct
11201 ggaaatagca cgcttctctt ccttttgtta cagtaggtag taggcagaca
11251 tgagcagggc aggaaagcac ccccctacca caaccaggaa tgtcaggaaa
11301 ccatcaggta atggtcaggc ggttgttaac tgtctctcta aaataataat
11351 tggttgcagc cagcgccaga gaaaggcagg ctctcaataa atagaaaaca
11401 cccgaaactg gtgatcagca gcttcctggt aagatctcag gagttgggtg
11451 agtgggctca agcatgaaaa ctaaggcaaa atggcagagt ttaaccagta
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FIG. 7 CONT'D

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11501 tatgaccttc ctctagaaca ctcaactggt aagggaaaaa cgcctcaagt
11551 gagcatgtgc acagcttcag taaacacact gcacatgcgg ctcctcccaa
11601 gtgctggcag gccagtgcga atgcagacag cccaccccaa aggaagaact
11651 gggagaagag atgttaccca ctggaagcat gccagtgtat aaagccccga
11701 gtcaaaggtc aaactgtaca cttgaatctt tcacgttacc tgcttggccc
11751 tcttccaagt gtacttttt aaaattcctg ctctaaaact ttttaaagac
11801 tttcactcct gctctaaaac ttgcctcagt ctctccctct gccttatgcc
11851 cctcagtcaa gttctttctt ctgaggtggc aagaattgag gctgctgcag
11901 acctgtacag attcactgct gctaacactt tcacattcca ctgatcagga
11951 ctcagttgca tggccacagc taacttaagt gaagatggaa aatgtggttt
12001 aactgtttgc tcaggaagaa aaagaaacag tttagtaaac agttggccag
12051 tctctgccat acatacgttt ttcccattta atcctaacaa ccctataaga
12101 tatgtgcagt aacttatccc actttatgga tgaggaaatt gaaatctttt
12151 ttacgtgtac aaatttatgg ggtacatgtg aaatttagtt acatgtatat
12201 aatgtggact aatcaagtct cgtttttttt gttttgcatt tttttttgtt
12251 tgtttttttct ttttttgag acagggtctt gctcatggct cattgcagcc
12301 ttgacctccc aggcttcagc aatcctccta tctcagcttc cctggtagct
12351 aggactataa gtgcatgcca ctgtgcctgg ctaatttttt tatttttgt
12401 aaagacggag tttcaccatg ttgcataggc tggtctctaa ctcctaaact
12451 caaaccatct gcccacctgg gtctcccaaa gtgctgagat tacaggtgtg
12501 agccaccatg cctggaaaga aactgaaatt ttgataggct gagtaccata
12551 cctaatacct cacagttaat aaatggcaga actcaaactc aaacctaggc
12601 agtccaactc cagaaaccat attctttaaa aagctactgt aacatgactg
12651 atattccttt tactgaagaa gaatatttaa gccttttta attgtaagag
12701 gggtatgata attatggaac tttaagtaaa tacaaaccca tcattttgga
12751 gaagatgata ctgagattta gaggcggaat gttctactga aggttaaatc
12801 attgctgcct atgtaccata cgatgtaaag taacattttt ttaaagagaa
12851 tgcaatcttg gccgagcgca gtgggcctgt aatcccagca ctttgagagg
12901 ccgaggtggg cggaccactt gaggtcagga gttcaagacc agcctggcca
12951 atatggtgaa accccgtctc tactaaaaat acaaaaatta ggccaggcac
13001 ggtggctcac acctgtaatc ccagcacttt ggaaggtcaa ggcgggtgga
13051 tcacctgagg tcaggagttc aagaccagcc tggccaacat ggagaaaccc
13101 cgtctctact aaaaatacaa aaaaaaaatt agccaggtgt ggtggcacat
13151 gcctgtaatc ccggctactt gggaggctga ggcaggagaa tcacttgaac
13201 ctgggaggcg gaggttgcag tgagccaaga tcatgccatt gcactccagc
13251 ctgggcaaca agagtgaaac tccgtctcaa aaaaaaaaat tagccaggca
13301 tggtggtggg cgcctgtaat cccagctatt cgggaggctg agacaggaaa
13351 atcacttgaa accaggaggt agaggcttca gtgagccaag atcacaccac
13401 tgcactccag cctgggggac agagcaagac tctgtctcaa aaataaaaat
13451 aaaaataaaa aaaagaaaat acaatcttca caacttaata acttatgtta
13501 ttctttctaa aaattaattt cctaaaccat gtagtttaat gtgatttaat
13551 gtagttaaat actagcatta aaacttgttt cttgaagggc gcagtggctc
13601 acacctgtaa tcccagcatt ttgggaggct gaggagggca gatcgcctga
13651 agtcaggagt tcgagaccag cctggctaac atggcgaaaa cccatcttta
13701 gttaaaatac aaaaattagc tgggtttggt ggtgcatgcc tgtaatccca
13751 gctgctcggg aggctgaggc acaagaattg cttgagcccg ggagatggag
13801 gttgtagtga gccgatatcg caccactgca ctccagcctg ggctacagag
13851 actctgtcaa aaaaaaaaga aaagaaaaga aaagcagaaa cttgtttctt
13901 gatgaagttt gttttcctgg gatcacacac agatctccca cggtggtcct
13951 tcttgttctt tctccttctg caaagaccct ggaaaccgct tgttgaagat
14001 ggcggggcca cagaatgaaa ggagccttgg tccctgagtc acggcttgga
14051 ggaaagcttt atggcgttta ggaacactat tgtttgttgg tcctgaagag
14101 gaagtacttc acagagcaag cctgccacca tgtggcgcgg gcccaaacct
14151 agcatcagtt aaaggttcat tctcatttac ttggttgcct ctggttcact
14201 tactaaccaa tctagattta atgctgtcta ataagaaatt aatacccagg
14251 tgtattctat aggtttaagt agtttttaat ttcaagatac atttcttcaa
14301 ttctgaaatt attgcaatat ttccaaactg gctacaggag tgaccacaac
14351 atttataata tgatccaggc acattcacaa gaggactact tcagtgcatc
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FIG. 7 CONT'D

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14401 acaaacatgg aaacaaactc agcaatttgt aggatttatc tcagttcact
14451 caaaagttgg tcaatgagcc agattagaag gcagaattcc ggccaggtgt
14501 ggtgggtcat gcctgtaatc acagtgcttt gggaagctga ggtgggagga
14551 ttgcttgagc ccaggaattt gagaccagcc tgggcaacag ggtgagacct
14601 tgtcgctata aaaaataaaa aaataagagg cagaattcct tggaatggaa
14651 acaggtagtg tgaaggactg ccaaaaatgg atgaaaaacc ctcatggaag
14701 gagagtcaga acttaacagt ttcctagagt tttaacaccg tataagctca
14751 ctatgttcta gcatgccagg ctgacgtttc ccagaactct ctctacattt
14801 atcaagacag gaatgacatc ggaagttgtt tgcaagacta taggtctagc
14851 aggtggctaa gaggaagtct ggtattgctg ctgcgtctat ttttatgtat
14901 ttattcattt atttttaag acgaagtctc actctgttgc ccagccagga
14951 gtgcagtggt gcaatctcag ctcactgcaa cctccacctc ctgggttcaa
15001 gcaattctcc cacctcagcc tcctgaccac ctcccaggtt caagcaattc
15051 tcctgcctca ccctcccgag tagctgagat tacaggtgcg tgccaccaca
15101 cctggctaat tttgtatttt taatagaggg gttttaccat gttggccagg
15151 ttggtgtcga actcttggcc tcaagagatc tgcccacctc agcctcccaa
15201 agagctggga ttacaggcat aagccactgt gcctggcctt ggtatagctg
15251 ctgcttctaa cacttgcttc taatgattgg tgggtggagg cagcagtact
15301 cacattctga tacagttatt aaatgttcct ttttttcttt ggtcctatta
15351 ctacttcttt ctttttctac cactgcaaac tctgaaatat ctattacaca
15401 taaaatgtca actataactc acctgatttc actgtagaaa gcaattaaaa
15451 gggaaaaatt gtatttactt gagggtgaaa aaaaaaaccc acatcatcct
15501 tttctttatg ttccttttt acactgatat ataaacttgt tatttccacc
15551 taactaaatt gattcattta atccagtgac tgtggttaaa ttgaaaaaag
15601 gtttgaaaag agggggtgtc tatggaaacc caaacttctt cacactccag
15651 ctttttcact accttctcac ctccccagct tccacatttt cgcaagcatg
15701 ggtatatatg tcccaaggct gtggttccca ggggccaaaa gtatatgaat
15751 aagcctatat tatgtaaacc tttcatcttt taggacatgc tgtgccttcc
15801 atttagagca tttatcatct ccattctgat caccatgtaa ccagatatga
15851 tgggcccagt gatagcttcc ctagaagcct catcactcct tgttctagaa
15901 aggtcaggtg cagatggcct gactcagccc agctctagag actgggacac
15951 atctctggtt cttgttcatt cttctctttg gcctatgtgt tacaaatcag
16001 ccttccttat cattgaagta gtatgtatgg gcttaggaaa gagatcactt
16051 ccttttttctt aaagagctca ccatatggtc taatctaaac tagctcagca
16101 ggattctata gtgggatctg aggttttagt gaaattaaat gtgctattta
16151 gatgaatatt gtctagattc cctatttaaa ggaaaaatgg ttcctttcca
16201 tataaaataa atgtattgtt tctgtaagaa atttcttaca ttctttttctc
16251 taatcatctc tttgcaatat gtgatggata ttgctttttt ttttttaaga
16301 ggcaaggtct tgctcgcatg atcatagctc atggtggcct ctacctcctg
16351 ggttcaagtg atcctcccac ctcagcctag ctgagactac agcctacctg
16401 ggactacagg tgtgtgccac catgcctgac taaaaaaaaa attgtttttg
16451 tagagacagg atctcactat gttgcccagg ctggtctcaa actcctggct
16501 tcaagcaatt ctcctgtctt ggcttcccag agtgctggga ttacaggtgt
16551 gagtcactgt gcctggccaa gttattgcta aatattaact gaattacaat
16601 tgataaaaaa taatatccca cttatgttct aaaatattcc agactaaaat
16651 ataacatcct taaatattat ttgctattgt atactaacct ttacctatgt
16701 agccagattt cacaaatctt acaatataaa ttttccccaa gtcttctcca
16751 tgaattatat tcctttgtat atgaggaaaa acaaatggca actgctgttt
16801 ctttgtatgt gctcataatt gaatttaagg ggtcctcaaa cttataaagg
16851 atatctgtca agaacctaga gaaaatatta catttaatgg taaaacatta
16901 gaaacatcac cactgaagtg atgtatggat ttttacaaaa tatggtcaca
16951 aattctttgg caccccaccc attgagaggt ggcatctttg taccctccct
17001 ttgaattcgg atagacttaa cgatttgctt gcaaacaata aaatgcagaa
17051 taagtggtac acactgagaa gtgtggcttc tcaggctagg tcagaaaagg
17101 tgacacagat tcctacttgt tcactggaat acttggtctc agatccctga
17151 gcctccacat aagtggtctg actaccctga gaatgccatg ttggaaagag
17201 gccaactaac atgtagaggc catctgtaag cactccagtt gctagtctca
17251 ctgagccccc agctgacagc agcatcaact gtcagccatg tgagtgagcc
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FIG. 7 CONT'D

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17301 attctggaca tccagcctag gtgaaccgtc aggtgacttc atccccagct
17351 gacatctgac tgcagctgct tgagataccc taagtgagaa caatgtgatc
17401 tagcccttct tgaaatcctg accctcaaaa tcataagcaa aacaaaataa
17451 ttgttttaag ccactaaatt ttgaggtaat ttgcttcaca gcaatagtaa
17501 caaaaacaga caaggattag gaaagtatgc cctctgtcac tgctgttatt
17551 taatattcaa ctagaactta tggaccaata agtaaatgaa acgggaggcc
17601 taatgttgga aggaattaaa cacgaccatc gtttgcagac aatgattgtc
17651 tccatagaca agtcaagaga atccactaaa aaaacaatta gaacaaagaa
17701 gagttcagta taagtttaat ttaatatagg aaagacatat aaaaattaat
17751 aactaattag aaaatgtatt tagacaaaag cgccattacc aataacagta
17801 aaaaccctaa aatacttagt aataaagttt aaaaatacat aaaggctata
17851 tggagaaaat gtctaaagtt cactaaaggg cagaatttct aggaatagta
17901 tcatagaaga cattgggcaa tttcttccat agataatgat tataaaaact
17951 ggacaaattt cttaaaaaca actatttgtt ggtgtttttg ttagatgact
18001 cttgagaagg gtttactctt gaatgacgga tactgcatca ggtaaaaact
18051 aagagtttgt gacccctaag caggggggtca ctccccaaca ccctccagct
18101 ctagtggcag aaaaccacag ccataccagc ttgaggtgtc agagaataaa
18151 gtttaaggca gcagacaact ggatattcaa ggggggaatc ctgtaaaaat
18201 gagagccaga gccacagaag gactgaattg aaaagctgag tataagctcc
18251 gctcaaatcc ctgcctgcct gctaaactgc tgagacacac aagagacccc
18301 aggcagccca gtgaaaaagc aagcagagac tagagaggca tctacccttg
18351 tgagacagaa ctgctcctgg tgaggtttgt gagtttgctg cactgttgac
18401 ttaacatgca caaagctcag gtcttgcaga aagcaaaaac cttattggct
18451 tgaggtgcca ctgggcagaa cttggggctg gcagagcaac tggatattta
18501 ggaagaaagc aagggagctg tacagtaggt aagcttcaat acctgaatat
18551 aaattctttc caaatctgtg gctgacccta aactacacag gctcaggaaa
18601 gactcccagg cactaggcca aaaaagaagc aactggatcc tgagaaaact
18651 gtgcagaaga atacatcaac tactataaat tgctggggac agatttttca
18701 gtttaaatgc aggcaggtta actgcctact agaacaatat ggcaacaacc
18751 ctcagaagaa caaaacagaa tcttgagtgg gtataacatt actacaatgt
18801 ccagtgtttt ttgttttttg ttttcttgtt ttttttttt gagacggagt
18851 ctcgttctgt cgcccaggct ggtgtgcagt ggcgtgatct cggctcactg
18901 caagctccgc ctcctgggtt cacggcattc tcctgcctca gtctcccagg
18951 tagctgggac tacaggtgcc cggctaattt tttgtatttt tttagtagag
19001 acggggtttt accttgttag ccaggatggt cttgatctcc tgacctcatg
19051 attcacctgc ctcggccttc ccaaagtgct gggattacag gcatgagcca
19101 ctgcacccag cctacaatgt ccagttttaa accaaaaatt actagacatg
19151 caaagaatca ggaaagtgtt actactctca ggaaaaacaa aatcagtcca
19201 tagcaactga atcatagtgg gctcaaatgt tggattcaac agacaaagac
19251 ttcagagcag ctattgtaaa tatgttcaag agttagtaag gcacatgttt
19301 aaagaacata aggaaagtat ggcattactg agtgaacatg taggaaatgt
19351 taatagagaa atgaaaattc taaaaatgaa tcaagtagaa attctcaagc
19401 tgaaaagtat aatagctgaa agttccatga agaatacaaa ggaagacttg
19451 cataaatgga aaggcaacac atatttctag atgagaagtc tcaattgtgt
19501 aatgatgtca attctccaca aatcaatcta ttaaaagcta ccccaattac
19551 aattccaaca ttatttttcc accaaagtgt ttaatgaaat ttgaaaacat
19601 gatcttaatg ttcatatgaa aaagagagta cagactgggt gtggtggctc
19651 acgcctgtaa tcccagcact ttgggaggcc aaggtggagg atcacctaag
19701 gtcaggagct tgagaccagc ctggccaaca tggcaaaact ccatctctac
19751 taaaaataca aaaattagct cagtgtgatg gtgtacacct gtaatcccag
19801 ctactaggga ggctaaggca ggagaatcac ttgaacctgg gaggtggagc
19851 ttgcagtgag ccgagattgt gccactgcac tccagcctgg gcaacagagt
19901 gagactgtct caaaaaaaaa aaagtacatt aaaatgacca caagattttg
19951 taggtaaaat atagagggca ggagactttt cctatcaaat acaataacat
20001 taaagatatt cattaaacta atgtgatatt agcaaaagat ccacagatag
20051 aattgtggaa tggaatatag aaggcagaaa catctaaacc cacacataca
20101 tataaatata tgaatttagt gtacaataac agcgatactt caagccagaa
20151 aaaaagatag ctcatttaat aaataatgct tattaaattc atctaagttg
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FIG. 7 CONT'D

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20201 tttgttatat cggcataaag ttttctataa tatcctcctt gtcagctttt
20251 ctccagcttt actgaggtat aaactgtaca tgattcatgt atacaatttg
20301 gtgagtttgg acatatatat ccactcatgt taccataacc acaatccagg
20351 taataaatat atccatcact tcatcacctc caaaagtttc cttgtgtccc
20401 tttgtttatg ttttttgttt ttctgtggta agaacactaa atttgagatc
20451 cacccttta acacaatcct aagtatgcag tatcttattg ttaactatag
20501 gcaatatgtg tacagcagat atgtggactt actcagcttg aataaatgta
20551 actttatact tttaaagtac ttcccatgtc cctctccccc gatcctctgg
20601 taaccaccat tctgttgtct acttctacac cttcaactat tttcaatgtc
20651 tcacataagg ggaatgatgt agtatttgtt cttccgtgac agacttactt
20701 cacttagtat aatgtcttcc aagtccattc atgttatcac aaatgatagg
20751 gtttccttct ttttttttt ttttttagat ggagtcttgc tctgtcaccc
20801 aagctggagt gtctcagcct cccaagtagc tgggattata ggcatgcgcc
20851 accacgcctg gctaattttt gtgcttttag gagagacggg gtttcaccat
20901 attaggctgg tctcgaactc ctgacctcag gtgatccacc agcctcggcc
20951 tcccaaagtg ctgggattac aagcataagc caccacgccc agccctgggt
21001 tttcttcttt tttaaagctg aatatgccaa gtgcagtggc tcgcacttgt
21051 aatcccagca ctttgggagg ccgaggtggg cagatcacga ggttaagagt
21101 tcgagaccag cctggccaac acagtgaaac actgtctcta ccaaaaatgc
21151 aaaaattagc cagatgtggt agcacgtgcc tataatccca gctactcagg
21201 aggctgaggc cggaaaatca cttgaaccca ggagaacaaa aatgagccct
21251 tggacattta aaatataaca gcagaagtaa atattgtgat ggaaggattg
21301 gaagataatg ttgaagaaat ccagaaagta gagtgaaaag gcaaaggtgt
21351 aagaaaggaa agaaaatatt tttaaaatta gagactaagc agaatgcaac
21401 aatcaaataa taggagttcc agaaaaagag aacattaaaa atggagtgga
21451 ggccaggtgt gatggctcac atctataatc ccagcacttt gggaggccga
21501 ggatggtgga tcacctgagg tcagaagttc gagaccagcc tgggcaacat
21551 ggtgaaaccc caactgtact aaaaatacaa aaattagccc cgtgtggtgg
21601 agcatacctg tagtcccagc tactcaggac gctgaggcag gagaattgct
21651 tgaacccagg aggcagaggt tgcagtgagc ttgatcatgc cactgtacac
21701 cagcctgggt gacagagcaa aaaagctatt actgattaag cacattatac
21751 attatatcta cattaattta tttactcctc ccaacacctc tgagaggtaa
21801 ttttttttgtc cccatttata gatgtggaaa ctgaggctac ataagattaa
21851 gtgccttgcc tcagactagt tttgttgttt ttgttttttt aataaataga
21901 cacagagtct tgctaagtca ccaggattgg tctcaaactt ctggccttaa
21951 gcgatcctcc tgcctcaggc tcccaaagtg ccgagactat agacataagt
22001 caccacacca accagcttag ttttttttctt ttcacttcta aatattatat
22051 cattttgtca agaactactt ttatatatgt gaaaagggat caatacaaaa
22101 gctaagaaag aagcaagcac aactctattt ttatttattt atttatttat
22151 tttgagatgt agtcttgctc tgttgcctag gctggagtac agtggcacga
22201 tctcaggtca ctgcaacccc cgcctcccgg gttcaagtga ttctcctacc
22251 tcagcctcct gagtagctgg gattacaggc gcctgccacc acgcccaact
22301 aatttttgta tttttagtac agttggtgtt tcactatgtt gcccaggctg
22351 gtctcgaaca cctgacctca agtgatctgc ccaccttggc ctcctaaagt
22401 gctgcgatta caggtgtgag ccaccacacc cagccagcac aactctttct
22451 agaagggaag aatgacattg ccactattgg atgaagactc ccaggagaag
22501 atgatgaggt gaagagagtc tctgggtcag agtctgaatt tcactccctt
22551 gggagcctta caagagcccc ttctggggag gaccgtggac aaagccatat
22601 cttaggaagg ataggcctca gcatattggg gcaatattga cagaccttta
22651 gtgcaggccc agctctatcg tccagcagga atatggcctt gggaatgaac
22701 tactgtgcgc gatctacttc aagacacagc tccagtctca tgagtgagca
22751 aatcagaata cgtcttgcgg gttgaaggga gaatccttag ctggtcgtgg
22801 ctgtggggcc tggatcctgt gctgatgaag tttctccctt ccccttcatg
22851 caaaataaat actttgctca ttgatgcaca gggtaatggt aagtcatctg
22901 ggaaatccag ccaagtcaca agcactaatc ttagtttcta actatgaagt
22951 gaccttccaa cctccttcct aatcaagtta ggtttttttg gtttgttttt
23001 ctttttcctg caaagtaaaa atatccagtt caggaaatgt ggctgattga
23051 atagcagctg ccatggagga cctactttgg atattgaaac aaccttggaa
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FIG. 7 CONT'D

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23101 gaagatcaga aactcactcc catcagctcc tgttttgagg caggcctgga
23151 gctcatcacc cagattagtc ttggcctcca cattgtcctt cctgtatatt
23201 tttaggagaa agtatctggc cactgtttct ttttcctctc aatgctagga
23251 aacttcctgt aatattggaa aagtagaagt tgaagcggct tcagtgcaaa
23301 actaacattc tctggatctt tctcacgctg ttcggaaagt agatcaccca
23351 ctgttatttc cttttcctgg ctttttttt tttcctaaca gacaaagaga
23401 ggcactgcca cgatactatt tctgttcaga gggggagaga gagcaaaaag
23451 agacaggcag aaacattttc cccagccttg ccacattctt cactcagtta
23501 taaagaaacg cattgccaat aaaatagaaa acagaaatag caggaaaatt
23551 ctgaaagatg agctgtgctg taaatgtaaa acacaagcca cttaatgcat
23601 aatcattcaa aggacagttt gtaatgaaaa taaagacatt tcaaaagagc
23651 ccataatttg cttacattac attctgtatc taattgttat agtatgtttt
23701 attcctctta tacaagaaaa aatgttgacc tccctcattc atatggcatg
23751 cagatgcatt tgagcagggt tttttgggtt taataatgtg atagactggc
23801 tgggcactca tgcctgtaat cccaaccctt tgagaggctg gcaggcagat
23851 cacttgaggc caggagttcg agaccggcct ggccaacatg gtgaaacact
23901 atctctacta aaaatacaaa aattagctgg gcgtggtggc acatgcctat
23951 agttccagct acccggaagg ctgaggcagg aggctgagct tgggaggcag
24001 gaggctgagc ttgggaggca ggagactgag tttgggaggc agagggctgc
24051 agtgagccga gatcatgcca ctgcactcca gcctgggtga cagagtgaga
24101 ctccatctca aaaaatatat atatgtatta tagaatatta gagctttaga
24151 catcacctag tgcaaacttc ttgctttaca gattagaaaa ttgaggctta
24201 gaaagtctaa gtaatggcca agcacagtgg caaatgtctg taatcccagc
24251 cctctgggag gccaaggcag gaggattgtt tgaagccagg agttcaagac
24301 cagcctgagc aaaacagaca gacccccccа ccccaatctc tacaaaaaaa
24351 aaattttaat tagccaggtg tggtggcatg tgcctgtagc cctagcccta
24401 gctacttggg aggctgaggc aggaggactg tttgagccca ggaatttgag
24451 cctgcagtga gctatgattg caccactgta ctccagcctg ggcaacagag
24501 cccgacccta tatctaatta ataataacaa aaagattaaa taacttaacc
24551 caggcaacac agatggaaag tagcagagct gggggctaga atccagatct
24601 aaatcttcag cctgcattct tcctaattta tgtggagcct cacactgtct
24651 tgccctgtcc catgtgcaag atagcagccg agaatgacta ctgcagcatt
24701 ccttctgatt tccttatttc tgacttgaat atgctacacc agtaacaaaa
24751 ctatgagcac ccaagacaca accacacgca tgtgcacaca cagagacgca
24801 cacacatact gttaacagat actgagacaa agatcttgga agacagcatt
24851 gtcttctgaa aagagaatct tctgctatgg aatgtctggg aaggaagtgt
24901 gacagacgtt ttcactcacc caacaccttt cccactttct tcttgctaca
24951 agtagcataa ttttattcag atagcatgga gtgggggcag acagggtggg
25001 ggcaatgcgc tcagagaagg tagacccagc ctggccaagc caagtaattt
25051 tattctcctg gtcaggaaga tgtatggaga aattggctgg taggctttag
25101 gaaaacattt catttttat tacacaaatg cacacacatg cacacaagca
25151 gccaaaaaca cttacacctt tccctttctt cctgcctttt ttttttcttt
25201 gagatggagt tttgcttttg ttgcccaggc tggagagcaa tggtgcaatc
25251 ttggcttact gcaacctctg cctcccgggt tcaagtaatt ctcctgcctt
25301 agcctcccaa gtagctggga ttaccggtgt ataccaccat ggccagttga
25351 tttttttgta ttttcactag agacgtggtt tcaccatgtt ggccaggctg
25401 gtctcgaact cctgacctca agtgatccac ccactttggc ctcccaaagt
25451 gttgggatta caggcctgag ccactgcacc tggcctcttc ctgcctttca
25501 attcagtttt gtgagaataa gatatttgat gttgctgcac aacattgctg
25551 gggagtcatc acacctaagt tgacagtgct gaagcagaaa catggaaaga
25601 gaccggctct ttgatgacac ttgagctgcg aaactgacct ggaatgacct
25651 ccttccagat gtattgtcat gagagagaat aagacaatct cattgtttca
25701 gccacttgca gtgggtgttt tataacttgc agctgaaagc atagttacct
25751 ctctgagcct cagtttttc ctttagaaaa tggcgataac actacttacc
25801 cagcaggtcg taggaggaaa tggtataata caatgcctaa cataaaggaa
25851 ctcagtaaat cgtagctagt catatcataa tcatgataac cctcatagca
25901 aaatcctcag tggtgggaat gttttctcca ctccgccagt gtcatggcat
25951 cgggttgctt ctccctacag tggtggtctg gagacagttt gccccgctgc
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FIG. 7 CONT'D

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26001 cacctcttct ccaagtgctg aggagctcag gcatgggagc tttgggcctg
26051 ggagctttgg gccggggagg tagggagtcc agtctgtaaa ggaaaacaat
26101 aaaaatgaaa agcaagcatg taaaatcata ataacatatt gaataatctt
26151 agcaagccac aaagtgttct ttatttttta tttatttatt tttttgggac
26201 ggagtctctc tctgttgccc aggctggaat gcagtggcat gatctcagct
26251 cactgcaacc tccccctccc gggttcaagc aattctcctg cctcaacctc
26301 ctcaggaact gggattacag gtgcctgcca ctgcacctag ctaatttttt
26351 gtatttttag tagagacggg gtttcaccat gttggctagg ctggtcttga
26401 actcctgacc tcgtgatctg cccgcctcag cctcccaaag tgctgggatt
26451 acaagcatga gccaccgcgc ccagccaagt gttcatttct tatgtcccag
26501 aagtcccaac tctggcaatc tagcccatag aaataatcca aatgaagaga
26551 gaaattttac tcaccaaatc tttaattcag atttttttgc agcctttaga
26601 agtaaataat aatatatccc cttgatataa tataattatg aagccaacac
26651 agtaatgttt attagaaact atgtaggggt ggcccggcgc ggtggctcac
26701 gcttctaatc ccagcacttt gggaggccga ggcgggcgga tcacgaggtc
26751 aggagatcga gaccatcctg gctaacacgg tgaaaccctg cctctactaa
26801 aaaaatacaa aaaattagcc gagcatggta gctgtagtcc cagcgactcg
26851 ggaggctgag gcaggagaat ggcatgaacc cgggaggcag tgtttgcagt
26901 gagcctagat tgcaccactg cactccagcc tggacaacac agcgagactc
26951 cgtctcaaaa aaaaaaaaaa aaaagaaact atgtaggaat aaggcaatgt
27001 aattcttaat ataaattaaa tgaaaacaaa atcagaatac aaaattgtat
27051 gtgtgctctg cttacaacca cgtggagcac agctataatt aaagcgggct
27101 atacttggca cactgattgt taaataagtg cagcgaacac aggaaataag
27151 ggggctgcgg gttgttgaag aaactggcca gaaaacggaa cgaagaggag
27201 agaagctaac ggtgctcatc gtgtggcacg caggtgcgtt gttttctctc
27251 cactaaggct gctgggtggg gccaaaatag tccaggcagc caagtgcaga
27301 ggcgttgggg gcggcaaaga tgcaaaggat ccccactgtg gctgcacccc
27351 gaggaggagt ccgtggcagg aggcccacac ccaggacccg gcgccaacag
27401 tgaggagacg aacctggaag acatcccgct gtccagacac cgcgagggag
27451 gcgagtggtg ctcgcagcct gggacttagg aacacaggga aacagcttcc
27501 acatgccatt tgctgaataa atatttcttg caggatgttt cctatggatt
27551 cattctctat catgaaagct ttatttgtgg tcagcgtcct aggaaagcag
27601 aggcagacag atttctgttc tagggagttc tgtggagggt tacagatcag
27651 caatattcca ctgaaaccaa atacctagga aaagcatgga aggacacaca
27701 gaaatcacaa attattatat tatattatac tatactatac tatactaata
27751 ttatattata ttatattata ttatattata ttatattata ttatattata
27801 ttatatattt atttttgag acagggtctt gctccgtcat ctaggctgga
27851 gtgcagtggc gcaatcatgg cttactgcag cctcaacctc ccaggtgcag
27901 gtaatcctcc tgcctcagcc tcctgagtag ctgggactac agctgcatgc
27951 catcacaccc gactaatttt taaattatat agttgtagac atgggttctc
28001 tctatgttgc ccaagctgat cttgaactcc tgggctcaag caatcctcct
28051 gccctggcct cccaaagtgc tgagattaca ggcatgaacc accgtgcctg
28101 gccaaaatgt atattttaaa aaacatataa aaatagagtt ggctgggcgc
28151 ggtggctcac gcctttaatc ccaccacttt gggagaccga ggctggtgga
28201 tcactaggtc aggagatcga gaccatcctg gctaacacgg tgaaaccccg
28251 tctctactaa aaatacaaaa attagccagg cgcggtggcg ggcacctgta
28301 gtcccagctg ctggggaggc tgaggcagga gaatggtgtg aacccgggag
28351 gtggagcttg cagtgagccg agatcacgcc actgcactcc agcctgggca
28401 acagagcgag actctgtctc aaaaaaaaaa aaaatagagt taataaatat
28451 atctatgtgt tatagatata aataaaatgt gtttgcaatc attatctact
28501 gtgtcctata actaattaag atcttcaccc ataaaaatcc caaccctatt
28551 atgaatttgg agtactttct ggtggtggac tcacactttt tcatgcaagc
28601 tcctttgccc cctatgcaac cactgcccac gttgtgctcc agggcagacc
28651 atagttcaca ggcggaagca ggtgccatgt aggaatgaga ccacatgtac
28701 catgaagcaa cggagctcac tgattcagag gcaagatgct ggcccctctg
28751 gctgtcacca tggatgactg ctgatttaag gtctttcttg gtcatcccac
28801 ctggcaccac cacttctggt cccttctctt cagtttcctc tacccagcta
28851 tgtcctcctc tactgataag ccctgaaaca gagcaagtgg cctctttttt
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FIG. 7 CONT'D

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28901 aatgtaacaa atattttaca atattcattt gtaaagtcta gaaatgaaaa
28951 taatacacaa tagcatctac ctagccacac aatcttgaaa aacaatcagt
29001 ataatgctgt aactataacg taagaaataa atgaaggtat ttatttattt
29051 atttatttat ttatttttag agacagagtc ttgctctata gcccaggctg
29101 aagtgcagtg gtgcaagtgg tgcagcctcg aactcctggg ctcaaatgat
29151 cctcctgcct cagccttctg agtagctggg actagaggtg tgcaccacta
29201 tgcctagcta atttttaact tttttgtaga gactgggtct tgctatgttg
29251 cccaggctgg tcttgaactc cttgttgagg atcagtggga gatgaaaggg
29301 aggagagaca gtgaggaccc cttggcacta cccaccttcc ctacccaccg
29351 gcaagtcccc aatgagtgat gtccagtatg ggtctgggcg gggcaagtga
29401 tcctcctgcc tcagcctccc agagtgctta aattacagat gtgagccact
29451 ctacccaacg gaaggtaatt tgaaataaaa taatacatgt tcccatacat
29501 aagtgctcag gacaatcaca ttaatgaagt tgtcacgttc ttgcatctaa
29551 atttagaatc cacatgagca ccatggcagt ggatcgccgt tttggtgcgt
29601 cttatcagca acttaaatgc cacgctgtta ttcaaagcgc tgctgtcagt
29651 gatgtgattt tccaaaataa tgagcagctc ttggaaaagc tccaaacaga
29701 acaaagtgca aactttcctc aatgcataca gtagttgtgt ttctggaaag
29751 tgtagtgtat atgaaaacca catgaaaata gtctgcggtt acatataaaa
29801 caaaattagg ttctaggatc agatagtttt tattttattt tattttattt
29851 tattttattt tattttattt tattttattt tatttttgag acggagtctc
29901 cctctgtttc ccagcctgga gtgcagtggc acaatcttgg ctcaccacaa
29951 cctctgcctc ccaggttcaa gtgaatctcc tgcctcagcc tcccaagtag
30001 ctgggactac aggcacgctc cactatgccc ggctaatttt tgtattttta
30051 gtagagacgg ggtttcacta tattggcgag gctggtcttg aactcctgac
30101 cacgtgatcc acccgccttg gcctcccaaa gtgctgggat tataggcttg
30151 agccaccgag cccagcccag atacttttta aatggtgttt tttttcttta
30201 aactactaca taaatgtttg ggacattcaa aagtgaaatt caaatttaag
30251 aaacattttt ttcttgcaca aaatattctt gggtgttata ggatgtctag
30301 catctctagt ccccactcac tgaatgtcag gcacatgctc aaatcaaact
30351 ctccaagagt ggtcattgag aactactctt tcctgtatat gagtagacct
30401 tgtactctct gtccactttt ctccacatct ggggaaagct gaatcatggg
30451 cataagtacc tgtaaacagt cactgataca catgttacat ctgtagcaac
30501 caccccaaat tcagatatat agcttagggc cccatgggtt gcctaataca
30551 tgatggtcat agagggagga aatttctcgg agaatttcat tcaaccttca
30601 gcatgattgg agcattggtt ctcaccacag tacccacaaa ggtaacttgt
30651 accccaccca gccccatctt gtacatcact cactggggac ttggtggtgg
30701 gtaggaaagg tggatggttc ctagggttcc tggctgtctc tcctcccctt
30751 tgtctcccac tgatcctcaa cacagctcat ggctgagaac ttctgattga
30801 gagatttata caagaaattg cattcctcaa agtaagtgat tattgaggga
30851 aaaaaaaagg aaaaccatga aaaaaacccc aatgcaccct acttgcttat
30901 atgtgcgtag aatatctctg gaaaaatgtc taagaaacca atggtgtgag
30951 ctgtttccca gggagggtct ggcatggctg gagcactgcg gtgaaaggag
31001 aacgtccttg atgctctact cttttgtacc ttcagaattt tgtatggatg
31051 gcttgaaaat agaaagaaat agaatttgat ttttaaaaga ggcagtccct
31101 ggaaaaaagt tattaatttg catattgcaa gttgagaaag tgagagacca
31151 gagcaagagg aggtcacaac aagataaaaa ggtgggggcc gttatggagc
31201 ccagggaaag gagggctgga caagagactc cgtccatgtt tctctagcac
31251 tttccaggag aataaagctc ttgttctagc actctcctcc tttggaccta
31301 tctgtagaga gcagaaaagt gaccacgagg ctctgttgca tgataaacaa
31351 ccccttaaaa accaccaact ttccatggtc ttccagcaac ccatttggat
31401 gtcgtcccta cagttgactc cttcagtccc tgtgtgtgtc ctctgcgtgc
31451 ccctggcccc ctgccttccc ttagctgtgc tgcacagaaa accgccccag
31501 ctcttgggtc aaacagatcc cataagaaac atcagaagaa gcatcctggc
31551 ttacaagtta ttttttggtg agtgcaatgg gcgtgccgtg ctcctccagg
31601 cctgaccacc tgtatgagag ttggcaggag gacatttcta aactcacact
31651 cttagggcag tagagatggg gcctaagacc tttgtctctc ctggtatcag
31701 tgagccccgt gtagcccctt ttccttattc caggtctgga agctgcagtc
31751 acagacacac aaaggtgctg gggcttgcac attcaccagc gtcactttct
```

FIG. 7 CONT'D

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31801 ccagccacac cactacgttt gagggctctc ctgtccttct ctaacagaac
31851 tagtctggga ctagacgcca ggctttgggc taagtacttg atgtgtcttc
31901 acttattaaa tccttccaat aacccttcaa gttaggtacc attattatcg
31951 tcatcaacct cattttatag agaaggaaac tgaggtgcag agaaattcag
32001 gttgaggttc acagcaaata agcagtggag gccaagtgtg cccccaggtg
32051 gacccaaatc aaagccacac tgttaccttc tgctctgcgc tgcctcccgg
32101 ggcagtagcc ctcgtgagcc tccccacgtt ggggtgtcta atgaaaagct
32151 tccctgctgg ttgagctgaa ggggtcaggg tcggggctgt acagagaaac
32201 tcaggccaca agggcctttg ggcagaactg gggtcacaaa gtaatcatgg
32251 tttcccagcg aacacaagac tttggccctc aggcaaggct ccttgatgtc
32301 tgggggagcc tgtgcccccc agcagtgctc acagatccac ccctgactgc
32351 cagccggccc cttgatggcg gtgcctgtct cagattctgt ggtcagtgcc
32401 acgcagctac ctccagaggc agcctgcagc ctggccatgt ggccccaagc
32451 tccaggctag aggccaaggg gagtgtccct tctctctctg tgtcacccag
32501 ggcataggtc acccaggcag cctggcatgg tgcctccaag ccactgtgct
32551 aatgcttcta cagcttctgc tccctccctg cctccatggg gcccaaacct
32601 agccctggtg ctgctctggg aactgggtca gagcagcacc ccagctcccc
32651 caccccccagg agcccctcaa ccttggcctg ctgtcatcct cgtccggccc
32701 caatcttcct gcaaatcggg cccttgcagg attcctgctg actcagcagc
32751 tgggcccgga caggacttag tcccagcgtg agccgatccc gctgcagttt
32801 gggcgagaat gacaagccct ccaccagacg attctttatt gctctgagac
32851 ttccctggga taattccacc cccaggagca ctctatctgt ttctgtctcc
32901 tccccacaca ccccctggcc ttgaaaaagg atgatcactg accacaggca
32951 ctgaaaagag caaaccaaga gcagcatcaa taccctcaca cagtggtgca
33001 cataacacac tttgagtttc tgacttttcc taatcagttc ttcctgctaa
33051 aatacagtag cttaacaaaa acaatgacaa caacaatctg gtgtttgcca
33101 tttacaaggc actttctgtg tgagtagcat gacatggtaa aagagaaaga
33151 gatgaattat aaaacgcagc aagatcatga gtcaatgatt caccctgtcc
33201 cagcctgctt ctttttttt ttttttgaga cagagtcttg ctctgtcacc
33251 aggctggagt gcagtggcgc gatctcagct cactgcaacc tccgccttcc
33301 gggttcaagc gattctcctg cctcagccac ccgagtagct gggactacaa
33351 gtgtgcgcca ccatgcccag ctaatttttg tatttttagt agagatgggg
33401 tttcaccatg ttggccagga tggtctcgat ttcttgacct tgtgatctgc
33451 ccgcctcggc cttccaaccg agcctgcttc ttttcttgta aaatggaaga
33501 gtcataacat ccaacttgag tcttgatatt ttaatgaaat aatgcatggg
33551 aaagcagaaa acagcacaaa gattactggt tataagagct aaatcactgt
33601 gactccatat ccaaattcaa tacctactga atcagtggtt tctgactagt
33651 caatttttt tctttttttc ttttttttt tgagacagag tctcggctgg
33701 gtgcagtggc tcacacctgt aatcccagct ctttgggagg ccgaggcggg
33751 cagatcactc gagattagaa gctggagacc agcctggcca acatggcaaa
33801 accctgtctc tactgaaaat aaaaaaatta tccaggcatg gtagcacgtg
33851 cctgtaatcc caggtactcg ggaggctgag gtgggagaat tgcttgaacc
33901 taggaggcgg aggttgcagt gagccgagat tgtgccattg cactccagcc
33951 tgggcgccag agcgagactc catctcaatt aaaaaaaaaa aataggagag
34001 agacagagtc tcactctgtc ttctaggctg gagtgcagtg ctgtgatctc
34051 agctcactgc agcctccacc tcctgggctc atgcagttct tgggcctcaa
34101 tctcccaagt acctggaact acaggcacac atcaccatgc ctggttaatt
34151 tattattttt tgtagagacg tggtttcacc atattggcca ggctggtctt
34201 gaactcctga gcttgagcga tcctcctgcc ttggcctccc aaagtgctgg
34251 gattacaggc atgagccccc atgcccggcg actagccaat tttttaaaaa
34301 ttacattttc tagaggtgtc atttttactg ggaaaaacac agtgacacca
34351 ttcaagaaaa aattgaacgg taactttaat cactacatta acacaatttt
34401 aaaggttgat ctgcatcata catacctttt aaagaatgtt ttcatcatat
34451 gtagacagct ttttttgttt tttgtttttg tttttgtttt gaggcagagt
34501 ctcgctctgt caccaaggct ggagtgcagt ggtgtgatct gggctcactg
34551 caacctccgc ctcccgggtt catgccattc tcctgcctca gcctcccaaa
34601 tagctgggcc tacaggtagg tgccaccacg cccagctaat ttttgtattt
34651 ttagtagaga cggggtttca ccatgttagc caggctggtc tcgaactcct
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FIG. 7 CONT'D

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34701 gacctcgtga tccacccacc tcagcccccc aaaatgttgg gattacaggc
34751 ctgagccacc acgccctgcc ataggcagct tttaaaagaa cacatgtgca
34801 gcctggccat catggtgaaa cctgtcttta tgaaaaatac aaaaatcagc
34851 tgggcatggt ggcacctgcc tataatccca cttgcttagg aggttgagga
34901 gggaggatcg cttgagccct ggaggcggag gctgctgtcc agcctgggcg
34951 acagagcaag actcggtctc aaatagaaaa caaaacaaaa caacaacaac
35001 aacaacaaca aaccatgtgt gattccaagc aaatcagaga atctctagcc
35051 accagaaaaa ccttgaggca tgtactgaaa ggaagaggtc agaattctct
35101 gcgaggagct cagaggatcc tgagggaaga gagaaggcgg ctgcgcttgg
35151 acacagctcc gagctcgtgc tccctccttc aggcacccaa gtctgagttg
35201 ctaaaaaatg gagctgtcac tgggccttgc tctgccagga cctgcagagc
35251 cggggacctc tctgtggcaa gcccagcaag atgactgctc tgaggcgccc
35301 tagggctgag ggaggggccg tgacaccagc cccgcccccc agccacctgg
35351 gaaaaggaag cacaaaaagg agaagcagca acggctgctc tgcttccttc
35401 ccatctcgct cttgggtcat gcctggccag cagaaagcag ctccataggg
35451 gaggagagcc acgcaggatc tcacagctgc agtctaatag taacacagag
35501 gtaattttaa ctttttactt ttctaccctt gggagtaggg atgagtagag
35551 gcttacctcc ttccagaggc agctcatatc cccccacccc cattcccgga
35601 agttgagatg tctcttctct gttccacgca ggcatcgtct aagttgggaa
35651 caggtcttat gtcttaaaat ttgggattct ttaaaaacat atgtggctgg
35701 gcacagtggc tcacgcctgt aatcccagca ctttgggagg ccgggcaggt
35751 ggataatttg aggtcaggag ttcaatacca gccaggccaa catggtgaaa
35801 cctcgtctct aatataaata caaaaagtag ctgggtggta gtagtagctg
35851 taatcccagg tactcgggag gctgaggcag gagaatccct tgaacctagg
35901 aggcggaggt tgcagggagg cagaggttgt gatgagccaa gattgcacca
35951 ctgcactcca gtctgggtga cacagtgaga ccctgtctca aaacaacaac
36001 aaaaatgtgt gatggcacat gcccatagtc ccagctactg gggaggctga
36051 ggtgggagga tggcttgagc ctgggaagtc gaggctgcag tgagctgtga
36101 tcatgccact gcagtccagc ctgggcgaca gagtgagacc ctgtctcaaa
36151 acaaaacaaa acaaaacaaa acaaaaaaac ccaaaaacaa acaaaaaagc
36201 acatgtggag tgttgtagaa gtcattgacc ttggtaagac agtggaggaa
36251 actgctttgc tctgactcat aaatttgccc ccagtaaaca gtatttataa
36301 atagccccag tcaggcactg catgaagaca tttcagtcaa cgacagacca
36351 catatacaac ggtggtccca taagattata acagagctga aaaattccta
36401 tttttcagct tagtgttgtg gtgcaaccac tacctttct atgtttagat
36451 acacgaatac ttagcactgt gttacaatag cctacagtac ccattacagg
36501 aatgctgtac cggtgtgtag cccaggagca atgggccata ccatatagcc
36551 taggtgtgga gtagactaga ccatccacgt ttgtgtaatt acaatctatg
36601 attttgtaaa atgatgaaat tgcctaatga agcatttctc agaatgtgtc
36651 cccgtcatta agtgacacct cactgtgttt ccaagacata gtactggtcc
36701 ttgggaagct ctaaagagag gtcaccgtga gctgaaccat ccttctcact
36751 ctgtgcatgg aacccagctt agcttccatt tcagcattta ggcttatagg
36801 aggagaagag gttagaagcc acagaccagc aagaattgaa gacatcgttc
36851 tgtaatttct actgaaccag ctctgtctga ctggaacttc attttgcctc
36901 tttgctttaa ctcctcagga atgtcttcca ggaggcccct gatcttctct
36951 gctcagggac cactcttatc tgacccagag acaggttagc tgatggtgac
37001 tcacacatcc tcacttcctt caaagcccag gcatctgttt aaaatctgac
37051 cctgtgaaga cttttcctgt tttggaaaaa ctcttccgtt gtttgcctgc
37101 acagatttgt gctccatttt taatttcaat ttttgtagag aaggcgggtc
37151 cttgctttgt tgcctcggct tgtttgaaac tcctgggctc aagtgatcct
37201 cctgccttgg cctcccacag tgctgggatt acaggtgtga gccactgcac
37251 caggatggat ttgtcttcct tcagaagaca gtagctgatg tgtgccctgg
37301 cctttctccc ctaggattca gcagtggcca ccatgggttc tgtgaattcc
37351 agaggtcaca aggcggaagc ccaggtggtg atgatgggcc tggactcggc
37401 gggcaagacc acgctccttt acaagctgaa gggccaccag ctggtggaga
37451 ccctgcccac tgttggtttc aacgtggagc ctctgaaagc tcctgggcac
37501 gtgtcactga ctctctggga cgttgggggg caggccccgc tcagagccag
37551 ctggaaggac tatctggaag gcacagatat cctcgtgtac gtgctggaca
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FIG. 7 CONT'D

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37601 gcacagatga agcccgctta cccgagtcgg cggctgagct cacagaagtc
37651 ctgaacgacc ccaacatggc tggcgtcccc ttcttggtgc tggccaacaa
37701 gcaggaggca cctgatgcac ttccgctgct taagatcaga aacaggctga
37751 gtctagagag attccaggac cactgctggg agctccgggg ctgcagtgcc
37801 ctcactgggg aggggctgcc cgaggccctg cagagcctgt ggagcctcct
37851 gaaatctcgc agctgcatgt gtctgcaggc gagagcccat ggggctgagc
37901 gcggagacag caagagatct tgatccagac agagcagcat atctttgctc
37951 atacaaacta gaagaaccag ctgatccttg agaaatttac gcttagtcta
38001 tcaaacaaga aatgctggct tggcccggtg gctcatgcct gtaatcccag
38051 cactgtggga gaccacggtg ggggaatccc ttgagcccag gagttggaga
38101 gcaacatcac aacaccccat ttctactaat aatcaaaaaa ttggccgggc
38151 atggtggcat gtgcctgtag tcccagctac ttgggaggct gaggcaggag
38201 aatcgcttga gcccaagagg tagaggttgc agtgagccaa gatcgcgcca
38251 ctgcactcca gtctgggcaa cagagtgaga ccctgtctca ataataataa
38301 taataataat gatgatactc taagaaaaaa atctcaacat acttcattta
38351 atagctcgtt accaagtgtg aatgaagcaa tatgtcataa tagagtagcc
38401 actggttgca taataataga gacctaaatt ctcaaatagg gaaagaggtt
38451 ttaaaatcaa atttgaggcc aggtgcagtg gctcatgggc ggaggagggc
38501 agattacttg aggctaggag ttcaagacca gcctggccaa catggtgaaa
38551 ccccatctct actgaaaata caaaaattag gcatagtggt gcacgcctgc
38601 agtcccagct actcaggagg ttgaggcaga agaatcgctt gaacccagga
38651 agtggaggtt gcagtgagcc gagattgtgc tgctgcactc cagcctgggt
38701 gaaaaagaca ggctgtgtct ccaaaaagaa aaaaaaaagt caaattcaaa
38751 tatcatctgg acatgtcaca atggatcgcg gatccttatg agtgattttc
38801 cccagtggcc cctggggatg tgccactgtc actcagaagg gcaagctagg
38851 cagggcccat acaacagcag gggtctgcag gttagacgtt ccctgccctg
38901 ggacgctcac ccctgggcaa gaggctggaa gttcacacca tccaaaattt
38951 atccttgttt tttttctgat gctaattagc ctctcccgat tttatgacat
39001 cttgtgttga tctttttcaa aaactcattt tctttttttt ccttctcttt
39051 tctccttctt gtagcacata tctttcgtta aagatcagat caataaaata
39101 ttttatttat tcattaattt aacaaaaaaa acagagcatt tagtttgtgg
39151 caaaaacact gagctttcga atatgaatca tgtgctttag gtgggaattg
39201 tgaattctga agatacagat gacagtgacg aatgccttct gtctcatgat
39251 tgacagggaa aaggaaggtt gaccatagca tcctagaagg ctcatcaggt
39301 gatcattacc tagcatccat gaagcacctg aaattatttg caaaatgtta
39351 cgctttggac catttttccg gggaaggaga tccagaactt tttaccagat
39401 tttcaaagac atctgtgact cccaaaagtt aacaatcact gatgtggttg
39451 ttgtatccct catccaaccc cagaacactt tctgtaatct gagtttttta
39501 atggcaagtg gcctatattt agcacctgtt ctcatgttaa acagctctga
39551 atgttagata ttctttctta tcctggactg gttctctcta tctctggagt
39601 aatgcagtat aaattggcca tcagtaccct cctaaaatct gagatctgcc
39651 aggcccctct tctaacacca ggttaggcat gcttggttat ttccagtact
39701 tgtcagtcaa catgtttcaa gacgctgtgt tagacactag ggatgcaaag
39751 atgaatgaga taaggcctca ggcctcatgg aaggtgagac agtaaagaca
39801 ttactcccat aaaaatgtga ggagagagac tcagttcagc aactgtttat
39851 tctgtttatt gagcacttac ttggaccaag cactgtggtc ttggtgtttt
39901 acatagactg tctctaattc tcacaactct gcaaaatata tatattccca
39951 ttttataaaa ctacaaactg aggctcagag aaggtgtgac ctcttgttgc
40001 ttgaggcaca gagttataaa gtaacatatc tggaatttga aatcagatct
40051 gtttagggct aatgctgcat ttttctacaa catcatgcct ctagaaggtt
40101 taagctaggt aggctttcag ccagcagaca tgatggggag agccttctaa
40151 taagagggaa gagactgctt ggaagcatga agggaggtgt aagaaagata
40201 agtaagtcag tgtacttgca acagaggctt gggatgaagg gtgggtgaag
40251 ttgacatcac gatagaaaac aaaactggaa tgggagttta ggtccaattt
40301 gggcaaggtt gtttgaattt caataatcag gggtttgggt caaggaagaa
40351 aaatcatggg acttgccatt taggaggata attttgtggt agtgtggagg
40401 tgaaataaag agaaaaggga accttggagc tgggaaggca ggaaaccggc
40451 tagatgacca tcacacagca aaggagggag tggaagagag atgagaaaat
```

FIG. 7 CONT'D

40501 tgagagctat tattaagaaa aacagttgag agaggaagaa tttgaagagg
40551 gctcaagatt ttgagtccac atgacagaag gactggaatg ccatgaactg
40601 gagaaggtga gcgctgaaga accaggatgg gacggggctg gaacagctgg
40651 gttcagcttt tgcagggtgg gtacgtgttt ggttatagct gctttcagat
40701 tgttccatta tctgtactcc caacaaccct gccggatata tttgttggct
40751 ttcactcatg gaggctcatt tccttgcatg atttgtcact tttgattgtg
40801 agctcatctg cagtaggagt tgtttatcct gtgtgactcc catgtgccct
40851 ggtctgtaac aacatttcta cagagtggta tctactagga tcctggggat
40901 ttcaattatt ttagaccaaa tattatgtca gtttctctgc ctggggctac
40951 tggacctcag aggtagtata catctgaact gtgtacccat tcaatgcaca
41001 ggccttaggg attccatatg tgacaggtga ctttttttcc ttgcctttat
41051 gttgtaagac agacagcctg cctcctcaga cttccctgag ctggtgggca
41101 gcatttttg aaccctcttt taaggagggg tcatctctct gatgctcttc
41151 ttttttgctg agctcagatt aacattttct acctgggtgc agtggctcat
41201 gcctgtaatc ccagcacttt gggaggccga ggcaggcgga tcatgaggtc
41251 aggagatcga gaccagcctg accagcatag tgaaaccctg tctctactga
41301 aaatacaaaa aaattagccg ggactggtgg cgggcgcctg taatctcagc
41351 tacttgggag gctgaagcag gagaattgct tgaacttggg aggcggaggt
41401 tgcagtgagc caagattgca ccactgcact ccagcctggg caacagtgcg
41451 agactccgtc ttaaaacaaa caaatgaaaa aaccattttc tctcctccaa
41501 gcaagcctaa ggccacatgt cctattctca cacaggtgct ttaatttcag
41551 cccagtctct agagcctaaa tttggctcct ctgcaatttc catgggctct
41601 aggtttccag cttatactta ctgctttggc tgtggtttct ctcttccatt
41651 tctaccacgt gaggatttcc ttttattttg tttaaagaca gcacacatta
41701 aaaaaaactt ttgttgttat cgtttaccca acatttctat gttttttttt
41751 catgggaagg ccatctgcca taatgctaga agtcctgaac ttgttttgat
41801 atgtgaccct gagccttccc ggggtgctgg cagaatggtg acatgattag
41851 atctgttctt aggaagatat caggggcagc agcatttggg tagaggtagc
41901 atcctgaagg caaggagaca ggttaaagaa agaccagagg tgtcttttga
41951 cccaggtaga cactactgac acattggtct gcgcaaacag ttcaccacag
42001 ctgccctttc atgccatagg ctcgattttt cctgttctct tggcaatccc
42051 tctggttcag ccaggacagt agcctcctct ctgacaccaa gatggaccat
42101 gctcttcccc agctccaaat gtgtgctcct tgatggaata gacacagtgg
42151 acaagaggac cctcaggtgg ctttgagtat ttgcctcaag cccatcatcc
42201 ctgaaggcag atgtgcttga tcttaacaga gcccaggaag tctcccctca
42251 gatacaattt tggaaaaagg acaatgaaaa caaaaagtca taactgtcta
42301 ggttctttgc attttgaaca aagaattgga caaaaagcac aaacaaagca
42351 acaaaagaaa agcacagatt tattgaaaca aaagtacgcg acacagagtg
42401 ggaggggggct cgagcaagca gctcaagagc tttggttaca gaattttctg
42451 gggtttaaat accctctaga ggttttccat tggttacttg gtttacaccc
42501 tatgtaaatg aaatagtggc ccacgatcag tctgattgat tgcagaaagc
42551 aactaatcag aggctgaagt gaagatacaa agttacaccc tatgcaaatg
42601 tctgattgat tgcagaaagt gaccaatcag aggctgaagt gaacttacaa
42651 agttatactc ctctgcaaat gaagacttgg cctgtgacca gcctgactgg
42701 ttgcaggagg ggaccaatca gaggtacttt cagttttcat ctgcaatgca
42751 ggggaagttg gggggttgca aagggagtag cctctgatcc ttttgttatt
42801 tgggtgtgga gaggtgggct tttctttttg attcagttct aggaattcgg
42851 cgcgaatcag ccttaggttc cctgcctcca gaccctactc tcctgcctca
42901 atagccatgc ccagttagtg ttaactgtaa ctccctgctg gtctgcctcc
42951 tgctaggagg gactgaacat caaatcactc gcatcgaatt actcagcagg
43001 tgagttctgg ggatgataac cacacaattc tctctgcacg aaagatgggt
43051 ttgagagcct cagagtctgg gggaagctct gccagccatc cacttactgg
43101 cttactgttt gcctgaagta agcatgggaa tcccacaggg tacaaggtcc
43151 cgcataccct tctgggattt ccgatgccct ctttgcatgt gctctggtcc
43201 atcaagctcc catgccagat gcagtgcttg tagttgcagc agtgaccata
43251 gcagtggcaa cagttctaca gggtcacaga actttaggga agcctcctaa
43301 caccctgct cttcgttagg ctgcagctgc tttcctgtcc atgatttaag
43351 catccttaga tcccagctgt ccaggaagct ctccccacgc acctcagcct

FIG. 7 CONT'D

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43401 aagtccagcc tcccactgag ctcccatggc atgactgtcc aggccccagc
43451 gcccttgtgc cctaaccggg gctgttccat gttgatatgt ggtctcctca
43501 ggcatggtgt acactactag agaggagggg ccaagtcttc catccttctg
43551 accctcttca aagcctggaa caaaattaga tattgagagt tgttcattaa
43601 gtacctgagt gaataatgaa taattgatta aagccagaga atcgggtatc
43651 acagtaagga gtccctgggt cctccgaact ttccagaata aaattccaaa
43701 atgagaacac caagaggttc cctggcttga gagccaaaat ggcggcacag
43751 acctatatct caggcacact ttgtggtaaa aacaagaagc cagacacact
43801 ctttctagac acacgtcaca cccagaatga cttagctttt agtctgtgga
43851 ggaaaagggg tggaaagtgg agacctggaa ccagatgaga agtcaacggg
43901 agcagtaagt tcagtgtgtg cctcctgtcc cagcacctgg gtcaacatgg
43951 gcaagacctg atggggtggt ggagatgctg acctttgctg ctgcctcttg
44001 ggcctgtaag agcaaataca atttaaaaaa aaatttttt ttaatttttt
44051 tttgagacag ggtctctctc tgtcactcag gctggagtgc agtggtgcga
44101 tcttggctca ctgcagcatt cacctcctgg gctcaaatga tcctcccacc
44151 tcagcctcct gagtaactga gactacgtgg agtagccacc ccactcggct
44201 catttttaat tttttgtaga gacatggttt tgccatgttg cccaggctgg
44251 tctcagactc ttggcctcaa tgaatcctcc tgccctggcc tcccaaagtg
44301 tggggataac aggcatgagc cactgcgcct agtctgcaaa ttcacattga
44351 aagaagaggc ctgtttgata gatcagtagg gtgactataa ttaacattaa
44401 tctaatatgc atttcaaaaa agctacaaga gaataatttg aatgttccgc
44451 tgcataaaga aaggataagt gtttaaggtg atggatattc cagttgccgt
44501 gatttgatta tattaatgtt accaaattat tacatatact tcaaaagtat
44551 atacatctat tatgtatcaa ctaaaaaaat aagagtttta attctccttg
44601 tggaaaataa gggaagagac ttcacctccc tccctttct tagagatttt
44651 actttaggaa acttcaactt ttaagttctt tcctctgtct ctttgagatg
44701 tatgtaaatc ttttaaaaag ctaaataagg gccaggtgag ggggctcacg
44751 cttgttatcc ccagcgcttt tggaggctga ggtaggagga ctgtttgagg
44801 ccaggagttc aaagttacag tgagccatga ttgcatcact gcactccagc
44851 tgggcagcaa caggggccct gtgctttaaa ataataataa ataataaatt
44901 taagaagcta aataagcctc ttggcagctt taggacttag aaatatcttt
44951 ttcaaggacc aaggagccaa ccttttgaaa cgtagtcatc aagagtttca
45001 atgggagggt aggagcctga cctggcaggt gcctcgctct aagttgcaaa
45051 actacctcct gtcctaaagc tatgagaggt ttgtttttcc tttgaataaa
45101 gccaattagc taacatagat ggtgacatca gttaccaggt gaatctgtgg
45151 taaactctgt gcaacaaatg gggctgtcaa gtcctcttac ttgaggactg
45201 actagctatt gtctatgtgg agaacctgtc tggaataggt cacctctgca
45251 tgactctata aaagggtgag gtctctttct gtctttgtag tctcttaggg
45301 gattgtgtgg gatgtgcatt acattttagt tgagtgctta ttcactaatg
45351 aaacagtttt ctttctccac tccctttgtg gagagatttc ctgggttggc
45401 agaggttgac ttttaataat attttctcca caggcccatc gtcccctgac
45451 tctgtgagct ttcagccaca cccaggatca gtcagatcaa ctgctcaact
45501 caaaggcatc ctagtgagca agggaaaact caaggtggtt tttggagggt
45551 gcttagttag gaaatgatga acacagttca acatgacttg cggccctccc
45601 catgggcaag agtatgaaca cctgtgactg ttcctgaact cactaaggaa
45651 agtcttttac agtgtgtgaa gggtgacctg gagtttcctt cccacatggc
45701 tcataagagc agcagctcag gaaaaacaaa acaagtattt atttatttat
45751 ttatttattt atttatttat ttatttattt ttagagacgg gttctcactc
45801 tgtcacccag gctggagtgc agtggcacaa tcatggctca ctgcagcctc
45851 aacttcgtgg gcaccagtga tcttcccatg tcagccttct gactggctgg
45901 gactacaggc atgccccca tgtctggtta ttttttaaaa atttttatta
45951 gaaggccagg cgtggtggct cccgcatgta atcccagcac tttgggaggc
46001 caaggtggga ggatcacctg aggttgggag tttgagacca gcctgaccaa
46051 catggagaca cctcgtctct actaaagaaa aaaaaaatat tagctgggca
46101 tggtggcgca tgcctgtaat cctagctact cgggaggctg aggtaggaga
46151 attgtttgaa cctgggaggt ggaggttgtg gtgagccgag atagtgccat
46201 tgcactctag cctgggcaac aagaacagaa ctccatctta gaaaaaaaat
46251 gtttttatta gagacaagtt cttgcttttt gcccaggctg cttttgaact
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FIG. 7 CONT'D

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46301 cctgggctca agtgatcctc ctgccttggc ctcccaaagt gctgggatta
46351 caggggtgag ccaccatgcc tggccacaaa acaattttag aaaagaaaaa
46401 agccttttat tttcacttaa ttgtcttgat ttccactcct ctgagacatt
46451 caccccccagg aaacttggct gtgtagctat agatgataag tatttttaaa
46501 ttctccttga gaaatggcat tattctgcct tagatctcga actagaacct
46551 gacaatgagt cctcctgctt gcccctgatc tggggcacac tgatattttt
46601 gcaggttcct tcaagcatga aattgcaaac ctaaacaaac tggttctcat
46651 aaaagcactt ccaatccttc aaataaaagg aggcagccta attataaata
46701 atctctggat tagaaacatc acacaccaca tctcttgcaa tttttatttt
46751 acctcgtctt tgaattccat gaacttcaat ttcatgtggt gttaagtgct
46801 ggcttaacct ggagagaaaa tataaaggat ataaagaaat gtatataaag
46851 atttctcaga gttataaaaa tacttctgtg agagaattgc tacaaaaagg
46901 gagatgcaag accacccttt gtccaaactg gcattgtcta aatgcagttg
46951 agtgtcttgc cttagagtct gggcttgaag tcagtcagaa ctgactagaa
47001 caccagccct acccctcacc aatagggtac ccttgggcca attatttaac
47051 ccttctaagc cgtaactacc tcatccgcag aatggaaatg atgctaggaa
47101 gtacctgaca aggttcttgt gagaattaag tgagatcctg tgttcatcta
47151 gtcaacttgt atttctttat ttttaattgt attatacatt tttagagatg
47201 ggggtcttgc tctgttgtcc tggttggagt gcagtggtgt gatcacagtt
47251 cactgtattc tcaaactctt gggcccaagg gatcctctgg cctcagcctc
47301 ctgagtagct gggacaacag gtatgggcca ccatgcctgg ctaattaaga
47351 tttttaaaaa atagaaatgg gggtctcacc atcttgccca ggttggtctc
47401 cacctcctgg gctcaagtga tcctcctgca tcggcctccc aaagtgctag
47451 gattacaggc atgagccact gtgccaggcc ttgactcgtg tttcttgagc
47501 aaatcactga gctatgttta aaagatacac agatgaagga catataaacc
47551 cagtccctgc ccttaactta cagccgagct ttcaataagg gagagctatt
47601 aatattaagt cccactgatg gatgttaaaa tgtaaatgaa gcatagagtt
47651 cttagggcct aggctcttct tgatgttccc ttccaccatc cttggaactc
47701 tccagaacga gacttgtttt gggggaagga gggtgccttg gctgatggaa
47751 agtgcggggg tgggggccga aggaagtgca gggcctaaga ctgttgttct
47801 taagcattct ggaggctgct ggacatttag ctcccagcct cctctctacc
47851 acaatgaaca cttctatccc aggacttctc ctctcccccc ccttagacca
47901 aagctcttgc agtctgagta ctggaaagcc cagcatgagc ctctccacgc
47951 acttcgaatg caccctcctc cagcaaaggc tggtaagttg aaaagacagg
48001 aaggatttca gaagactgga aattgaatcc cacactcagc tcctctttga
48051 aactctacaa tgagtgcttc attccttgga cttcagcttt tcaaagaaaa
48101 catccctaga agaaggacag cagggatagt catttacctt ttaatgagaa
48151 tgaattatcc agccctttc aggacagcgt ttgtgaggca gcaaagctaa
48201 atgttgagaa gggcctgaaa gaatgatgga ctgacgctgc caaaaagaga
48251 aagggcggga ccttcacagc tttgcctaag gccattatga atttggacca
48301 aataggtatt atcatccaca caggcaggac ctcctgggta gggggctgcc
48351 acctttcca ggcacttgga agggtggcct ccagctgtgg agccacagaa
48401 ctaaatatta tagctggccc aggagcaccc gtttaggcta gggaaggaat
48451 aataatccgg cttctccttc ctctgaccct gagatttcgg ccaagtctcc
48501 attagagatt ggcctcctag agtgtaaaac agggtggaca agtttggaga
48551 atggatctgg gatggggtgg ggaatggcaa atggaaaaaa ggcagcacaa
48601 actctttatt gtcattcaga gaatgctgag gtccaaggca caaccagcca
48651 gagggttgct tcagcctttc actggaaaag ccacattttc ctcagttgta
48701 tcctcacttc gagtgaggct tctccaaatg cagaaggaca gcatcatgac
48751 ccaggccgag aaagtatgat tgcaaaattc catgggccta accctagtgg
48801 gggagggaat ccattctttt aagccagggt ttaaaactct tcaagcaagt
48851 catctgcaaa ggtaccgctt ctaccatttt aaagatagga ttatgttccc
48901 taggacaact ggatgagccc taggaaccaa gaaccctgtg cagctggggc
48951 agaagcctga gggttccttt gttcccccac agctgtaggt cacaaggttc
49001 ttacacaagc tttggggtgg ccccacccca cacccttcct tcccctcagt
49051 cagtgatgac tcaagaggtt ttgggaagga gctcagggaa cactcaagca
49101 gcaggctcag cttacggcac ttctgatgca ttttctagat aacattagtt
49151 gctggttcca gacaggactc agaagtatgg acattcactc cccaggcttg
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FIG. 7 CONT'D

```
49201 gtcatcagtg ccctgtgagt tcaggaatac actacctaaa ggagatcttt
49251 aggaaggaga aggagaaaag aggagaagag ggaaggaagg aaggcaggaa
49301 ggaaggaagg gagggaggga gggagggagg gaaagagaaa gagggaagga
49351 gagagtgagg aaggaaggaa ggagagagaa agaagaaaga aagaaataga
49401 gaaagcaaga aaaggaaaga aaaagagaaa gaaagaaaga gagaatggaa
49451 ggaagggagg aaagaaggaa gggaggaagg aaggaaggga gggagggagg
49501 gagctggccg gacgtggtgg ctcatgtctg caatcccagc actttgggag
49551 gccgaggcag gtggatcacc tgcagtcagg aattcaagac cagcctggtc
49601 tacatggcga aaccctgtgt ctactaaaaa aataaaatta gctggacgtg
49651 gtggcagatg cctataattc cacttacttg ggaagctgag gccagagaat
49701 ggcctgaacc cgggaggcgg aggttgtggt gagccaagct cgcgctactg
49751 cactccatcc tgggcgacag ggcgagactt catctcaaaa aaaaaaaaaa
49801 agaaaagaaa agaaagaaga gagaaagagg aaaaagaaga aagaaagaaa
49851 aagaaaggaa gaaaaagaga gtcattgaga cttgtggctt aatgttgtga
49901 atgtatatgt atgtttaact gtatatataa ccgtatgtat atgtatgtct
49951 caccagagag agaaagggat taaaaaaaaa aaaaagccaa aacctacaaa
50001 ggcaaagcag aagaaagagt accagactgg agatagcaat ataattacag
50051 aaaatgggaa gtgaccgcac agaccagaga aatcagaaac ctacatctgc
50101 cgggggttgg ggtgtgtgtg tgtgtgtagc ctcaaggatt tactccgtgc
50151 cagccactga tctaagggtt gaaggtatat tcactttcgc gatcccccaa
50201 aaatgctagc aggatttgta ccctaatatt ggagactagg cacagaaagg
50251 tttaatttgc cccaggttac acagcagaat ctgaacctct ccgaggttcg
50301 gctctagaga ccacgcttga cacagcctca cagtcatgag taagcccttа
50351 gggaccaaac cccaggagac ctcaggctgg cagatcagga gcaccgaagt
50401 gggcctggaa acaggactgg gggaaagtct ggaggaaaag agaccctcgg
50451 aatccttccc cattttactt aggcaggcag ctgccctctg ctcccgggca
50501 gaaggctgtg ggtttcttta ggaggctttc cccagttgag gatggggtga
50551 gacacctatt aaaacaagag aatttaggcc ggacgtggtg gctcatgcct
50601 gtaatcccag cactttggga ggctgaggcg ggagaatcat ttgagcccag
50651 gagtttgtga ccagtctggc aacataggga gaccctgtct ctaaaaaaaa
50701 aataaaatta gctgagtgtg gtggcgggca cctgtggtcc cagctacttg
50751 gggctggggc ttaggtaggg aggatcactt gagcctggga ggttgaggct
50801 gcagtgagcc gagatcacgc cactgcactc cagcctaggt gacagagcca
50851 gatactgtct aaaaaaaaaa aagaaagaaa acaagagaat tcagtgaaaa
50901 tctgaattca gctcccatgt gttggcagtg aggcccacac accccaggcg
50951 ggggctggga gctcctctcc aggagtgctg attggctggg gagaagactg
51001 acggcactag catccgaagg tccctgctgg aattgctggt tcaccaactg
51051 acgagtcctg gccacataca cggggctcac acaaccttct gtcagctttt
51101 tgttaccttc ccctttttтc ctacactttt attatggaaa aatgtaaaca
51151 tacagaaaaa caacacaaag agtacaatgt gcccactccc tctgttctgc
51201 agttgttagc accttaccat atttatcttt agatatgtgt gtgttgtgta
51251 tgttgttttt cttttccttt ttttttttтt tttgagacac agtctcactc
51301 tgttgcccag gctggagagc agtggcacaa tctcgagtca ccacaacctg
51351 cacctcctgg gttcaagtga ttctcctgcc tcagcctcct gagtagctgg
51401 gattacaggc atgcactact aggcccggct gatttttgta tttttggtag
51451 agatggggtt ttgccatgtt ggccaggcta gtctcgaact cccaacctca
51501 ggtgatccac ctgccttggt ctctcaaagt gctgggatta taggcatgag
51551 ccaccacgcg cagctgtgta tattgttttt ctgaaccatt tgaaaatgag
51601 ctgcagccat aatattttcc catacatatt tcagtatcta tcttcacaga
51651 ataaggacat tatcacacat aactaaatcc atgacacacc caagaaaatt
51701 taacacaatt ttctaatgtt gtctcatgtt gaatccgtat tctagcctcc
51751 tgcattggcc ctagaatgtc ttttccatgt gcacacattg catttggctc
51801 ttatgtctct ttattctcct tactagaata ttcccaacct cttgttttcc
51851 ccacaatgct gacttttтga gtaggccagg ccatttagtg gaaggagcat
51901 ctcatatctg atttgtctga ttgtttcctt gtaccgtcat ttaacttgta
51951 cctctatctc ttgtaaatcc cataaactgg aagtgagatc taaagtcttg
52001 actagattca gatcagacac ctttgacaag acacagagct caagtttttg
52051 ttttttttтt gttttttttt gagatggagt ctccctctgt cacctaggct
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FIG. 7 CONT'D

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52101 ggagtgcagt ggtgctatct cagctcactg caagctccgc ctcccgggtt
52151 caagcaattc ttctgcctca gcctcccaag tagctgggac tacaggtgcg
52201 tgccaccacg cctggttaat tttttgtatt tttagtagag gcggggtttc
52251 accgtgttag ccaggatggt ctcgatctcc tgaccttgtg atctgcctgc
52301 ctcagcctcc caaagtgctg ggattacagg catgagccac tgcgcccggc
52351 tgacacagag ctgaagttct atccttcatg tcgcattgta tctggagaca
52401 gcgtctgcat aggtcactag cagtgaagcg aagtttgatc acttggtgga
52451 ggcagtgact gctggatctt tccactgtaa aggcacacgt ttcccttcgc
52501 caatgacctt cgggtaacac acccgggcac agtgtgaata tcctgcgcaa
52551 tgccttactc agatatggac aataaaggat gacaggaaac ggagaaaaag
52601 ctttcaacat gaaagagtga gacagaaaca aacaggaaaa agctttcaac
52651 atgaaagagg gagacagaaa caaacaggaa aaagccgact cagaggaaag
52701 agagaccatc gcaggaagca aaagaaaact tcccctaaac aataaatagc
52751 cttaaaagtg agaatatata ttacattcat aattgacaag attgctatga
52801 aaaaaatatt tatttattta ttttgagaca aggtcttgct ctgtcaccca
52851 ggggagtgca gtggcatgat catggctcac tgcagcctca agtgcctggg
52901 ctcaagcaat cctcctgcct cggcctccca agtagctgga actacaggtg
52951 tgcatcacca cacccagcta attaaaaaac aatttttttg tagagatggg
53001 ctctcgctgt gttgcccagg ttggtcttga attcctggcc tcaagtgatt
53051 ctcccacctc agtctctcaa agtgctggaa ttacaggtat gagccactgc
53101 acctggccaa aaaaaaattt caaaaacaag atagtgctct tgggctccac
53151 actgaaaaat ccactgcaaa attggaaggt aaagtacaaa caaaaatttc
53201 ttataaagta gaacaaaaag atgaaaaata gaaactgagg ccaggtgcag
53251 tggctcacac ctgtaatccc agcattttgg gaggccaagg caagcggatc
53301 atgaggtcag gagttcaaga ccagcctggc caacatggtg aaacctcatc
53351 tctactaaaa atacaaaaat tagctgggcg tggtggcacg agcctgtaat
53401 cccacctact tgggaggctg aggcatgaga attgcttgaa actggaaggc
53451 agaggttgcg gtgagccgag atcgtgccac tgcactctag cctgggtgaa
53501 agagcaaaac accatctaaa gaaaaaaaaa aaaaaagaaa agaaagaaaa
53551 atagaaactg aaaacacagg aaaactaaac aattagtcca aaagtttagc
53601 atcagaatca tggcagttcc agaaagacaa aagagaaaaa gtagagggcg
53651 tgaattatca gagaaataaa gcaagaacag gccaggtgct gtggctcatg
53701 cctgtaattc cagcactttg ggaagctggc ggggagcgga tcacttgatc
53751 ctaggagttt gagactagcc tgggcaacat agtgagaccc catttctacc
53801 aaaaataaaa aagcaaaatt agctgggcat ggtggcttgt gcttgtagtc
53851 ccagcaattc aggaggctag gaggtggagg ctgcagtgag ccagccatgt
53901 tcatgccact gccctccagc ctgggcgaca gagtgagact ctgtctcaca
53951 aaaaaaaaaa aaaaaaaaaa aaaagaggaa gaaataaaga aagaatgaaa
54001 ctatagtata tgagatgatg ggtatgttaa tttgcgtgac tctagtaatc
54051 agttcactat atacatcaag ataagtatat caaaatatta gtttgtgtac
54101 cttgaatata tgatatattt aaatataaaa ttacatacaa tttaaaaaat
54151 acctttaaa aaacaaacac aaaagcacaa tattgtgaac tttctgaaca
54201 tcataaaaga ggaaaacagt tcacatacaa aagatcagga atcagaatgg
54251 cattaaactt tttaacagca acactaaaat ctaaaggata atggagccag
54301 ggccgggcgc agtggctcat gcctgtaatt ccagcacttt gggaggccga
54351 ggtaggtgga tcacctgagg tcaggagttg gagactagcc tggccaacat
54401 ggtaaaaccc cattcttacc caaaatacaa aaatcagccg ggtgtggtgg
54451 cacatgcttg taatcccagc tacttgggag gctgaggcag gagaatcggc
54501 ttgaacccga gaggcagagg tcgcagtgag ctgagattgc accattgcac
54551 tccagcctgg gcaacagagc aagactccgc ctcaaaaaag aaaaaaaaaa
54601 aaaagaggat aatggagcca ggtgccatgg ctcacgcctg taatcacagc
54651 actttgggag gctgaggcag aaggaacact cgaggccagg agtttgagac
54701 caacttgggc aacaaagcga gaccttgtct ctacaaaaaa taaaataatt
54751 agccaggcct ggtgtcatgc acctacgtag tcccagctac ttgggaggct
54801 gaggcaggag gatggcttga gctcaggagt ttgaggctgc agtgaactat
54851 gatggtgcca ctgcactcca aactgggtga cagagtgaga ccctatctct
54901 aaaacaataa ataaatgggg ccgagtgcag tggctcacgc ctgtaatccc
54951 agcactttgg gaggccaagg cgggcggatc acgaggtcag gagatcgaga
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FIG. 7 CONT'D

55001 ccatcctggc taacacagtg aaaccccgtc cctactaaaa atacaaaaaa
55051 gtagccgggc gtggtggcag gtgcctgtag tcccagctac tctggaggct
55101 gaggcaggag aatggcgtga acctgggagg cggagcttgc agtgagccga
55151 gatcgcacca ctgcactcca gcctgggcga cagagtgaga ctctgtctca
55201 aaaaataaaa aataaaaaat aaaaataaat aaataaataa ataaataaat
55251 aaatgataat ggagcaaagc cttctaattt ccgagggcaa tttgaacaac
55301 aaaattgtcc agtgacccat aggataaaat aaatgagtca gtgctaataa
55351 aaataaataa ttgaatgact aaataaatgg agaagaaata gctctaccct
55401 acaagagaat tccaattaat aaatgtaaaa gaaatgagga aaaaagaaaa
55451 tcactattag aacactacag taataattgt tgcaggcaag attcatcaat
55501 gaatgctata attagttggt aaaagtttga ggattaacag gatatttaca
55551 tagtctcaaa gtatgtccac taatatattt attatctgca aaaggaaaaa
55601 actttatgat ggagaaacta gcagaaacca ctttcaccac atgatcaagg
55651 ttagcatcac cagtaataag tctgatcaac atcaagcacc caacacgatg
55701 tactgagaag ggcacgttac ctccatggta ttcttgcccc aaacccataa
55751 ctgtctaatc atgaggaaaa catcaaacaa atccaaattg agggacattc
55801 caaaaaaata actgaccagt ctttttcaaa actgtcaaag tcatgaaaga
55851 caaagaaaga ctgcctagga caggaagaga ctgagaagac ttagcaacca
55901 aagcaaagtg gaatctcaga ttggatcatg gaaaaatcaa acgacattgg
55951 aaacattggt tatatctgaa gtctgtagtt tagtaagtag tagcgtacca
56001 aagttatttt cttagttttg atcattgtac tatggctatg tgagctgcat
56051 aaagacatta catagaactc tgcagtgtct ttgcagcttt tctgtaagtc
56101 caaaattatt taaaaataga aagtaaaaat tcagaagagg aattatttcc
56151 aacctagaat tttataccta aactataaat caattgtgag catagcataa
56201 tgacatttct cagacatgca agggctcatt cactttctgt taggaagcga
56251 ctatagtttt gctcccttaa aagaatgaac caagatgcag acatggcatc
56301 taggcaacgt ggaattcaac actagaggga agcaaaggta tttccagaac
56351 tgtggctaag cagaggcttc cagaacaacc agtatagatg ggagcaaggg
56401 gactaattgt tcctagagga aggatgttgc aaaccaacca gctaaccaac
56451 caatcaccac caacagttta cctatctatt tgattatatc ggggaagttt
56501 tccgttttgg cagagtgtgg gattgaatta ttgataagta tgcagaaaac
56551 taagcaaaca gaaaaaaaaa aaagacaatg atcagctctt gggaaaacaa
56601 aatgttgccc tgaaaagaaa tgtaatcata gtatcctaaa tgactcactt
56651 gtggataatt tttccatagt cacgataatg taaatactaa atactcattt
56701 aactaaatat ttatattggg aggagggaag aagggaaata tgtgtgtgag
56751 tggagtatag ggataagaat taaattcttg ttttcaaagg tgagaagcaa
56801 gaaaatctct gtccaatggg ctcccagccc caaggcaagc tgcacatttt
56851 aggtatcatc tgggtgggaa tagtgagggt ggtgtggcag atgtgaacac
56901 acaggggaat cctctcttct gctgtcctag gcaaactggt ggctagtgga
56951 aggaagccaa ggctgagtgg gattagggct aggaagatgg gccaggctgt
57001 gctggctcgt gatgcaatga cctcaggttc tatttcagca gggttcagca
57051 tctaaggaga tgccatctag ggtggagtgc agccacaagt caaagcagct
57101 gatagctgtc acgaggtggc tgtggcctgg tttgggcctt gttttcaagg
57151 taggttctgt gaaacactac ttctgaagga tgtaaagaac tgacctgaaa
57201 agagggttcc ttggtccaac atgcttgaga aatgctggat tcaatgacac
57251 taaacaagtt tctccaatgc aggacatctc aaaacccttc atatgattat
57301 gggaatatcc aatctctaag gcatggcatg tgggggagat ggtgacagag
57351 tgtttgatca tgaccatgga acccttttcta tgcagaactt aacactggac
57401 tagagaacta ctgacaaccc tttccagagt aggggtcggc gtcagtcagg
57451 gccggcacta acaggaaaag cacctggttc cttgtatctt cacatcttta
57501 ccatcactgc caaccccttt ccactggcta gggctaatta gggttttggg
57551 gccaacaggc aaatgaactg aggtttgaga caggctctgc tctcatgaaa
57601 aactgaagtg ttaacaagac agaaatgtag gcagaggccc agttataagg
57651 tacagaggca cccagcaggg gtgggactca gtggccccca gacctgtagc
57701 atgctgacag gcccacgcaa agccaagatc aaacctacag cagcccttct
57751 ccatcagccc agcaccctga gtcgcattcc ttggtcaggc tctggaaatg
57801 gtagaggcag ctgctgtggg aaggtgaacc ccgggggttc tggcccagct
57851 tgtttggggc aaatgcagga gctgacaact tacaatcaca gcctgtcccc

FIG. 7 CONT'D

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57901 actcacctgc tacagaggac tcagtcattt catttccctg atttctccag
57951 gtctctagtg ggggttccct ggtgccgaca ccattccatc caggagctga
58001 tgaaaacccc tcttctctga agcacaggca gaatgtatcc ttagaaagga
58051 agccaggggg ccgggtatgg tggctcacgc ctgtaatccc agcactttgg
58101 gaggctgaga tgggtggatc acctgagatc gggagtccaa gaccagcctg
58151 gccaacatgg tgaaacccca tctctactaa aaatacaaaa attagccagg
58201 catcatggcg tgcacctata atcccagcta ctcgggaggc tgaggcagga
58251 gaatcacttg aacccgggag gtggggattg cagtgagccg aggttgtgcc
58301 actgtactcc agcctgggtg acacagggag attccatctc aaaaaagaga
58351 gaaagaaaga aagaaagaaa gaaaacacag ggttgctaag gccaaggcat
58401 cacacactta acaccaccaa gtcattccag agtgaaagga acgcaaatcc
58451 agtctcaggc tgtctgattg acgaagcttc tggatgcaca gcttttacat
58501 ttttatattt tattctctgt gatgtgccca gctcaggagc cgcaggtttc
58551 ggccagttgt tctgctctag tcctgagcgc cctggcatgt tttacagttc
58601 tgagactgtc ctatattcag ggcctgtacc atggacagat gcaaagccac
58651 taaatgtgtg agctggaata gacaagaaca gttatattga gtgtttacta
58701 catgctcgtc ctcacaacgt tacgtgctaa gcactaggag tcgcagtttt
58751 tggggtgcag aggctgagga tgagggcagt tacatatctt gtcaagtctc
58801 cccctggcaa ggggcagttg taactcagca cttcctggtg gcacagcctg
58851 ggctctgggc tccccccca acgcttcgca ggtggcctgg ctgccactgt
58901 tccccatggc actgggcagg ccgctcacct tttgttgttg ccaggctctt
58951 cgataatccc tgtccatggg gttcatgaga ttatagcgag gatcagataa
59001 tgcagtgagc agaaaagtgc tttggagtgg agtgaataca cacatggggt
59051 gccaatcaca gccagtcctt ttcctagcta cccaacaatt tggcatccca
59101 aagggatcac cctctctagc gcgtgtttat gagctgacta gaaaaaggca
59151 cgtagacgca agaagacaga agtgtgattt tgaaagtggg taccccttta
59201 cccagagctg gaaggcatga aggaggtaag ggtggagacc caccgtctag
59251 aggctttgaa ctgaaacctt ggaagagtga actctctcag acctcatggc
59301 tgcccccacc ccctcccaac ccttccccta aaggctttag acactaaaaa
59351 taccccagcc acctgctgcc ctgggaggca ataaatcatt ggccatctag
59401 caccagaatc cgggccaaca tggcagcgga cacagaccca agggatcagt
59451 tcccttcctc ccacccaggc caccatcaag agcctgcctg ctgctggggg
59501 tgggggggg ggggcagggg ggtgggggg ggcggggcag gggggcgagg
59551 gagtgtgttc agaggacaca ggacctgctt ggaggcttct ggggccagaa
59601 gtgctaagtg ggtgtgggt aagcggaagg gagtgagtca ctggaggggg
59651 tcctggggaa agggcggtgg cccctgtgcc gcgacagcca cctgctttat
59701 tatatagaat aaggtcatct catcaaaacc acagctgagc cgcccaacga
59751 ctgtcctact actccagggc caccagatgt cagtgttaaa gggatcatgg
59801 atattggtga tcagatgtca ggacagggac tgaatgtatg gagactgttc
59851 aaaccagggg cgctcagggg caaacctgtg aaatcggttt cctgcttcca
59901 gttcttagca attagatcct acccccaggg actgaaatca gtcccactcc
59951 caaaaggtaa ccacaaaatg ccaaagatct gttcatcttc actctcagca
60001 caataccatg tatcataaat gagaggcaaa ggcagaattt ctaatttact
60051 tattattaaa atgcatcatc aacaaacaca ccatagtggg gaacacgaag
60101 cgatgtgttg cagtgtagtg ttgctcaaat gtgaaaaagc agcgacccct
60151 gagagtctcc tttgttttgt tacctctctc tctagaaaaa gcactgcatt
60201 gtaagtgact tggtccaacc agtgaaaaat acaaacagga ccattcatag
60251 acaaaaaagt gaagaataaa attcagtggt cactcaagta taataaatag
60301 acccaaatga tcagaaatgt gtttatgttg attgttttag agcattaaaa
60351 aatccaaaaa tttgggaggc taaggtgggt ggattgcttg agcctaggag
60401 tttgagacca gcttacacaa catagtgaga ccccatctct acataaaatt
60451 aaaaaattag ccaggtatgg tggcatatgt ctcaactact caggaggctg
60501 tggtgggagg atcccttgag cctgggattg aggctgcagt gagctgtgat
60551 tgcaacactg cccttcagcc tgggcaacat agtgagatcc tgtctcaaaa
60601 aaaatgctat gtggccttgg ggaggtaatc tgacccatgt gcctcagttt
60651 ctatgtctat aaactggacc tctccaaagc ccctttaagt aatgtaagat
60701 tctaggattc taagtgtgac tttgagaggt tcctgtggag ttgggaaggt
60751 gaatgtacaa aaattccaac ggaatgccac ccagggccac ttcagcaaca
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FIG. 7 CONT'D

60801 tagacaaaga ctgagaattc agaatgcctc cctcccaact cctcagggac
60851 ccagggaagg cttctggaag acaagggatt acacccctat gacctaatgc
60901 tgtagcatga tcaaaatact tgatctcttt ttaagagctg ggaggtggcc
60951 agtcagatat tttaagatgt caacttgatc tgtatcatta tcagcatcta
61001 aggaaacatt ttgtttccaa aaacaaatga tcactgctat ctataaacct
61051 ctgtaagcac atgaaattct caagaatggg gccttttccg taatactctt
61101 cacagctggt tttgtgtgta cacgtagaac tgctgcttcc tgaacgataa
61151 gtttaggcca aggaagaaag aggggaagaa ggaaggggga gaaagtcttt
61201 cttcaggagt ctccccaaaa tgttaatata tgcacagaaa aaagtttgaa
61251 aaatagaaac aatggcaagg agcagtggct cacacctgtc atcccagcac
61301 tttgggaggc ctattgcttg aacccagggg tttgagacca gcttgggcaa
61351 catgatgaag ccctgtctat ataaaaaaat acaaaaatta gccgggcttg
61401 atggtgcttg cctgtcgtcc caggtacttg ggaggctgag gtgggagggt
61451 cacttgagcc caggaggttg aggtggcagt gagccgatac catgccactg
61501 cactccagcc tgggtgacag agtgagaccc tgtctcaaaa aaaaaaaaaa
61551 aaagaaagaa aagaaaaaaa agaaactaac tttgtaacag gtaactgtgg
61601 ttctgtctga tgatactgga ggtaatcatt attatttttt gcttatctga
61651 atttttcatt tttcagcaaa gaacatgtca atttgcgtaa taatttttt
61701 taatgcaaat acatgcagga agggtaatac atcaaatcat tatccgttac
61751 taactccttg atgttagtga atgggtgtga tttgtttcct acactggtaa
61801 gaagtggatt ttgttaggtc tggggtctgc agatctcaag gtggcactta
61851 aggcagtaga aagggaagag agaaggtgga gaaccctcaa aagggaagtg
61901 ggtggagaag gttggctcac accttaggcc cgccagctgc tgcctgtaac
61951 cttgagggca tttatttatt tttatttaaa aaattattta tttttagttt
62001 ttgtagcaat ggggtcccac tgtgttgccc aggctggtct tgaacttcca
62051 gcctcatgtg atcctcctgc cttggcctcc caaagtgctg ggataacaag
62101 tgtgaaccac tgctcctgac cagagggcat ttaataacaa ttaaggataa
62151 taacagttaa ccttttctca tgcaaggctt tgcccaatta ttctctttat
62201 aaataacttc tctttagagt caaactcaag tgttcataac aaacaagaaa
62251 aacagcacat ggattttaat aactttaaaa taatgaaaaa caaatgattc
62301 ttctccaaac tttttcattt tgatttccat caaaactttg agaaggtttt
62351 cttttacaat ttccgtattg gaatctatag acttttcttg aagctccagt
62401 gtaaatactt caggagttat agagctcgca taattaaata caagcaaaca
62451 tcatcattta aacacttta aataggttat gctgactttt gccccaatat
62501 tttctagaaa ggaagagttt gcaaaggaaa tttacagtat aaacaacact
62551 ggggaggtat cttagtccat tttgtgctgc tgtaacagaa aatctgggtc
62601 tggataattt ataaaacaca gatttatctg gctcatggtt ctcaaggctg
62651 gaagttcaag attgagggac tgtgtctggt gagggagttc tgctgtgtca
62701 tctcatggca gaagggtgga aaggcaaaag ggcacaagca tgagagagag
62751 agagagagag agactgaaag agagacagaa agagggagcc aaactcatcc
62801 ttttatcagg aagttgctct gctgtgataa ctaacccgct cagcattaat
62851 ggcattaatc cattcatgag agcacagccc tcatgaccta atcacctctt
62901 aaaggtccta cctctcaaca ctgttgcacc agggattaag tgtctgatac
62951 atctttttg ggagacacat tcaaaccaca gcaggaagga tggattcttt
63001 gcatgaatca ctccctacaa tataagctat tcaaaaccca ttgcgaatca
63051 ttttatatat tcatgaaagc atgccttcta tggctggctc cctggcaaca
63101 aatgtgatgg gcagaggata gaaggtacca gagtaacaga tctctaaatg
63151 tcgaaggcaa aatgtagact tttaaaataa actctaccag gtgcagtggc
63201 tcatgcctgt aattccagca ctttgggagg ccaaggcggg aagactgcca
63251 gaacccacaa gtttgagacc agcttgggca acattagacc ccatttctac
63301 caaaaaaaaa aaaaaaaaaa aaaaaaaaag ccaggtgtgg tggctgtgcc
63351 tgtggttcca gctacttggg aagctgaggt gggaggattg cttgagcctg
63401 gaagtcgaag ctgcaatgag ttgtgattgt gccactgcac tccagcctga
63451 ggtgacagag agagaccctg tctcaaaaga aaaaaaaaag aaggaaaata
63501 aattccaatt gtttatcaag tagttggaga tattgaggct tgaagaggga
63551 agcaatattg aggcagtgcc ttgttcattg aatctaagag gccgtcaagc
63601 gtaagatgta ctgtactttg gacagaaaaa actggcaggg tgtggtggct
63651 cacacctgta atcccacact ttgggaggct gaggcaggca gattgcttgc

FIG. 7 CONT'D

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63701 ccaggagttc aagaccagcc tgggcaacat ggcaaaaccc tgtctcatca
63751 aaacaaacaa acaaacaaag aaaaacccaa aatgacaaaa attagctggg
63801 cgtagtggtg catacctgtg gtcccagcaa ctctggaggc tgaggaggga
63851 ggatcacttg agtctgggag gcaaagattg cagtttaagc caagatcagg
63901 ccacggcact ccagtgagcc aagatcaagc cactgccctc aagcctgggc
63951 aacagagcga gaccctgtct caaaagaaaa aaaaaaaaaa aaagaaccac
64001 tgccaactaa attatgacat ataaactgca aaatgcatcc caattttaaa
64051 aatgttaaaa tgtggggaa agtaccacct tggatcaatg aactacagca
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64151 tactcacagt gcctgtggct ccttaactgc tacacgggga caccaaccct
64201 cctcccagct cacttcactg tgaaggcatt tagacgtgtc cttacttggc
64251 agtagagtgg gtctgtactc caagttcctg tcagagtata atccccattt
64301 ctctcccatt tgatactcag caaaaactca atggagagaa atcatgcttg
64351 cagtactgcc ggcaggattg gcagcccatc cattttgctc tactctgttt
64401 acccttggat tgagccagat cagcagagag caaagccctg gaaccacgct
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64601 tttcacgtct tcataccaga aatttaaaaa aataaataaa attttaagaa
64651 atggaggata tgatcactac gcattacata catgcagcaa attttctcat
64701 gtatcccata aatgtgcaca aattaaataa atatgaaggt gtttttctta
64751 atgcagttgt tataatcata aaaagttgtg catggatgat gtattagtcc
64801 actgtcacat tgctacaagt aactacccga gactgggtaa tttataagaa
64851 aagaggttta attggctcag ggttctacag gctgtatagg aggcatggct
64901 gggggaagcc tcaggaaact tacaatcatg gcggaaggca aggtgaagcc
64951 ggcacttcct acatgggcgg agcaagagga agagagcgcg aaagggacat
65001 cgctacacac tttacaacag atctcgtgag agctctatca tgggacagca
65051 ctaggggaat ggtgctaaac catgagaaac cacccccatg atccagtcac
65101 ctcccaccag gcccctcttc caacactggg acctacaatt caacatggga
65151 tctgggtggg gacacagaac catattaggt gatgtaaaat tcacttcctt
65201 acaaaggttt ctgactatgg ttaaaacaca tcagcctgag tttggcccat
65251 ggggaagtaa agaataacta ctgataatga accaggaaat ctgactgaat
65301 aaattaccaa ataaaatgat attatgaaca aaaataaaac acaccttgag
65351 caacatagtg ataccttgtt tctattaaaa atttaaatta cctgggcgtg
65401 gtagcacatg cctatagtcc cagctgcttg agaggctgag gtgggaggag
65451 agcttgagcc tgagaggttg aggctgcagt gagccatgat cttgccgctg
65501 cactccagtg acagagtgaa accctgtctc aatataaata aaaaagtata
65551 acatatatac agaaaagtac ataatttata aatgtacagc caaatatcac
65601 aaattataac taccccaaat gaaaaaaata ggacattacc agaagcccct
65651 atgacttctc cccatcactg cacccatctt gtcccccaaa ggcaatttcc
65701 atccggattt cttgattttt catttttat ttttggtttt ttatacagaa
65751 aggtctcact atattgccca ggctggcctt gaactcctgg actcaagcga
65801 tcctccctcc tcaacctccc aaagtgctgg gattacaagt gtgagccatt
65851 gtgcctggcc atcctgattt ctaacaccat cgattagttt tatgttttta
65901 aactttacat caataggatc accgaacatg tattcttctg gtctggctcc
65951 ttttgctcct cattatgtct gcaaaatttc tccatgttgt tatgagtagc
66001 agaaggttgt tcatttttg agacaggatc ttgctctgtc gcccaggctg
66051 gagtgcagtg gggtaatcac ggctcactgc agccttgact tcccaggctc
66101 aggcaatcct ccccactcag cgtcctgagt agctgggacc agaggcgcca
66151 ccaaacctag ctatttttt tttttcattt gtggtgtgag ggtctcacta
66201 tgctgctcaa ggctagtctt gaactcctgg gctcaagtga tcctcccgcc
66251 ttggcctccc aaagtattgg gattacaggc atgagccatc atgcctagct
66301 ggttgttggt tttcattgct gtacagtaat ccatttacgt ataacttatt
66351 catttagatt gtttccaatt tgggattatt atgaataatg ctgccattct
66401 ggtgcatata ttaagcattt ctgtgaggta catacctagg agtcaaactg
66451 ccgggttaca ggatatagat gcttggctaa gctcttgggg gtgactacgg
66501 gatgaccaca gaatggacca cccccaaggg cagcactacc agtgaggcca
66551 ccactggggc tactcagacc acagacctgc tgctcccgcc atgactgcct
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FIG. 7 CONT'D

66601 cttgataccc agggagttgg acacttggta tagtaatgcc aaactctcac
66651 atttccatga ccttacttgt ctgcacaaaa cagaaaagag ggagagagac
66701 agagagagag ggagggaaga agacaggaga gagagaggga gacagagaga
66751 gagagaaaca gtagaaaatg gcctctatat tttcaccctc caaatctctc
66801 aagtacttct gaaaggtaaa accaatttgg catctgggac cagggcctgc
66851 agcctctgca gggtaggaag ccaacctaga aggagagtgg aacacagact
66901 gagctatcag agctacagca tccgccacaa cataccaagg gcctggtcta
66951 tgtgctgggc aaggcagaga tcagatctgt gagctcaaga gtctagtaag
67001 aaaggcaagc actgaacaag ttaacgtaag tacctgctcc ccagccacca
67051 cagaactgct aattcatctc ccagacgagt gttttctgaa acgcaatgta
67101 atcacgagtc cctcttggtg ctgagggtaa gtgccaaatt ggtgctttcc
67151 ttctctcaat tctgtagaag gttagggcat acattttgca tatttatttc
67201 atgctcatct tatttctctc tcactctccc tgtgttccta tttcctgatt
67251 tacttttcat cataatgtat tatgtatttc tgcaaggcat ctccaatctt
67301 cctccttgaa aaaggacaaa tataaatcaa tcatctctct gcatggggcc
67351 ccagtgttta cccatttact caggaggagt cagctcactc accagctcct
67401 atttgggttc acaaacttta aatagtataa atataaaaac agaagctttc
67451 aattcatttc tggtttcaca ttggtaacca aaaaagactg gtgagaagat
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67551 ctgcagtatt ctaagataat tggttttact aatgtggaac aattaatgcc
67601 agccataaaa tgtataatta aacattttat tattacaaat tcaaatttgt
67651 tctcttttcc ctatatcacc atttaattga acaacaatac aacgaaaact
67701 ggtcgcctta aaaccaattt gaaacaggtt gttcaggagc aacaatacaa
67751 aaacaaagtg tagactggaa tgtattacat tttggccaaa caaaaagatt
67801 tgattcattc tggttcatga agttagataa tggtgtttat ggttttgaaa
67851 gttcactgaa acttcttcac tgaactggtt tctttctgat gcattttctt
67901 gagttctagc catgactgcc acagtagcag tcctgggatc agaacccaca
67951 caccgttaaa aaaaaacagg taaagccaac agtacagcca gttgctggtg
68001 ttgaggttgg ggcttctggt gagccactct gggaggaagg tcatccagca
68051 gccatacagc tcgcacacgc acagggtgat ctgcaggaaa tgcctgttgg
68101 agagaaagaa gcccgggatg aaccaccagc ttggcacagt ttggcatcag
68151 agtcatgaca tcttgtctgt aatggcggca tcaacagtct tcgctatgaa
68201 aaccgtccta agttgggcct cagatgttgg gtggtgctat tttgatgggg
68251 gcaagtcaat ctaattaatg aaggctcatt ctttccttag aggagcaaca
68301 ctgccctttc tagattattc tcagagttaa gtaaggaccc tcagggatcc
68351 tgacccattc ttggggaaat ttggtgagat cacacctgac ttaacacaga
68401 gaggcctgac tctgaatctc accatgagcc attataaaag gggagagtga
68451 gtaataaccc cttcctcaaa cagtgtagtg cagactaaat gagatatgag
68501 gataaagggc caagcgatgg gcaagtaaaa ggctcaataa tgcaaatatc
68551 acaaatgttt aaaataataa acacatgggc acacgtagta agtttgcaac
68601 cagcgtcatg gagtgaaaaa tacgtcaagg taccaaggaa aaatttaatt
68651 tttattgcca actatctctc taaaattggg tggggaagga agctttaaat
68701 aagacttctt cattacaaga tggtggaaaa tggaatgcag ctgtgcctac
68751 ttgaaattgt tttagggatt catctcagga tagcaatcta ttcaccccag
68801 gccactctgt ccctaaggaa agaaaaggaa ggaagggagg agagtttata
68851 gtctctgagt ctgataggat ggataatttt ttcatccttt ttttttgaga
68901 cagagtctcg ctctgtcacc taggctggag tgcagtggca cgaacgtggc
68951 tcactgcaac ctccacttcc caggttcaag caattctcct gcctcagcct
69001 cccgatagct gggacttaca ggcacccgcc accgtgcctg gctagctaat
69051 ttttgtattt tgagtagaga cggggtttca ccatgttggc caggctggtc
69101 ctgaacttct gatctcgtga tccacctgcc tcggcctccc aaagtgctgg
69151 gattataggc atgagccacc gcacctggtc tctctgcact ccgcctgccc
69201 catatccttc acaatctgct tctgagaaga tttcctattt atcttgcaag
69251 tctgactcca aattatataa gataatttac tttttgtcaa gtgggacagg
69301 agttttcttg aatgatttgg ggggaaaagg atggacgtat tatggtttta
69351 ttctccaaag tattggtggc aaatcatcca agagcgttag caccattctt
69401 gcctctacag agtctaggtt gttattaaaa taatatttct catatttttg
69451 attctgaaaa gtctgaaatg atcctagtag caccatcacc cttatctcac

FIG. 7 CONT'D

69501 ataaaataat tttcatttct cttctgcttt ttttttttgg agacagggtc
69551 tatgtcaccc aggttggagt gcagtggcgt gatcatggct tactgcagcc
69601 ttgacctcct aagcccaagt gatcctccca cctctgcctc ttaagtatct
69651 gggactacag gcgtgtgcca ccacgcctaa tttttaaatt ttttattcct
69701 tgtagagaca gggtctcatt gtattgccta ggctggtctc aaactcctgg
69751 gatcaggtga tcctcccgcc tcagcctccc aaagtgctgg gattacaggt
69801 gggagccacc gcgcccagcc tctattcttc cacctttttat ctaacaaata
69851 tatgtggtca caacctactc caaaggtcac ctaagtgttg ggacatgtaa
69901 tgtctcccct ccttccagca ggacagaaga agggcaccta ccggtaatat
69951 ttttctttga ctatggcata aatgaggaac aatgccagag acccatccag
70001 ggcgacggtc agaatttcca cagacacaat ggttggatca aaataaaccc
70051 atcttgcatc agctttgcca tattctttcc ctaaagacaa aatccatgtt
70101 gttactcaaa tggcaacaat ttttatgaca gttcatggaa atgacctttc
70151 tttcctttaa ggtggagata aaatgagtaa tcgccactct ctctgcattc
70201 ttcacgatgc cttagtggaa ggcaggagaa gccctgggac caaaatgcgt
70251 ttaccacctg acacaagcac tgagaacagc agcaggttta caggtgtcca
70301 atcattcagt ttccagcatg ctttcacata cacgccctcc tcagccccac
70351 cctcttcaac ataagtagca gaattttaaa agaattcaac atggtcagat
70401 tttgcaaaga caatctccag tcatgatctt ggtaaataca ttgtaattcc
70451 ttacttcaaa atttccatat aaattctgta agtataatgg agatgtggga
70501 aatttgttat gaaggacatg tttataaaaa acacgtttat ggccaggcac
70551 ggtggctcac acctgtaatc ccaacacttt gggaggccaa ggcgggcaga
70601 tcacgaggtc aggagatcga gaccatcctg gccaacatgg tgaaaccctg
70651 tctctactaa aaatacaaaa aattagccag gcatggtggc gggcacctgc
70701 agtcccagct gaggcaggag aatggcatga acccaggagg cggagcttgc
70751 agtgagccga gattgcgcca ctgcactcca gcctgggtga cagagcgaga
70801 ctccgtctca aaaaaaaaaa aacaaaaaaa caaacaacca aaaacttgtt
70851 tcttggccag gcacggtggc tcacgcctgt aatcccagca ctttgggagg
70901 ccaaggtggg cggatcactt gaagtcagga gtttgggacc agctcagcca
70951 acatggcgaa accgtgtctc tactaaaaat acaaaaagta gctgggcgtg
71001 gtggcgcatg cctgtaatct cagctacttg ggaggctgag gcaagagaat
71051 cgcttgaacc caggaggcgg aggttgcagt gaaccgagat cgcaccactg
71101 cactccggcc tgggcaacaa gagctagact ctatctcaat acaacaacac
71151 gtttattaat aacagaagag aaactaggtg ctgaagggac agtgggcagg
71201 gaggggagga gagagcccag actgcagaat gaatcggagt gggcagaggg
71251 gcatctccgc ccacagggac agggaactca caatggctct cacacagtct
71301 cagctgtgct gcttggggag ccagtgtgct ctcagagatc catccagacc
71351 cattatcaga gtggtttctt ctcaggaaca ccatgactca gaaagtcttt
71401 tcagggctgg aatgatggcc aggtattatg gaggccatta aaaattattt
71451 aattactttc ttaatttgta aaagtaatac atgctggtcc taagatctca
71501 aatgattaca gtgaaaaaat ggaagtgatc acacctcgtc tccccctttа
71551 atactgcctc gcattattca gaaaaggtgt gaagtccaca gaggagcctg
71601 tgatctgcta ctgagcagca cacagctctt gtctcataaa gaccagagga
71651 aggatccctc agggcctggg acaaaggttt ctaacaaaag gctgtcctaa
71701 gagaaaggac aataagagga ttagctattt aatgggataa cacacaaggc
71751 acatgctgag ggaatgttct gtgagaggcc accgagagtc atcagcctgt
71801 ccttagctga ctgtctgcag tctcctgtgc cctccaataa ctaactggaa
71851 aacaatgtca tattgaaacg tttctcctct aaatttaaat atacatacaa
71901 taggtgaaat gtaccagtta gtgcacctaa aatctaataa aatatcacct
71951 aagtaaaatg tcagttcttt aggaacaaaa agagatattg accaagtctt
72001 ttttttttt tttttgagaa ggagtctcac tgttacccag cctggagtgc
72051 aatggcatga tctcggctca ctgcaacctc tgcctcccag gttcaagtga
72101 ttctccagcc tcagcctccc aaatagctgg gactacaggc acccaccacc
72151 acactcagct aatactgact gactgagacg gagtctcact ttgtcaccca
72201 ggctggagtg caatggccag atcttggctc gctgcaacct ccgcctcccg
72251 tgttcaagca attctcctgc ctcagcctcc caagtagcta ggattatagg
72301 cactcaccac catgcccggc taattttgta tttttaatag agatggggtt
72351 tcaccatgtt ggtcaggctg gtcttgaact cctgacctca ggtgatccac

FIG. 7 CONT'D

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72401 ctgctttggc ctcctaaagt gctgggatta caggcttgag tcactgcacc
72451 tggcctaatt tttgtatttt tggtagagac agggtttcac aatgttggca
72501 aggctggtct caaacttaac ctcaagtgat ccatctgttt tggcttccca
72551 aaatgctggg attacaggcg tgggccaccg tgtccagcct tcaacaagtc
72601 ttttttttt tttttaagca tttggaaggt gttatggtag gccctgataa
72651 tgcagctgca agtaggacca tgttggccct tagtggccca catcctagtg
72701 aggctgaaaa ccaggcagta agtggcggtt agcgaatatg agggcaggga
72751 agaagtggca ctgaagccag actacgaact tcagggaaga cttcctggag
72801 gaggtgtttt gatcactgcc tctcttccct gttggtgagg gatggacttc
72851 tgcctgaggg ctatggtgat ggctgaacac acaagacccg acactgggca
72901 gatgagatgg aggaggttta ttagttgcac acactgtggc ccgggaaagg
72951 aggacatctc gccatgcagg gccacatagg ggttgcacct gggaacagtg
73001 ttcgggcagg ggccacgcag gcaggctttg cagtaacaag aggaggggt
73051 gggatgagcc ctggttcccc acagaggatg tgattggctt gtctggataa
73101 ttccacaggc agactggtgg gaactgaagc ctgctactga ggggacaagc
73151 atttgtcccc tccaaatctg tgcctgctcc ccttgatagg gagagctatc
73201 tggttaggga accttatatg tggaagcaga gtggggaggg agacttgcag
73251 tttggccatc tgaggccccc ctggatctta ccaggtatca aagcagacat
73301 aatactgaat cccagccagg gagggtggct cacacctgta atcccagcat
73351 tttgagaggc cgaggcgggt ggatcagttg aggtcaggag tttgagacca
73401 gcttggctaa catggtgaaa ccctgtctct actaaaaata caaaaaatta
73451 gccaggcgtg gtggtgggcg cctgtaatcc cagctactcg ggaggctgag
73501 gcaggagaat ggcatgaacc caagaggcgg agcttgcagt gagccgggat
73551 agcaccactg cagtccagct tgggcgaaag agtgagactc cgtctcaaaa
73601 aaaaaaaaaa aaaaaaaaac aaaaattagc tgggcgtggt ggcgcacacc
73651 tgtagttcca gctacttggg aggctgaggc aagagcatca cttgaactgg
73701 gaggcagagg ttgcagtgaa ctgacattgc gccactgcac tccagcctgg
73751 gagacagagc gagactctgt taaaaaaaaa agaaaaaaaa aaaaggcaga
73801 cataatactg aatcctaatt tcaggcctta taccacaaga gatgactcca
73851 gatctgagtg gaaaataagg gtgtttcagg gaggagcatg tgcaaaggcc
73901 tggagctgag aggtagcgtg tctgaatcta cagacagttt agcagagctg
73951 atggtggggg aaggttaatg cgtgagagga aggtagggga cggatagtaa
74001 ggggccctgg aatccaccag tcccagcgca tctccctgtg gcatctccct
74051 ctggcagtcc ctctggcatc tcctctactg ctaaacttta accatctctt
74101 tgcttattaa acactgaaac aataaaaagg caaacaggag cattaaaaag
74151 cctgacgatg tgatcatttc cattgattct gtgactgata actggactta
74201 ggtgaggttt acaaggaaaa gatgcaaact aagggtcggg gtagatttcc
74251 tcaaccagag ccattgttgt gtcctcaacc agacagtgga gaccaggaga
74301 tgctgagtat tcatgaggtt tatggctggc cctgcatccc agtgaagcca
74351 aggtcagaac acaggtcatc atcagaaggt cctgccctag acacacggta
74401 tcagaatctg catttgagta agattcccag gtgatctggg gcactttgga
74451 gtctgggaag tactacttgc tttacattat ctactggatt tttactttca
74501 tgaaaataaa ggacaccttc aataaatgag tttttactgc gttttggttt
74551 ttagaaatac ggtcttactg tgttgccctg gctaaattca aactcctggg
74601 ctcaaataat cctcctgcct cagcctccca agtagctggg gctccaggct
74651 cgtgccactg cacccagcta gttttcactt ctttaaggtg cataatgtaa
74701 acgtgaagat gatagagaaa gcctgtgtta gacatttgca tttcatggga
74751 ttgagccaaa tctgggctgt ttgctttctc tcatgccagg cagggcagcc
74801 aggggaggag gtgtcagcat ggcatctggc aaaggggaga agaggacact
74851 cagcagggag gagccatgac tcaggctggg gtccgtcagc ctctgggctt
74901 caccagcaat ccccaggcag agtttaatgc agccaatcaa aagtgcatag
74951 ctgcattcag ctgagccctg gatctgaagt ggctctactc tggtcaaggg
75001 ggctcaaact ccttggctag gacttgaggc atcaaagatg acacctttc
75051 ctttgggaag tactaatgag cctactcaat tctctagatg tttcctaaca
75101 ctagtggtaa acaggagtcc cccacacaga tcctagctgg agatgatttt
75151 agagtcacaa agaaatgaga tatatgggcc aggcgcggtg gctcatgcct
75201 ataaccccag cactttggga ggccgaggtg ggcagatcac gaggtcagga
75251 gatcgagacc atcctggcta acatggtgaa accccgtctc tactaaaaat
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FIG. 7 CONT'D

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75301 acaaaaaaat tagctaggcg tggtggcggg cgcctgtagt cccagctact
75351 cgggaggctg aggcaggaga atggcgtgaa cctgggaggc ggagcttgca
75401 gtgagccgag atggtgccac tgtgctccag cctgggggac agagcgagac
75451 tcgcctgaaa aaaaaaagaa aaaaaagaaa tgagataaat gatgcaaagt
75501 ttcagaagca aaacctgaaa gcagttatcc tgagaaaggc agttttataa
75551 agtggtaaaa aaaaatacct gttggtattg acacagtaca tggtagaata
75601 tcaatgctaa ttgaatattg actgacaatg agcatgaaga cttttggaaa
75651 ggatctacaa gaccacaaat atatatgtac aataaaaaga aagttgatat
75701 taaaagtatg ggaaaaccac ccagtttaaa ccccacaagc tcttccatct
75751 gcactcacta ccaacatttt ttttttttt ttgagaggga gtcttgctct
75801 gtcacccaga ctggagtgca gtggcgtgat ctcggctcac tgcaagctcc
75851 acctcctggg ttcacgccat tctcttgcct cagcctccca agtacctggg
75901 actacagggg cccgccacca cgcccagcca atttttata tttttagcac
75951 agacaggatt tcaccgtgtt agccaggata gtctccatct cctgacctgg
76001 tgatctacct gcctcagcct cccaaagtgc tgggattaca ggcgtgagcc
76051 accatgcccg gccattcact accaacattt tttattttat gtattgtttt
76101 ttagagatgg actcttgctc tgtcgcccgg gctggagtgc agtggtgcaa
76151 ctgtgactca atgcagcctt gaactcctgg gctcaaaaga ttctcccgcc
76201 tcagcctcct gagtagctgg gactacaggt gtgcaccacc acacctggct
76251 catttaaaaa actttttta aagatagggt cttgctatgt tgcccaggct
76301 caaatattgt ttaatataat agctttatta agatgtaatt cacatgccac
76351 acaatctacc tatttaaata attggtttta gtagaatcac aggtttgaat
76401 caccacaatc taattttaga acatttcatt accccaaaaa gaaatccgtg
76451 cccattagca gtcactcctc atttcccccc aacacccccа cccctaccct
76501 cattcccacg caaccagtaa tctacagtat ctctacagac tcacctattc
76551 tggacatttc atataaatga agtcatacag tatataatag aggcgtttga
76601 cagtcacact tgcaataaac ctcctccaac atttcaaacg caaacgtttt
76651 taattactta cataaagaag caatcaagcc atcggaattt gcaacgtttc
76701 ctactaaaga caagtagaca aaagggcctt cctagagagg agaaaatgaa
76751 gacatgctct aatacagcat cacaaccaca ggatggcact gtagacacat
76801 ggcattgcct ggctccatcc cccacccttc tccatggctc acatcctggc
76851 cacagcctgg aaacatccat acaaccttgt gggatacaat cttgggacct
76901 ggttacctgg accttggaaa tgggtatgtc tcaccctaat gtacaattaa
76951 tgttgttttt caatgattgg cactgtaaaa gcagagatgt gttcttatgt
77001 ggaaaaagtg aaatttttgc ataagagttt aactactgta ttaaatagag
77051 taagctctag attattccag ggatcttaag tctttgcgga gaaccccaca
77101 gaagttcact ttttttaac tcaaaaaaat ctaagatctt aaagagaaag
77151 gcaatcaagt ttataccagc attgagcaat cctcccccct tctcctatat
77201 aagggcaagt ttaggaagat ttaaaacagt tacaggctac atttaacatt
77251 caggtaataa aatatctgca attacagtta gtattttccc atcactgaag
77301 tgcttctttg cctaagattt ctaaaactaa acagctagaa gccactggga
77351 tatgtaattg tcatgttgct cctttgaaca aattttgctg ctggtcaata
77401 aaacttttt ctcattcctt ttaaacaatc atttgtatga cattaaaact
77451 gggtcctgcc accccagagg tcaccactct caatcacatc tctttgcagt
77501 tcccgcggtg atttcataat atacttacac tgctatttcc ttcgactact
77551 agcaggaaaa gctattgttt gattgatact ccttcctctc ccgtttccag
77601 tccttcgagt ttctgatata ttattctatt acttacacaa atttgtaact
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77951 atttctttcc ttagggatcc cgtatcctga ctcctgtgtc atttaaggat
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78051 tctgaagctg aagataggct ggagtgtggt ggtgcaacct cagctcactg
78101 caacctacgc ctcccgggtt caagcgattc cagtgcctca gactctcaag
78151 tagctgggac cacaggcgtg tgacaccaca ttcagctaat ttttgttatt
```

FIG. 7 CONT'D

78201 tttagtagag atgggatttc accatgtggg ccaggctggt cttaaactcc
78251 tggcctcaag tgatttcccc acctcggcct cccaaagtgc tgggattaca
78301 ggtgtgagtc accgtgccag gctccaaaaa tcatatccct taaaggacat
78351 taaaaaaatc atatgagaaa aatagctgtg tttttaacaa ataagtactc
78401 cccagtccac ttactttgca acactttatt tttaccagcc aatttttat
78451 ttttagcaga gccatagggt gaaatccata ccacttcctt gctctggcct
78501 gagaactttc tacacaaagc acatccactg ggctggccag tggggcaatg
78551 gggctggact ggatttgacc ctctctaggc ctcaggccat ctatctgtaa
78601 gatgaaggac ttccttccta tagattgtaa atctcatcct aaaacgaaat
78651 gcaacctcca ctggcgacct ctttcactgg acccattagt aagatgtgga
78701 gtctgacacc aggttgcaga cctttccaca gaagcaactc tgggtaagag
78751 caagatgggg aactggaaat cagtaacatg caggaaccta tgagtctata
78801 acaaatccgt ttccttttac atctacttgt tgaagctcta ctcatttttc
78851 aaatcccagc cctaaccccc ttcttcaaga aaccttcttt gacctcctag
78901 tgagaattaa tatctcactc tcctaaatct cccatgtggc taagtttgtt
78951 tctgtaacca gcagctatct gctcgctatg gacccccagc tcccattgga
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79101 tacaacaaat tacttataaa gaaggatgcc ctgaagaggc ttttagactg
79151 ccctatctct tactgtatta atgtcctaaa tgtaaagata gtataataca
79201 tatcaagtgt aacgaatatt catgccttca aatgctgatc aggtgtcacc
79251 tcctccagga agcaagattt tactattctc ctgctgggag gtcagtgccc
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79451 atagaaaaca agacagttaa aaataataat aacaataata ataatctggt
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79551 agatggcaaa taagcacatg gaaagatgtt caacctcatt agccaccaag
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79651 tggctaaaat aaggttgggt gtggtggttc acgcctgtaa tcccagcact
79701 ttgggaggcc tgggcgggcg aatcacgagg tcaggagttt gagaccagcc
79751 tggccaacat ggtgaaaccc cacctctact aataatacaa aacaattagc
79801 cgggtgtggt ggtgtgtgcc tggagtcccg gctacttagg aggctgaggc
79851 aggagaatcg cttgaaccgg gaggcagaga ttgcagtgag ccgtgattgt
79901 gccactgcac tccaaccttg gcgacagagt gaaactgtgt ctcaaaaaga
79951 aagaaaagga aaggaaagga aaagaaaggc taaaataaaa aatagtggca
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80151 cgacccagca attccacagt tgggtatttc tcccagaaaa ataaaaactt
80201 atcatcttta tacaaaaaca actacacgaa tgttcatagc agctttattt
80251 gtggtaacta aaaactgatg tccttcaaaa agccaatccc aaaagcttac
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80351 ttcactctgt tgcccaggca ggagtgcagt ggctcgatct tggctcactg
80401 caacctccac ctcccatgtt aagggattct cttgccttag cctcccaagt
80451 agctgggatt acaggaatgc accaccacgc ccacctaatt tttgtatttt
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80601 cttgagccac catggccaac cctgtggtta catttatata acatttttct
80651 gaaatgatag attttagaaa tggaggacat tgttagtggt tgccaggggt
80701 taagggatgg aggtgtgggg tgggggatg tgtagttata aaaggaaaac
80751 actagggatc cttgttagtg ctggaactat tcaatacctg ggctgttgtg
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80851 cacacacaca cacacacaca cacacaccac acaaagaaac tgacagtctg
80901 aaaaagatca gtggactgta tcaatgtcca tatgatggtt atattatact
80951 atagttttac aaaatttttg gtaccaaaat tatcaaaata gaaaataact
81001 ttttcttttt ttagacagag tcttgctccc caggcaggag tgcagtggtg
81051 cgaccttggc tcattcaacc tccgcctcct gggttcaagc aattctcctg

FIG. 7 CONT'D

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81101 cctcagcctc ccaagtagct ggggttacag gtgcccgcca ccatgcctgg
81151 ctaatttttt gtatttttag tagagatggg gtttcgccat gttggccagg
81201 ctggtcttga actcctgacc tcaggtgatc cacctgcctt ggcctcccaa
81251 agtgctggga ttacaagtgt gagccactgc acctggctga aaataatttt
81301 ttaaaaaccc accaaaatgt tagcatcgtg gaaacctggg aaaagtaaac
81351 aagggacctc tgtattattt cttacaactg tatgtgaatc tacaattacc
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81501 ttaaaaaaaa aaatttagaa taggccaggc tctggcctca gagagcttat
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82101 tgcgttacaa acctgtacgg cattactgta ctgaatactg taggaaatta
82151 taacacaatg gtatttgtgc acctaaacac agaaaaggta atgcactgca
82201 ctacaacatt atgacagcta tgatgtctct agacaatagg aatttttcag
82251 ctccatcata atcttatggg acaaccatgg tatattcagt cccttattga
82301 ctgaaatgtc cttatgcagt gatgactgta tttgtccttt catgtctggg
82351 ttatttcact tagcatagtg tcttctaggt tcatccatgt tgtagcatgt
82401 gtcagaattt cgtttctttt taaggctgaa taatattcca ctgtatgcag
82451 gcactgcatt ttgtttattc atttgctggt ggacatttat gttgtttcca
82501 ttttggggtt attgtggctc ataagtctgc tgctatgaac actggtttgc
82551 aaggatctgt tggagtgcct ggtttcaatt cctttgggtg tatatgtaga
82601 agtggaattg ctggatctta agataaatgt tcagctttct gaggagttcc
82651 cacactgctt tctgcagcgc tggcaccatt ttgcattccc accaacagtg
82701 caccacagtt caaacttctc cacattcttg gccaacactt gttattttcc
82751 tttgttgtta ttgtttttt ttttttaata gtactcatcc taacgggtgt
82801 gaaggagtat ctcactgtgg ttttgatttg catttcccct aatgactgac
82851 tagtgatgct gaacatattt tcatgtacat attgagctct ttggaggaat
82901 ttctattcaa atcctttgcc taccttgag gttttttta attgttaaga
82951 atgtaagttt taaaatggag atatcatcac ttggaatttg aaaccactgg
83001 gctagactgc cccatgggca agatgaacca ataattctca aagcatttgg
83051 taaagcagag caggggccat tttcataaga atctgagaac aagatctgcc
83101 cactcatcat gagggcaagg ggtctgcagt gaatcttgag ccccctccc
83151 ctgctgcctg gtaacctcct cttcggtctt taaaacccta gtgaggccgg
83201 gtgcagtggc tcacgcctgt aatcccagca ctttgggagg ctgaggcgga
83251 cggaccacaa ggtcaggaga tcgagaccat cctggttaac acggcgaaac
83301 cccgtctcta ctaaaaatac aaaaaaatta gccgggcgtg gtggcgggca
83351 cctgtagtcc cagctgctgg ggaggctgag gcaggagaat ggtgtgaacc
83401 cgggaggcgg agcttccagt gagcccagat cataccactg cactccagcc
83451 tgggcgacag agcaagacta tgtctcaaaa aaaataaaat aaataaataa
83501 ataaataaat aaataagaaa gaaaccccgg tgaatccttc cttcctcggt
83551 gccacctcta ggcctggaca gtcttatcac tcaccagact gcatgacaat
83601 gatttgtttc cctctctgct ttccctacta ttaaagctcc ttaagggcgg
83651 ggcaaggttg attacatgca ataaacacca aatacacata cagtgagatt
83701 ttatagataa tcccaggctg attctccaga ctttccacag ctatccctga
83751 atcatgtggt attagccggg ccacctaatt ccttagtcct tcctaatttt
83801 tttttagtga tagcagagat gacatgggtc cagaggtgtg acttgcaaaa
83851 gtcctttgtt gaaacattca gtatattaaa aaaatgctct cgtttgattt
83901 aaaaaatagg accattgcag acatgggcag gtctggtggg tcagtgtgca
83951 ctggcactgt ctaaatagca ggtcatcctt ttccgggaag gggcagtggt
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FIG. 7 CONT'D

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84001 tctacatgag gacactgccc ttgtgtttta tgtaaaaagg aagccaaata
84051 gaccaacaaa cacttgtctt ttcttcatga agtaggtaat acaccagtag
84101 caactccctg attcttccct gaaacaatgc taagagctgg tatcccttcc
84151 ctgtatcatc acacttgtcc actcccactg cagcccacgt caatcctgct
84201 gcatcccacc ccaggaaggt cattcagatc aaagtcagaa aaagcacatg
84251 gtgaaaagga ggtgagcctg ccaatatcag agttccaagt gacatctctg
84301 aacattctgt gattctgaga ctggctggct cttaccctaa cagaactcac
84351 aaatataaat cagcaaacac aggcccacca ctttaggctg caccatccac
84401 agctgattct catcaataaa gacgccatgc aaaaacaaac aaactaggtg
84451 tgggaggcag aggccccagc ttcagaatga gacctgctat tatggtttta
84501 aagattgtaa gggctggacg tgatggctca cgcctgtaat cccagcactt
84551 tgggaggctg gggcaagcag atcacctgag gtcaggagtt caagatcagc
84601 ctggccaaca gtgaaactcc ttctctacta aaaacacaaa atacaaatat
84651 tgtgtctgga attggtgggt tcttggtctc aatgacttca agaatgaagc
84701 cgtggaccct cgcggtgagt gttagttctt aaagatggtg tgtcagaagt
84751 ttgctccttc tggtgggttc gtggtctcac tggcctcagg agtgaagctg
84801 cagaccttcg cagtgttaca gctcacaaag gcaatgcgga cccaaagact
84851 gagcagcagc aaaatttatt gcaaagagct aaagaacaaa gactccacag
84901 cgtggaaggg gacccaagcc ggttgccggg gctggcttgg gcagcctgct
84951 tttattccct tatctgaccc cacccacatc ctgctgattg gtccatttta
85001 cagagagctg attggtccgt tttgacaggg tgctgtttgg tgcgtttacg
85051 aaccttgagc tagacacaga atgctgatta gtacatttac aatcctttag
85101 ctagacacaa cagttctcca agtccccact ggactcagaa gcccagctgg
85151 cttcccctag tggatcccgc accagggccg tgggcagagc tacccgccag
85201 tcctgcgccg cgcgccggca ctcctcagcc cttgggcggt caatcggaca
85251 ggtcgctgcg gagcaggggg cagtgccctt caggagcggg ggtggtgccg
85301 gctcgggcat ggcgggctgc aagttccgag ccctgccccg tggggaagcg
85351 gctcaggccc ggcgagaatt cgagcgcagc gcggacgggc cagcagtgat
85401 ggggaaccca gctcaccctc cacagctgct ggcccgggtg ctaagcccct
85451 ccttaactgg ggccggcagc acccaccaag ccagcgccca cccagaactc
85501 tgcccgggag cgccgtgcgc agcccgggtt ctcgccggcg cctctccctc
85551 cacacctctc cacaagcaaa gggagccgct ctggccgcgg ccagcccaga
85601 gaggggctcc cacagtgcag ccgcgggctg aagggctcct caagcatggc
85651 cagagtggat gccgaggctg aggaggcacc gagagcgagt gaggcctgtt
85701 agcacgttgt cacctctcaa tattaaaaaa tacaaaaaaa taaaaattag
85751 tcaggcatgg gtggcacgcg cctgtattcc cagctactca ggaggctgag
85801 gcacaagaat cgcctgaacc tggcaggcgg aggttgcagt gagtcaagat
85851 cgtgtgtgtc tgtgcctggg tgacagagtg agactccgtc taaaaaaaaa
85901 aaaagactat tcaggggctt ttgaataaaa tctgctctaa ccacacaaag
85951 accgaagatc aaagccactg aaaacactac ttactatttg ccaggcacca
86001 aaattatctg tggaattgta gagaatggag acagttatag ttcctcctgt
86051 gaattcatgc tttatattaa atgaactgta cagtactttc tttcttctcc
86101 cttaaaattg tttttagact ctggggcatg aagtttatgt taaataacca
86151 aataaacatg gaaggttatc agctccaaag tctttaacca caacgtatga
86201 tagagatcca gccatctgga actaagattc atgtttgagc tcaacaagca
86251 ctgaggatct aaggatcaga tgaaaggtgc ctggtcaaca gcaaagggcc
86301 acatgcagga tgttgctgta attgggaagg cagggctcca ctaggtgtca
86351 ggcgtgatat ggttaagctt gagcaaaagc aagtacaaca gattgtattt
86401 ctttcttttt ttcttgttct gtcacccagg ctggaatcca gtggtgttat
86451 cacggctcac tgcagcctct cagactcctg ggttcaagca atcctcctgt
86501 ctcagcctcc aaagtagctg ggaccatagg tgtgcaccat catgccaggc
86551 tgatttttct ttttttaatt gtagagacgg ggtctcgtta tgtggttgag
86601 gttggtctag aactccttgg ctcaagcgcc tcctccctca gcttcccaaa
86651 gtgccaggat tacaggtgtg agccaccatg cctggccgag attgtatttc
86701 tgacattcat ggctactttc acctctccgg gcttaaattt cctaaccaag
86751 aaaaaaatag agtcaagcta tatatatata ttagtcaata tatgtctagt
86801 gaatgaataa gtaataagga gaggcaggct ggatctgcat ctccaccttt
86851 tgacagagtc gctcaccaat ttccagcctt gagcacagca cttggaagat
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FIG. 7 CONT'D

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86901 gcatgttgct tactgagagg atggtgagga ccctaagcgg aggcccaggt
86951 agtgtctgtc agcagagggc caggttggtg ggaggggcct gcttcagcac
87001 cagcacttcc agtgggcatg agccatgagt tctacacctg ccaagaccca
87051 cgagccacag ggaagtcaag ctcacagcga ccaccagggt agatccctga
87101 ctggacatga tgaggtcttc gaggactcct gtactgtcat ttctatgata
87151 acatgaaagg caggcacctg tccctgaaga agacctgact ttttagagac
87201 agacttactc agtacataaa cgtaaagtga catgaggtcc agatcacttt
87251 ccagtacttc agcagtaaca atgaaaaagg gagggagaga aggacaaaaa
87301 cagaagaaaa agtgacagat gggcaagtgc agcaaaactt gaaaatgctg
87351 aatctgctca ctgatactgt actagtctct ctacatttgt gaatgtttga
87401 aattgttcac tgtaaaactt aattttaaaa agatacatag gcttatgcct
87451 gtaatcccag cactttggga ggccgaggtg gacagatcac aatgtcagga
87501 gatcgagacc atcctggcca tcatggtgaa acccccactc tactaaaaat
87551 acaaaaatta gctgcgcgtg gtggcacgcg actgtagtcc cagctactca
87601 ggaggctgag gcaggagaat tgcttgaacc agggaggcgg aggttgcagt
87651 gtgccaagat tgtgccattg cactccagcc tggtgacaga gcgagattcc
87701 gtctcaaaaa acaaaacaaa atacaaaaca aacaaaaaaa atatatgtga
87751 tacatgttaa agttaaaaaa aaattataaa aaggtacaaa gcaaaggata
87801 aaagcctctc tccctcctga ctcccaatca cgtttcccag agatgaccac
87851 tgttaagttc catggtagcc ttcaagaatt tttcaggttt atattaataa
87901 gcagttataa atatttaaaa tattttctcc ctgctatgaa tttttctatt
87951 attaacccag agggtgatga ggaaaatttc ataatactta tttaagttct
88001 gtatatcaaa aaatttggtt taaaaaatac agtaaagttc ctactggaca
88051 tatgttataa aatataactg aactatattt aattgagctg ctaacaaaat
88101 cagcttaaaa attaaaatgt attatagcaa ataaagaaag gccagtctca
88151 tttttctctt aagatgtccc aggcatgaaa tttttttctt ttttaagat
88201 ggtctcgctc tgtcgctcag gctggaatgc agtggtgcga tctcggctca
88251 ctacaacctc tgcctcccag gttcaagcaa ttcttctgcc tcagcctcct
88301 gagtagctga gattacaggc acacgccacc acgcctggct aattttggta
88351 tttttagtag agacaggttt tcaccatgtt ggccaggctg gtcttgaact
88401 cctgacctca ggtgatctgc tcacctcagc ctcccaaaat gcagggatta
88451 caggcgtgag ccaccacacc cagcccaggc atataagggt tttaacaacg
88501 tattttatag acttaaagac agctataagt caaagctcag atcaaacaaa
88551 tgattaagtt atgccagcta tttccattga taatatccaa tttaaagagc
88601 atgctcaatt tactcatttt aatccttaaa gaaaaattta gcagaaaaag
88651 tccttaaaga aataaaaaga acacatactg aggctgagtt tatatttgaa
88701 tgtatctgtt tttttgttgt atgtttgaat gaagacctag agaaaacatg
88751 gcaacattca ctttcaagag tgagagaatg aagtggagca ggaatagaat
88801 cagtacataa atcctgtcaa catttattag catttgcaaa tctgactcac
88851 aaaacctcag cctaatcaga ctggattttt gcatgtcatg acaacagcat
88901 acaacattgt ttctggaggg atcagctgcg gcagcctcct actgtccttt
88951 ggtgacaagg ctttaatgac tccataaatg tatgctgccc agctgctgcc
89001 cgcttaatta gacgatgatt tccacttgat tgaacctgcc cagcagccag
89051 ttgtcaccta acattcacag gagaccacac tggtctcttt cagaactacc
89101 aggatcaaac agtcacacga gttctatggt tcctacaaca tggcagtata
89151 ctgtttgatt taggacttga atcatatttc tccctttta agaatatacc
89201 cttctctgcc agaaggttgt tacttctcag attaaagatg tgaaaggaaa
89251 ccttccaagg ctcatcttaa ttggacatat acatcatcac tttagtatac
89301 agggatggga tgacaaatgc taatccgggt atggaatatg gcaaggagga
89351 ttcacactaa gaggacagag aagagaatta catttactga actctggcaa
89401 gtgccaggtg ccttacatct ttgccattca aacacggttc atgaaccaca
89451 gcctggcact cacttgggag ctggttacca atacagaatc ttggatgatc
89501 cctggatgat ttgtgtgcat ggccaagctt gagaagcact acgctaagtt
89551 ataaggcttt atttaattct cacagccgtt tgaagaaaac attatttcca
89601 tacttcacag gtaagaaaac taagaaaatt tccttccttc ttttcctcct
89651 cattacagaa aggatttgca ggggaaaggg gcatgcccaa gtttctgagc
89701 tggtcatcgg gaaagctggc attcaagggt gcatctgctg catcccaaag
89751 gcccttgttc tttccacctt cccccaccgc cccaggctcc ttggatgatg
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FIG. 7 CONT'D

89801 gtcagactcc acctagaacc gtgtttagga actgatactg cattcattct
89851 ttcattcatt catccatgaa tttattgagc tagagtctcc ctctgtcacc
89901 caggctggag tgcaatggca caatctctgc tcactgcaac ctccgcctcc
89951 tggttcaagc aattctcatg cctcagcctc ccgagtagct gggattacag
90001 gcacctgcca ccacgcccag ctaatttttg tatttttatt aggacggggt
90051 ttcaccatat tggccaggct ggtctcgaaa tcctgacctt gtgatccgcc
90101 cacctcggcc tcccaaagtg ctgggattac aagcctgagc tcacgcctgt
90151 aatcccagca ccttgggagg ccgaggcggg cagatcatga ggtcaggaga
90201 tggagaccat ccctggctaa cacggtgaaa cctcgtctct actaaaaata
90251 caaaaaaaat tagctgggca tgggggcagg cacctgtata gtcccagcta
90301 cttgggaggc tgaggcagga gaatggtgtg aacccgggag gcggagcttg
90351 cagtgagccg atcgcaccac tgcactccag cctggaccag agagcgagac
90401 tctgtctcaa aaacaaacaa acaaacaaaa aaaacaaaaa caaaaacaaa
90451 aaacaagcct gagccactgc acccgatctg gtactgcatt tgaaaatgca
90501 acctgtggca tgtatgaggg tgacaagttt tagtcatata catctatcag
90551 aatgactaaa aacaaaagta aaaaacacaa aaatgctaag ttttggtgag
90601 gctgtggggc aacaggaact cgcacacaat gctagtggga atgcacaaca
90651 gtacagccgc cgtggaaagc aggatggcag tttctactaa actgaaagaa
90701 tcccattcca aggcctcggc ctaggagaaa gaaaaatatg cccacacaga
90751 cttggatgca gatatctatt agcagcatta tttgtaatag taaaaaacta
90801 ggaataaccc atttgttcat taactgataa atggataaat gaattgaaat
90851 acatccatga ctggaatact actcagcaac ttacgttaaa tgaagactat
90901 gtatgtatga tttcattttt atgaaattat aggacagcaa aactttaaag
90951 acagaaggca gacgggtgtt tgttggggct ggtgatgggc actgggatca
91001 tcttcaaagg gacatgagaa aacttttact agaagcgtga tggaaacgtt
91051 ctatactacg attgcaaggg tggttacaca actctacaca atcacccaaa
91101 ttcaccaaac tgtacacaga atgggtttta ttatacataa attataacaa
91151 taaagctgga gggaggaaaa ggggaattta gaaaagtggc tgataaccat
91201 acaaatatag gtatatctca acagctttca ctataataac aataatcagt
91251 ccaaatacaa aggagagagg ccaggcgtag tggctcatgc ctgtaatccc
91301 agcactccgg gaggccgagg cagctggatc acttgaggcc aggagtttga
91351 gaccagcctg ggcaacatgg tgaaacccca tctctactag aaacacacac
91401 taaaaatagc tgagcacggt ggcacgtgcc tgtcatccca gctatttggg
91451 aggctgaggc aggagaactg cttgaaccca ggaggcagag gctgtggcga
91501 gctgagatcg cgccactgca ctccagcctg ggcgaacaga gtgagactgt
91551 ctcaaaaaat aaaattaaat taaacaaaat acaaaggaga aatacagtag
91601 caatgaaaat ataaaatgtt ttgaaataaa ctttaagaga ctgtaacaga
91651 agatttaaac aaattgagac ctacccagtt cttagaaggc agactgtatt
91701 ataaagatat catttaatct caaactaatc tataaagtta agaaaaccac
91751 aatcaaaata ccgagtatta gaacttggca aagtgaaatt atttttatt
91801 tttgagacag gatcttgctc tgtcgcccag gctggagtgc agtggtgtga
91851 tctcagctca ctgcaaactc tgcctccggg gctcaaacga ttctcctgcc
91901 tcagcctcct gaatagctgg gactgcaggt gcatgctacc acgcctggct
91951 aatttttgta cgcacctggt cagcaaagtg aatttaaaag tacatctgga
92001 aggatagatc ataattttaa agtgtttgaa aaagaatagt ggggagaagt
92051 ttgctttatc agatattgaa ctacattata gtgctgaaat tattaaaaca
92101 gtggctagaa ctggaaccaa aagattcctg aaacagaact aaattcaaaa
92151 atccccaaac atatccatac atataaaata ctttagtata tgataaagct
92201 ggcatctcaa ataagtgggg aaagaatgga ttagtcaata aatggggctg
92251 acaacacttt cttgcccttt ctccccaaaa gcgtaataaa gtgtgggtga
92301 aattgtttgt actaatatat gaacaccttt tatagatcat taaggaaaag
92351 acaaacatcc ccattgaaaa acaggctata gaaggaggat cccaagatct
92401 acgccccaga atctcgtccc aaagcctagc accaaaacag caaagcagtc
92451 ctccttcaag aaaactgaag gcagctggtc atggtggctc acgcctgtaa
92501 tctcagcact ttgggaggct gagacaggcg gatcacgagg tcaggagttc
92551 gaaaccagcc tgaccaacat ggtgaaaccg tgtctctact aaaaatacaa
92601 aaattagctg ggcatggtgg cacgtgcctg tagtaccagc tactcgggag
92651 gctgaagcag aagaattgct tgaatctggg aggcagaggt tgcagtgagc

FIG. 7 CONT'D

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92701 caagatcacg ctactgcact ccagcctggg cgagagagag agagaaaaaa
92751 aaaaaaaggg acaagaatta gagactggaa ttgtggcagt gggcagtgag
92801 gaacagacgg tgatgtgaac tggagaaggg taatgcccag cttcagagag
92851 ggcgtggcac agccactggg cctcaagatt tctcaacgaa aaaccattca
92901 caggtgttag gtgggatgca tggagagcca gccaaggccc aggttttctg
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93001 acaaaagtgt ggaagcaaca accaggcaga ggtttattag gaaacaggtc
93051 aacctccatg gccaagcaca catcagacag cgagagctgc ctgccgcgtc
93101 tgcactttta cccttcttcg gccatcctct cgcccagacc ttcatcttca
93151 aaagaaccaa gagcccccag cctgccctga ggtgcctctg gagctaccct
93201 cctgctcttc ctccgcccac caccaaacct cctgcagggc tttcatctac
93251 tgcccagctt ctcctctacc tggcctataa gcctttggct tctggagcct
93301 ccctcccatc aatcccactc tcaccattga cttcctggtt gccaggtgcc
93351 tcacctttta ttttctttct tttttttaa tggtgctaca gcaatttatc
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93651 catttttcaa ttgccttctg gccattctct ctctcttctt tttgagatgg
93701 ggtctcactc tgtcacctag gctggagtgc agtggcgtaa tcatatctca
93751 ctgcagcctc aatctcctgg gttcaagtga tcctcctact tcagccttct
93801 gagtagctgg gatcacaggc atgcagcacc acacccagct aatttttcgt
93851 agagatgagg cttcactatg ttagcaaggc ctcactatgt tagcaaggct
93901 ggtctcgcaa ctcctagcct caagcaatcc tgcctcggcc tcccaaagtg
93951 cttattacag gtgtgagcca ctgcccagca ctattctctc ttaactgcac
94001 acgaggaccc ccgactcata gttctaaagc cagattttgc tgtcttagtt
94051 aacatgatca ccattaccca tgttgctcag ggcctaagcc ccaagatcat
94101 gtccaccccc aatctacaag tggccacttt gacttaccac attctcccct
94151 ggaaagtctc tcacagttag ctttcctccc cattttaagt tccaacacca
94201 cctcagcttg cctctctctt ttttttaaat gactccccac actacagcag
94251 ttgctttttg ttgctcttct tgcccctcaa ctccatcctt tccaatccaa
94301 cctgcaccat gttgagagac aattctccat gaatatctca catcctgcac
94351 tgtctgggtc tctgagcaaa gacatttata tcaattttaa gaatgtttct
94401 ataatgagcc tttccagagt agtaaacctg ggagacagct ccctccagag
94451 aggttctagg gtggtaaaga tcaagacctc accttctcct cctcagaggt
94501 ttacattcct aagataaggt ctctccagag agaagtatgg acaggccacc
94551 accagctcac aataagatgg acgcgtagtt ctggagttcc tttcttgtaa
94601 cgcatcccac tgcatgtaca ggcagtaaca tctggccttc attatgttgt
94651 cctgtggggt ttgggccttg gggaatcaaa ctggactacc ttgttaactt
94701 ctaagttggg taaaatctcg gacgctagag tttctgactt aacacatcac
94751 cactaaatta tctttatgaa gatctgcttt ggccacgtga cttccctgct
94801 tgaaatcctt cagtggcttc tcactacaga atacaattct tacctgtcac
94851 ctttccagct ggtcctccca cttcttatgt aaaccctgtg ctcctgtcaa
94901 tctggactac aggatgtgtt ccatacacag gcattcatat cttgcctcat
94951 gtttctggcc atgcctgaat gctatacata gattgcagaa gagataaaat
95001 tttatccatg aagcaccagt gcctaggctg cccacagcga cctcagaatg
95051 gtgaccccac catttccttc ttctagtatg ttgccatggc tccttccagg
95101 taggctgatg ggaagtcagc ctgccctctg ctgtagtcat aacgagctga
95151 actgatgacc agtgctgggg cccaaggtga ctgcactctg gttggacatc
95201 tgggaaatga actgcccctg ggaatgcttg gcttgaaact gtccaacagg
95251 atagctttca atttgatggc agccaaaaaa cctacagagc tcctctcttt
95301 aagaagtgtc agggggtggc caggcgcagt ggctcacgcc tgtaatccca
95351 gcactttgga aggccgaggc aggtagatca cgaggtcagg agatcgagac
95401 catcctggct aatatggtga aaccccgtct ctacaaaaaa tacaaaaaat
95451 tagccgggcg tggtggcggg tgcctgtagt cccagctact caggaggctg
95501 aggcaggaga atggcgtgaa cccgagaggc ggagcttgca gcgagccgag
95551 attgcgccac tgcactccag tctgggtaat agagcgagac tccgtctcaa
```

FIG. 7 CONT'D

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95601 aaaaaaaaaa aaaaaaaaag aagtgtcggg ttaaggagag gcaactcatc
95651 ttctagtgaa caagtgagtt ttaattttgg ttctccccta agctctacat
95701 cttagtctta gcttgtccca cacttctggg tattcttgca ataaactccc
95751 aagcaaagac aacatgggca tgtattttct tgcagcctca actgcttaat
95801 tcaagtgctc tccccactga tctctgagac acatgtacaa agacgttggt
95851 agatgcattg tttgtaatga cagaaaaatg tgtccactaa tatgggctgg
95901 ttaagtgatc gtattcatca aatataagat acatcccaat ttagagacat
95951 taaaatatca atcaaatggc ctacagtagt tacatgatgt agttgattct
96001 tctaatatgt gaaaaaatgt gggtcttaga cttggagaac taaggtatgg
96051 tgtattcaca cagtggacta ctttgcagct ggggtaggta atggcacaaa
96101 aggaggtgtg tgtcgtgtta cctgtaacaa cctgagcttg aaaagtaaac
96151 agtcttaaac caagtggtga acacacgcat atagtttaag tatttttaca
96201 gctttttgtt tgtctaaggt atgttaaaca tttttctttt ttttcccaag
96251 atagagtctt gctctgttgc ccaggctgga gtgcagtggc ttgatcatgg
96301 ctcactacaa cctccacctt ccaggttcaa gcaattctcc tgcctcagcc
96351 acccgggtag ctgagattat gggcaccgtc accacacctg gctaattttt
96401 gtatatttag tacagacggg gtttcaccat gttggccagg ctggtcttga
96451 actcctgacc tcgtgatcca cccgcctcag cctcccaaaa tgctgggatt
96501 acaggcatga gccactgtgt ccgatatgtt atacattttt atatatatac
96551 attctgatat gctatataca gttataccca gccaatatgt tacacagttt
96601 tctctcactg ggcctagcaa catttttgtt atgttataca ttttgttata
96651 catttttttct aaccgggcct agcaatctgc tttatctccc ttgttctgtg
96701 ggaaaccttg tgttcaagtg atagcttaaa aatcaattct cggctggtgg
96751 cggtggcggt ggctcacgcc tgtcatccca gcactttggg aggccaaggt
96801 gggcagatca tctgatgtta ggggtttgag accagtctgg ccaacatagt
96851 gaaacctcat ctctactaaa aacacaaaaa ttagctgggc gtggtgacgg
96901 gcgcccgtaa tcccagctac tcgggaggct gaggcaggag aatagcttta
96951 acccaagggg cggaggttgc agtgagccga gatagtgcca ctacactcca
97001 gcctgggcaa cagtgttaga ctctgtctca agaacaacaa caaaaaaaaa
97051 gacaaaaaaa aaaaaaaaga attctataaa taaaggagtt gagagaaaca
97101 ttcactgtcc cttatctcta catgttgatt atcagaataa aaagaattcc
97151 agcaacatca gtcatgggca caaagccaac ccgtaaacat ttacagaact
97201 cgatgattac ccaaaactcg gcttgctttc tcaatactac tgactttggc
97251 ttcacattag ccacaggtgt gtctagagtt aaacaaggtc aactttacaa
97301 aaaaaaaaaa aaacaaactg atacttgggc atagtttaaa aaaaacttaa
97351 aagtgtgtgt gtgtgtgtgc gtgcgcgtgt gtggtggggg gcggggcatt
97401 tcaatataaa tgccttaaac acaaccttcc tggctatttt ataaaatggg
97451 ttgaatctct aaggacacat atttcctaag acctcgactg atacacagag
97501 tgcaaacttg ggagccagac tagactgcct cagaatcatg ccagctgtgt
97551 ggcactggaa agtcacctaa ttttgcagcg cctaccttca cctctgtaaa
97601 atggggaaca ataataacta atttatggat gctgtaaaga tctgaaattt
97651 taaactcagt aatgcgcctg gcacacatta gacacgggtg tttcgtttgt
97701 cttggcaaag gcttcgggtt ttgcgacaat agccttgctg cctccggagc
97751 aagcatctct ccttgccccc tctggggcat ttaaaaatga cctcaattct
97801 actctcaatt atgtccagtt caacagttac gtgcaggtta caaagccgag
97851 gaagctgagg tatcttctaa actaacatag cacgtacaga atttttttaa
97901 agtttggtgg aggaatcggc agcacaaggt aagctgcgct ctgttcacag
97951 acctgggaat cagaactccg gccgccgcgg cctccaggcg cctctcagct
98001 aacagacttc ctgcagcagg gggaggggcg gccagctcgc tgcaaaaagc
98051 cgcaggaccc cctcaccccg ccttgccgcc cccgctccca ctctctggga
98101 tggggagtgc agggtctagg cgatggcact taccagcgcg aagtgcacca
98151 gcgcgtcgta gcagagccag atgagcgccc cgcggtccgc cgccccctgc
98201 ccgcggccca ggcgcaggcc cagggcgcag cccgccgcca gcagcgcggc
98251 gcacagcagc agcgaaccgc cagcctcggc ccccagctcc cactcagcgc
98301 ccatgcttca ggcttccgac gccaacggcc caggaccatg cggcagagga
98351 aagcagggag agaaacgacg gggcggggct ggccgggaag gggcggagcc
98401 ggatggccaa ggaggagcgg agctgattgg ccaaggcggt ccggggaggg
98451 acggggctcc ccggccgggt cggggccaga gcgaggattc cgtgcccgcc
```

FIG. 7 CONT'D

```
 98501 tcgcaccctg gccagcctgc tgagtccggt ggttttgcca ggtgccgccc
 98551 atggaggttc cgtagaagga acgtgctcac caacttgcgc aaccgcctcg
 98601 accaaacctg ttcccaaacc gagcccaaag gattggtaat agggccacac
 98651 cttttgatgt tgtttcgctt ttaacaaggc tcaaacttta agccacaaag
 98701 tgaagcctag gtagtggaaa ttttgccagt agaccggggc agaattttag
 98751 gggcaaaagg ttttaattag gctgcagcaa gccttaccag ggaggctggg
 98801 ggccaaggga gttttcagcc accagccggc ttaaagcctt tatggcctac
 98851 tctgacaatc tttccatttc ttaaaaatcc agaaaagtag aagggtgggt
 98901 gagaggagcg gtaagtccta ttggcttggc gatagatgcg tttaacctgt
 98951 ggcaggccag gtttcactat cgcaggcctc catcacaact gcttcagcac
 99001 tgagtggtta aattaaatat taaaagctga ggccgggcgc ggtggctcac
 99051 gcctgtaatc ccagcacttt ttgccaaggc gggcggatca cgaggtcagg
 99101 aaatcgagac catcctggct aacacggcga aaccacgtct ctactaaaaa
 99151 tacaaaaaat tagccgggcg tggtgacggg cgcctgtagt cccagctact
 99201 ccggaggctg aggcaggaga atggcgtgaa cccgggaggc ggagcttgca
 99251 gtgagccgag atcgcgccac tgcactccag cctgggcaac agagcgagac
 99301 tccgtctcaa aaaacaaaaa aaaaattaaa agctgaaaga gtcagtgccc
 99351 atataccaaa gtctggaatg taacaaaagc ccaccaagag ttttgcctag
 99401 gcctttcttg ggccttgaag catgacaaga taactaagga atttttaaca
 99451 ggacccgttt aggattaaac aagttttatt gggggtctga agaaactccc
 99501 caggcctcca aaaacaagtt tattgggagt ctggaggaat tccacaagcc
 99551 tccatgattt agcaagagac aaaataaggg taatcatccc agcacccaga
 99601 cctatttaga ttaagtaaat ttactgaggc tccagaggaa ggtcttcagg
 99651 attagaagtt gttaatcact tacgtcttta gatgaatgca ctcttacacg
 99701 tagacatata gcttagaagg tatatacgct ctggaaaaac tttgtaatta
 99751 tgagttggtc tggcaataat ttccagacct tctccctgta accggttgca
 99801 gaaataaaaa ctcttcttcc ccagttcatc tgcacctcat tattgggctg
 99851 cccaaccccc agtttggtcc gggaacaaac ctacattatt taacatcaca
 99901 acaaccctat gaggtcggtg aaataagcca gtcacaaaaa catacttatg
 99951 attccactta caggaaatat ctaaaataat caatttgcag aaacaaaata
100001 gaatgatggt taccaggggt ggggcggggc gggagtgggg gggggcgcgg
100051 gggaaaagtg gagtgttatt tattcggata gtttgatttg caagatgatg
100101 ttctggagat tggttgcaca acaacgtgaa catactttac tgagctgcac
100151 acttaaaaat ggttaagatg gcaaatttta tgtgtatttt acagttatta
100201 aaaaaaatgc tggcactgaa cacaagaaat ttttccctta gtcacttcct
100251 ataccatttt ttatagcagt taacaccaga tagaatgatc cttgtttaca
100301 cacttattgc taatctcctg ccactataat gtaagtcttc aaggccaggg
100351 gttgtggcta gctttttttat tgctgtatcc ctggcaccta ttacagagtt
100401 tggcatatat tagctgctca gttaaataac tggcgactga gtatggtcaa
100451 tctagccacc tatgctctgg atcctgtcct gtaactaact tatcatcctt
100501 tagggaccac tcggcccacc tccccttcag agcaaaatag aaacttaatg
100551 aaaaaactga tcagatcccc tgtcttcatg tcttgaccct gctcctcagt
100601 cctttctact ctggtttctg ccttatcaca ctgatatagc tctcactaag
100651 gtgactactg gcctccacat cactgaaccc caagaacagt tcattttctt
100701 agtgtagttt acttctcagc agcatcccag cactgaaata tttttccttt
100751 ggttttctga gaatacagcc tccttagcca ttctgtttcc tttgcaagtg
100801 catcttccac tacaaatgcc tagtgaatgc tgcagctcca caacccagtc
100851 ctcggccctg ttctcactcc agaccccaaa tccaggcagt ctcatcctta
100901 ccctctgctt taatgaccag caaaacctgc agagaactca aatctctagc
100951 ctggtcctat tctctggact ccagaccagt atttccaact gccctacttg
101001 acagtcactt ggatgtctca atataaccca aactgagctc atcactttcc
101051 accccaatgt ctgattctcc ttcctatctc atgttacttc cactcatcag
101101 ttactacaac ccggaaacct agaaatcatc cccgatactt ctctctcccc
101151 aaacttggca tctaaggcat caccaactcc tcctcagcag ccaagtattt
101201 cttgattcca tgcatttcat ggacctgttc accatctcgt ctgtgcttca
101251 ctcactaatg tgaccagcga cctctacatc actaaatcca aaggacgttt
101301 tctgtcctta gccttaccaa ctagtgatct ttattaatct attatccctc
101351 ttgcttaatg atgatcttca tatagaatac caaaatcctt tttatgactt
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FIG. 7 CONT'D

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101401 actagactgt ggggtctggc ccctccctat ctctttagcc ctttcccatt
101451 cccctattaa tcctcctctc cattataatc tttcatctag ctatacttgc
101501 tttctttcac ttcctcaaat accccatggt gcttcccaca aggctttgta
101551 cagactcttc ccactgctgg aaagcttttc cagtcaatgt gcccaataaa
101601 ctcctgcctt ttcaccacga tcagtgaaat tttggctggc actttttaag
101651 ggctcaacat tagcctggtt atcacctttc tcagtagcca atttcctcta
101701 gtatgtgtat cattgtatac ctctttttt ctaacatttg tcaaaacttg
101751 tctttttttt tattcctgtt atttttacaa gtatcctgtg ccatagcaca
101801 gtacctggca cgggacagag tattcagtat tcgaatgttt ctaaaggctt
101851 agtcagaatt cttatttata taagactgaa gacatcgaaa ggatacatat
101901 gtagaatgtg atctcatgag aaaaactagg ctgaagtaaa tatgaaattt
101951 attcttatgt ttagagttga aaagggtaga tgcccaacga tttgggttaa
102001 agagagctga tgataaagag ggtgtgactt gatcacaaac ctaattatga
102051 tgaagctggt aaaataactg aaagactccc cccacattaa tagaatcaaa
102101 agtccagata atggaatgtt cccattcatt ccaaagtact cagaaaccag
102151 tcacaccaca ctccttattg ttggaatcct tggagtacat cacgctgaca
102201 ggaaccaggt ccagcaatga ctttataatg agaatggatg aaatgcaagg
102251 ggtgttcgag taaaagaaag ctgatttaaa aaatggatga gtctcctctg
102301 ctatctggaa ataacaaagt ctactcccaa tcaaaaacag ttaatttaca
102351 atgatggaaa tttaagtttc tttctctttt gagacagggt ctcaactctg
102401 tggcccaggc tgaagtgcag tggcacgatc tcgggtccag tgtatggcag
102451 cctcagcctc caaagtagct gggactacag gcatgtaccg ccaggcccag
102501 ctattttatt tatttatttt ttttgtagag atgaggtctc actatattgc
102551 ccaggctggt gtcaaactcc tgggctcaag tgatccactg acctgggcct
102601 cccaaagtgc tggcattaca ggtgtgggcc actgcaccca ggttaagaaa
102651 ggatcttgta gcaagcaaag ctagccaata aatacaagct ccctcaaaat
102701 gagtaccttg tttctcaagc tcttctaact tactcctgca ggaatgtttc
102751 cataaaatac cctgcctcaa aaatcagatt ttatgtttaa aatatgtaaa
102801 atgtatactt tataacactt tggcttgtat taccaataaa acttttactt
102851 accacctagt aaagttgctg tcccacgaaa gtgttcctta tcttatggtt
102901 tctcacacta tttggcacaa ggccccatgc atctttgggt accacagttt
102951 aagggaattc ctcaagaagg tgtatggcaa tttgctaggg tagggaaggg
103001 ggatgctgta gaagaaattc cctgcagaga atactttctt tatggcatgg
103051 ctcggccata gtttctgttt ttaataattt aatagatgat tgtaagtttt
103101 ctgatgaggc caatctctca acaatgcttc aagtgatctt caaactatgc
103151 tatgattttc tagtacaact ccagttttcc ctagataact taaagatttt
103201 caactacaag tgtttgaaaa acactgccat agggtgttga gatttgggca
103251 attaacacat ttgattgttt tacaaccctg ttttttagcc acaggataaa
103301 tttaagaggt aactagttgc tccatatttc tatttcttta tcccaagtcc
103351 cttgaaatag atgttcagta ctacctggag tttcctacag atgatttggg
103401 aaattaggtt aggcctgcct tcaatttttc ctaaaactca gaatgaagaa
103451 aaggcacatt tgtgtctcct ttcttcatct tatgcatctg aggaaagcct
103501 gggactgttc atacaacaaa aaagtcatga tttaggctgt ctcatttgag
103551 tggagttttc tataggaatt gatttaggac agtggtttac aatcagggat
103601 ggttttgggc ccccagatgt ttggcaatgt ctggagacat ttttggttgt
103651 cttaacttgg ggagaggaga gaggtgctac tgctatctag tgagtagagc
103701 ccagggatac tactaaacat cctacattgc acagggcaga tgacacacaa
103751 caaagaatta tccagccaaa aatgtcaata gtgcagggtt taaaaaaccc
103801 caatttaggc caggcgctgt ggctcccgcc tgtaatccta gcattttggg
103851 aggccgaggc aggcggatca cttgaggtca agagtttgag accagcctgg
103901 ccaacatagt gaaacttgtc tctactaaaa atacaaaaat taggtgtggt
103951 ggcaggcgcc tgtaatccta gctactcggg aggctgaggc aggaaaatcg
104001 cttgaaactg gaaggcagag gttgcagtgg gtcatgccac tgcactccaa
104051 cctgggctaa agagcgaaac tccatctcaa aaaacaaaaa aacaatttag
104101 gcctaagtta gttgagggat tttatgggca aacagtggca ttaggttgca
104151 ttcccacatc ccttttccca cacattgtat atagcacttt tggagaatca
104201 ttctatcact gttttttagc tatctaaaca acatttatac tcacagcttc
104251 atatacagaa attatatttc ctttccccca aaaagagtta agtaaacttt
```

FIG. 7 CONT'D

104301 cccagtttaa ctagggttta aaaaattaac catcactgta agacaacgga
104351 cattcatgaa tgtcaggtgc tcttgtttac ttgtttatcc gcattaacta
104401 atcccctgaa aaggatgaat gacgcttctt aaaaaatttt cttttcatat
104451 aaaaatagaa tttttttaaa gatggggtct tgctatgttg cccaggctgc
104501 tcccaaactc ctgggctcaa gtgatcctcc tgactcagcc tcccaagtag
104551 ctggagctac aggtgtctgc caccaaccac gcccttcagg atgacccttc
104601 tgaaagaaat gatggcaaga ttgtatgagt actatcacat ttacttatac
104651 accaacttct tttaaaagta atttgcagtg gcattataca aaagtaaaca
104701 tttctatact caaaagtttg gctgctcctt tgttctttta gttaatgcaa
104751 gatttcattt agtgccataa actttaccta acaggttaaa acttttaggt
104801 ttgctctgat tactattttc catagttaca tgttttcaag gggtagccag
104851 gtcttaaagt ttgagttttt gtttcatcag tcacaatcat accatcatct
104901 caaataaatg gacttttttct aagttatagt atttaaacct gagacacata
104951 gggagaatgc catgtgatga cggaggcaga gactggagtg atgcagctac
105001 aagccaagga atgccaagga ttgccaggaa ccaccagaag ctaggaagag
105051 gcaaggaagg atcatcccca tcgaagtccc cagacagagc atggctcagt
105101 catcaccttg atttcagact tctggtctcc agaagtggat gacaatacat
105151 ttctattgtc tgaaaccacc tggtttgtgg tactttgtaa tggcagctta
105201 ggaaactaat atagattttg gcaattctta tttgtcacag aatagtctca
105251 aatctagcat tattatcgat catcctggtt tgttagagtt gagatggaag
105301 aggaacccct cttaagggcc tgccaggtgc cccaccaagc atggaaataa
105351 aggaaaattt tgagttcctt caagggaaat tccaggcacc tagctagccc
105401 tatgaataaa taagaaactt gataagcaag agagtaatag tagcttaaaa
105451 caacagccaa ggaagtcaca ggatgtttgg ttccttatag aaactaaaga
105501 taacatctta acatatgtcc ctgagttgtt cttcagacac ctggaccccc
105551 accaaatggt ccactggcca gggaaggggg aactgaggac tgagctctga
105601 ctgccattct ttgttctaaa tgtcttcctg aggggcctat aggaagtcac
105651 gcccatgggg cagacttagc attcttttct gctgacccca agttttttga
105701 caaagctttg attccttaat caactgcaaa taagaaaatc tgtgaattca
105751 cctatgacct ataagtcacc ccctgccacc ctcggcttca agacagccca
105801 cctttctagg ccaaaccatt gtgtactgat gtacaattct gcctgtaatt
105851 tatgctttcc tgaaattcac ccctgccttt aaaaaccctt gcttgtaaag
105901 ccatgaggga agttgggtct taagtgtgag ctgcctcatt tttcttgttt
105951 ggtgccctgc ctgcagataa atgccctcct ttttcctgct gcaaaacctt
106001 gctatgaatg tttggcctaa ctgtgccagg tgaacagact ccagtttagt
106051 tcagtaatat ggtgtgaagg agatattaaa atacagtaaa agagtaattc
106101 atgatttacc tccattgtga tttttaaaaa aataattcca aatttaaatt
106151 taaccataca gaaaacaaac aagttatttt cagaaataag ttttcaatgt
106201 tttatcatat ttgatagcag ctttttttat tggttacaaa acctaagccc
106251 atatacaaaa ttaggaacac atttagatgc ctcttttgaa agaacgtttt
106301 agtcttttta aactgagttt aaaaaaaaat aacaatgcaa tttttaaaca
106351 ctgttttgaa aacttaaaag tgcagcaata tacttagttt cctttatcta
106401 cgaaatggtg caattccaat tcaaaactgg taaggtcaca aattgaatca
106451 aggaaatgca tacaagtgtc tgcactactt gatgctaatg ttcacttaaa
106501 tgttagtttg cactttaaaa catgagagga aataggaatc atcacagtag
106551 aggcccaatt ttaatcataa tgtgtgcaaa ttttaaaagg taactgtcag
106601 ttaagtaagg aaagtccaga agaaactaaa ctggaagggg tacggttcac
106651 aatatcaaga agatttggac ttttaagggt ttcaccgaag tttgtgacct
106701 taattagctt ttacgttgtt attcctactt ttagcgaaca ccacacagtt
106751 tcaaaaattt agactatagt gtccgaacag gatgcagtta ccatatgaag
106801 ctttaactca aaatttggat aaagaaaaaa aggcacaatg aacttcaact
106851 caattttatg tgcacaagag ttgaaaaatc tgagccacct taaagagaaa
106901 ttgattctaa aatttataaa acctataaat aatcagaggc caaaccacta
106951 tattaaaaca gattctctag caagtaaaaa tcttgcagtt taaacatacg
107001 cttgtatcca ctttagatac aagacaaaac tcactcttta aagtggctcc
107051 accttggcag atacatatat ttgtaatgaa tgcacacctg ctatgtgttg
107101 tttatcagtg aaaacacccc agctgattca caaagctctg atggcatctg
107151 tctcatcttc atcacagtaa atacaccccc caatggataa ctaaattagt

FIG. 7 CONT'D

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107201 ttagattttc tatcccttca catcaatgca ttgggaaatt atacccagta
107251 aacaagagca acaataccat ttctgtgaca gcacaaatta tttagtttaa
107301 aaatttttaa atccatattc tttcattaat aactgggtca gacaatttac
107351 caaaagcaat aacttgacat agtaataccg gattttgcag aattacttag
107401 agatcactgc aaatcaggtt tatgttaaat aactgcaaat tactcctcta
107451 cacagatccc tgtctgaatc ttttaatatg tgaagatgct ttttgagtag
107501 gatctgaatt aactttccca atactcaaag aatgaactct tatgacactt
107551 ctaaatagtt gctggtttgt tgccaaccac attatcaaaa gcactggtta
107601 ctaagtaaaa aatattttaa gactaaatta cagtaaacat gaaagctcca
107651 cagtttaaac ccaatataaa tcaaccatat ccaattatca aattaaaaca
107701 aagaatatta actcctgaaa gctgaaagca agatttttt aaaaaacatc
107751 accaatgggt attttagact tttgcagttt ttttttgttt gctttttgtt
107801 ttgctgtttt tcctttatac tcagggactc ttgctttcaa cttaaacaga
107851 agttcaagtc cataacaggt tgcagctcag gtaaaatacc atgcacagca
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107951 atagggcttg ctgttctcaa aaattaggta taatggcaaa agcattaata
108001 tccatatcta aagttcttcc tccaaccctg gcttctgagg cagataataa
108051 acacatcaat tactggtaga tgaagtagtt ttttttttt tttaaactta
108101 tctgtttatt caataaccaa gtttcttgtt tttaagttac ttttttgtg
108151 tcagttccac caatgaaaat catttggctt gtactttaaa atctattctt
108201 ccacataaag aatatgaaaa tatgtttgtg gaggacaatg atggaggctc
108251 agatcacact gcacctcttt agtcttccaa cttgtatatg catcatacca
108301 aagtgtcttg atccacagcg caccattttc caaaggagta tcagtgggca
108351 gctgacatgt caccactatg gaatatttat tctaaactgg agactgcagt
108401 tgtcagcctg tggcaccagg gaacagggaa aaatagggta gttgagattg
108451 ttaaggagag ttctaaaaca gtttaggaaa tcatgcatat gcatttacag
108501 tccatgtgat agtgactttt ggcaactgca aagtgactga gacatggctt
108551 gctttagaag catcaaaaca aagaggcatg tgtgttttgg agccttttgt
108601 tgctgttgtt cttatcattt ggtagccatc tggtggtgct tcatattgaa
108651 tgtgggaaag atgctgcact caactgaatt taaaaattaa attcttttgt
108701 ttgaaggttg gctgttggat caaaattgta ggtacctcct tgtgttgctt
108751 caggaatgag gcagggatct tcatcaatct gtaaaaaaca agaaaaaaat
108801 ccttattagg ttatgatact atacattatg atgtaagtgg aattgacttt
108851 ttacctctta gcaaataatt ctatgtgaat gctttaacca actaaaaata
108901 ttcgagtaaa tcaataattt tattaagaaa tttaacaatt taaaatttaa
108951 cacgtttcga aactgcattg ttaagtttct gtatctggga cctagattta
109001 tttaacctat ctgaacatat atcacttata taattactat ttcttcctag
109051 ttaatagatt agaaatgaaa caagaactgt ttttacaact ttaccttata
109101 atgaagtttc aaagtattta agagaaagtg actgatggaa tgtctaatag
109151 aaatacagta caaacttatg tcatcctaat aataaaagga aaactcttag
109201 taaatttaca tcatgtatag gttttcattt acatgaagat acacgctatt
109251 ttaatatcta cttacatcat caccagagaa atactgatct atgatttcaa
109301 atgctaattt atatatgtct tcattttcat gttgctgtaa aacttcaatt
109351 ttctccaaac ctggtaaaaa taaaataatc aaaataactg gttaattgat
109401 aaggagatac taatcaaaac cacactcatt ttaatcatgg agaaatccta
109451 aggaactcag aacacactgc tcccccatct aagatagtgg tttgtctaaa
109501 aaacagacaa aacacggggc tgcttctagt tggaggacca gaatcccact
109551 aatttttttcc ttcttagaag cccttgaggt acccggatcc ctgaggcaga
109601 cagtctaaaa aaacacccaa acaatccatt tgacagaggg aagctgtggc
109651 ataaatatgt aaagagactt atttcaagtt atatggcaag tttgtgacag
109701 tactagaacc aactccccca cagtgcttta atataaattt actaatctat
109751 ttttttttttg agacggagtc tcgctctgtc acccaggctg gagtgcagag
109801 tgcagaggtg tgatctcggc tcactgcaag ctccgcctcc tgggttcatg
109851 ccattctccc gcctaagcct cccaagtagc tgggactaca ggcgcccgcc
109901 accacacccg gctaagtttt tctattttta gcagagacgg ggtttcacta
109951 tgttagccag gatgatcttg atctcctgac ctcgtgatct gcccacctcg
110001 gcctcccaaa gtgctgggat tacaggcgtg agccactgcg cctgggcatt
110051 ttttctttct ttctttttttt ttttttttt tgagacggag tctcactctg
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FIG. 7 CONT'D

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110101 tagccagggc tggagtgcag tggcacgtct cggctcactg caacctccac
110151 ctcctgggtt caagtgtctc ctgcctcagc ctcccaagta gctgggatta
110201 caggtgccca ccactatgcc cagctaattt tttgtgtttt tagtagagac
110251 ggggtttcac catgttggcc aggctggtct cgaactcctg acctcgtgat
110301 tcgcccgcct tggcctccca aagtgctggg attacaggag tgagccactg
110351 cacccggcca atcttattaa tcttactgcc tcataaagta atttgtatct
110401 ttctctttgt tttccaaatg ttattacctt tatataacca caaaatgagt
110451 ttttagaacc ttataattgg tataaaagat ataaagattt aaattttgaa
110501 aaactttctt taaaaaatga atagaggtct tatgtcctat agccacaatg
110551 aacctgggag aaaatatttc cagaacagat atcatagaat gccttcattt
110601 atatttccaa tatatttact ccacacatca tatacatgtt tatcaatttc
110651 acaccttaat attcttcctt gaaatgtctt tttgaaggtt attttaaaat
110701 agttgcaatt ttttcttata tactaataaa ccaaaagaat gggggaaatc
110751 gttgccaaag tgctttatac aattataaaa tattaatatg tatcctatta
110801 ctcctataga caaaagtaac tatattgata aaaagctgaa gagtagtaat
110851 tctctaagtt gctcaaactt actgtgttat gaacctgact acaattttta
110901 attatcttaa tagtaagaag atctggattt taactttgct tctatcacaa
110951 cctacttctg tcaccttgga caagactcct taaaatctgt gggataattt
111001 cttctcaaga aaccctcccg gctgggtgca gtggctcacg cctgtaatcc
111051 cagcactttg ggaagccgag gcgggcagat cacccgaggt tgggagttta
111101 agaccagcct gaccaacacg gagaaaccct gcctctacta aaaatacaaa
111151 aatttagccg ggcgtggtgg tgcatgccta taatcccagc tactagggag
111201 gctgaggtag gagaattgct taaacccggg agacggaggt tgcggtgagc
111251 cattacactc cagcctgggc aacaagagcg aaactctgtc tcaaaaaaaa
111301 aataaataaa taaaaaataa ataaataaat aaataaataa ataaataaat
111351 aaataaataa atagaaagaa agaaatcctc ccagtctgaa tattctacgg
111401 tactactgca tttgttttct cttaaaataa ataaataaat aaacaataga
111451 atattcatat aaagtagtca atgaaatgta aaatctaaaa catgacatta
111501 tgataaacta atttaaggtt taaacatgtt agtacatatt gaacatgtac
111551 atttaaaaac agaattttaa catatgtttc acatgtcatt aaagaataat
111601 acagtatgtc aaatcacaat tatttctcat taaaatttca aagtaactgc
111651 cacagtaata acttcaggat gtagttgtgg aaatcctaag aatcattaca
111701 agattgaaac aaaatatcta ggtgactcag aagtcagtaa ccttttccaa
111751 ctatatgaaa taatatttcc taaagtgggg tccacagaat tacatggtaa
111801 taacacacaa aaaaagtgtt tcattgttaa gaagtttaag aaatgctgga
111851 ttaaataaag ctttaaaatt tatgtagtgt tgtaagggct cttaaatttg
111901 ctgtcatgca ctgtgacttc aagagaagta ttagtgtttc ctaaaatgca
111951 atgtcaggcc aggcgcagtg gctcatgcct gtaatcccag cactttggga
112001 cgctgaggca ggtggatcac ttgaggtcag gagttcgaga ccagcctggc
112051 caacatggtg aaacctcgtc tctattaaaa acacaaaaat ccactgggtg
112101 tggtggtgtg cgcctgtaat cccggctacc tgggaggctg aggtgtgaga
112151 attgcttgaa ctcgggaggc agaggttgca atgagctgag attgtgccac
112201 tgcactccag cctgggcgac agagcaagat tctgtctcca aaaaaaaaaa
112251 aaaaagctat gttgtcaatc tctagaaggc tatacagtga ctttcacaac
112301 ctgattttgc aaagtatgga ctactgtctt ctggaaaatc ctcttggaat
112351 gcaaatatag tgaataaaga aaagcaacat actgtgatca tttaaaaaca
112401 acgtatccta gtaattttct gtctagtaag ttgactttaa agaacttatg
112451 tttcagagtt ccagtgctca aatactcttc ttccatcaat ccactcttac
112501 ctccacattc ctctattatt tcagctattg tgcttgcttc atcaccggcc
112551 attatcagaa tgtttttag accatctaga accacctgaa ccacttgaga
112601 atctttcact gacagtaaat tacagaacgg tggtattaca ttctgctgta
112651 caaggtactc aacctagaca acaaaagaga agaaatattt ttatttatat
112701 aattatctat ttcccagtag ggtgtcgtgc tacatggaag gctgaggcag
112751 gaggctatct tgagcccagg agttggaggc tgtagtgcgt tatggtcatg
112801 cctgtgaata gcaactgcac tctagcctgg gcaacatagt gagactccat
112851 ctcttaaaat aataataatt atcttttccc caaaaagaac acaatacagt
112901 cagcaactac gaaacataag agagcagcat gctttccagt attaacaatc
112951 atgacagtta caggttttca aactcacctg atcttttctg ccacttattg
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FIG. 7 CONT'D

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113001 ttaagttgct gattgcccaa gcagcttctt tttgtgttcc aaagtccccc
113051 tgaaggttaa aaatgagatc ataaaatgga ctctttatcc aaaaagtctt
113101 ggttattaac agattaacag acacggtgaa ctcataatat gaccaacctt
113151 agcaagctga tgaattatca taggaattaa tccagcatct attacagctt
113201 gaacttgttg ctggttgcct gctgttatgt tggaaaggaa ccacactgct
113251 tcctataatt gaacaaaata tagggcacct ttatttgaaa aataatacct
113301 ttaatgtctt tctaatatat tttatataga caataacaaa atcacctgaa
113351 ttacgttaaa gagactgcac ctaaaaagtg attaggtata caaaatcttc
113401 cattttaaac aagttataag gaaatttcca ttaattatat ttgggctcca
113451 ataacctggc atttatccat tcattaatat ataggcctac tataagctag
113501 gcattattct aggaaatggt gattttatag aaatgaacaa aacagaaatc
113551 tttattcatg gagcttacat gtctgtgcat tagcttcctc taaaagacag
113601 aaataaatat acaactgaat ttctttttc ttttcttttt ttttttgaga
113651 cggagtcttg ctctgtcgcc caggttggag tgcagtggcg tgatctcggc
113701 tcactgcaag ctccgcctcc cgggttcacg ccattctcct gcctcagtct
113751 cccgagtagc tgggactaca ggcacctgtc accacgccca gctaattttc
113801 ttctattttt agtagagacg gggtttcacc gtgttagcca ggatggtctc
113851 gatctcctga cctcgtgatc cacccgccta ggcctcccaa agtgctgaga
113901 ttacaggcat gagccaccgc gcccagccac tatacaactg aatttctaaa
113951 actacttaaa aactacttct aataaaggtg atttcttttt taattttaaa
114001 aaatatttac tcacaagata tagtcattca agtattccat aaaaattaac
114051 catctaacta gtctagcatg ggtctatata acataaatat tctaaaacta
114101 agggatttat aagtcataaa cacgtctgtg agctgtttac aggttagtat
114151 cacatgtgta tcttcctctt ccacaaatga atttgttttg ccatccaact
114201 gtggtaagtt gttaataatt gctgaatctg tgtttagagt acatgggtgt
114251 tcactatact attcttgcac atttttttgta gatttaaaaa gtttcaaaca
114301 gaaatgctga gggaagaaaa tcaagttggt aacttctact tccagggtcc
114351 tatgatagtc tcaaaatgca agtaacaaat tttcaaggca aaaaattttt
114401 gaagtaacta attgcttgct gaagttgaga tggcatttct atgaaatttt
114451 cctctacccc ccacgatacc ctcacttaaa agcatactac atcacaggcc
114501 ggaacctttc tctgctgact tctgcccagc ttcctcactt ctcagttgtt
114551 tccaattatg gaatatattc atttagctaa aaaaaaaaaa atcacctata
114601 ttgttaaaaa tttctttagt aaaagtaact ggcccagagt ctgaaagtct
114651 ctggcttctt tgtcttcact ggaacaaatg tatctataaa atgtgttttt
114701 tgacaccata cttttctata agaacccaac agtcaaatta tactcaagca
114751 actatacaaa tatagttatg atgacgaaga agaaatgatc agttctgctg
114801 ggtttgggtg atggtagtat attaggcaga taaaacttta gtaaactaaa
114851 tgtaaattta tttctttttc ttttttcctt tttttttttt tttgagacag
114901 agtcttgctc tgtcgcccag gctggagtgc agtggcacaa acttggctca
114951 ctgcaaactc cacctcctgg gttcatgcca ttctcctgcc tcagcctcct
115001 gagtagttgg gactacaggc gtctgctacc acacccggct aatttttgt
115051 aattttagta gagacggggt ttcactgtgt tagccaggat ggtctcaatc
115101 tcctgacctc gtgatctgcc cgcctcggcc tcccaaagtg ctgggattac
115151 aggcatgagc caccatgcct ggccaactaa acgtaaattt aaaccacaat
115201 gagacaccac ttcacatcta ctaggattgt cagtaatttt ttttaacaga
115251 aaataaacgt tggctaggat gtggagaaat tagaattcta gtaacactgc
115301 tggtgggaat gtaaaacagt gcagctgcaa tggaaaacgg tttggtggtt
115351 cctcaaaaag ctaaacccag aattaacata tgatcgagca attctacttg
115401 cagttatata tccaaagaaa ttgaaagcgg gaactcaaat aggtatttgt
115451 atgccaatgt tcactgcagc attcttcgta atagtgaaaa ggtggaaaca
115501 accgaagtgt ccatcaacag aagaatgtaa aaacaaaatg tggtgtatac
115551 atacaatgga atatttattc agccatagaa agaataaagt tctgacacat
115601 gctgcaaaat gaatgaacct tgaaaacatg ctagatgaaa taagccaggc
115651 atgaagactt attacatact agtaagtaca tattacacaa ttaataataa
115701 acttgtctat gaagcttgaa atcttaaaaa gagtaatttt ttatgatcct
115751 tgaatttagg cacctcgtct ttgggtccaa actaattttg ctgggagatc
115801 aaaatttta tgatcggttt gtttaaaaaa ataccagccc attcaaatgg
115851 cagattttgt ctgcactttc aagcggctac taatttaatg attgttgcta
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FIG. 7 CONT'D

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115901 tgctcagtct acttaaatag aaacacaggt agtctaaaaa tgtttttac
115951 tctgtgatga ccagggcagc acctaccaga agcgattaaa agttgaaaaa
116001 ggctgggcgc ggtggctcac gcctgtaatc tcagcacttt gtggggctga
116051 agcaggcgga tcacaaggtc aggagttcga gaccagcctg gccaatatgg
116101 tgaaacccca tctctactaa aaatacaaaa attagctggg cgtggtggcg
116151 ggcacctgta gtcccagctt ctcgggaggc tgaggcagga gaatcgcttg
116201 aacccaggag gcagaggttg cagtgagccg agatcgtgcc actgcactcc
116251 agcctaggca acagacagac tctgtctcaa aaaaaaaaaa aaaaaagttg
116301 aagaaaaaca tttgcagagg tgatttaaaa taattctcat cttcgctgca
116351 gtggctttta agaaaaacat acaagtagca atagaaacaa ggagacagtt
116401 aaaaatgaga cacagaaaga aatagcataa tgaggacatt atatgcctta
116451 ccttatttat cttctctttt gggtgtgata agagatttgg gaagtgtgac
116501 aggacatcac aattgagaac aacctgggtc tgctcgtcgg tgccagtcac
116551 tatgttgcca actgctctga gggctgctgt ctagggtggg gataaaatgt
116601 tttctataaa tttatttgct tataagacta attctatatt tttcataatc
116651 ctgagaaaaa gtaaaaatgc aaggcataaa taacacttat ttcatccttt
116701 cacaaagcac caagcagtct gagagctatt ctgaatttta aatagtctct
116751 tgtgaaaaac tgaaacttta tgaaaaaaaa aaattgtgtg aaaattggtt
116801 ggaaaaagat tcaaaaaata aaaggaaatt aaaattttag aagaagtcca
116851 gtttcttaag gctgggcatg gtggctcatg cctataatcc cagcattttg
116901 ggaggccgag gcgggggga tcacctgagg tcaggagttt aagaccagcc
116951 tgggcaacat agtgaaactc catctctact agaaatacaa aaattagctg
117001 gtgtgatggt gcatgcctgt aatcccagct actctgaagg ctgaggcagg
117051 agaatcactt gaacctgaga ggcagaggct gcggtgagca gagatcgcgc
117101 caccatactc cagcttgggc gacagaacaa gactccatct caaaaatata
117151 tataatattt taataaacgc ctggaatggg cacacacttc cacctagaaa
117201 gtcactttgg taaagcagga tgaacagatc taataagtgc ctacccctaa
117251 ttagagtggg agagagaaag aagaaatgca attaggttat tgcaattatt
117301 tgggggaaag atagagtctt gaactaaatc tgttgttcta gatagataag
117351 gagagacaga tttgaaccta tataagaaga attgaaatga ttttgtaatg
117401 gaatgggaat tgcaaggagg aatcaaaatt tctagcttag gccatgctgt
117451 tcactgaagg tagacaagga agaagagcag gtttgtggga gatgatcgtt
117501 tcatttctgt ctagttaacc acggaaagct tgaaggagtt cttagatgat
117551 atgtataaag ggtcaagaac aattggctat acaagtgtgg aactcagcaa
117601 agaaactggg tgagataaag atttggaaat caacaaaatc aggctcaggg
117651 actagcagaa gaaatgtgga agataagcac ttacagatag aattaaagcc
117701 tagctgtaca agttaactgg ttatagcaaa cacaactgta tacaaataag
117751 aaaaatttaa aaatacttac ttgaactttg acttcctgat ggctcagaag
117801 gggcacaaga aagggcacaa ctcctgaatc aataaccatc tgtatctgtt
117851 cattacctcc atctgtcaag tatgacagag cccaaacagt gtctacaaga
117901 atctacagga aacacaaaag aaaaaccatt ttacatattt gtttgaatgc
117951 tttacttgtt caacacacct caggagtagt gacagaaaaa gtaaccaaat
118001 ttcaagtttt agcttagtgg caaaaatatc tgcttagctg attaatctat
118051 taagtagaaa gtaccttatc tttctttcag tgcctacctc agatcattct
118101 tcacagaaaa tgagacacag aagtctggga aaacttctat tccaacttct
118151 gcatttatgt atcagacaga tgaatttaaa aacaggcaga aaagtaattc
118201 tccctgccct cacaaattag ctacctaata atcccacaga aaaacactat
118251 ttacaagaat gaggccaaca caccatactg tttcaagttc agaagagaac
118301 agaaaggtca tctatttact ctactggttt tccaacatat ttagcaatac
118351 aatttttcag gctactaaag taaaccaata aaagaaatga cttggcactt
118401 taacttcatc tggggaaaaa actgtttgaa aatctcctga aatgtgtccc
118451 caactgaagt ataaacctgg agtataaacc atgccctagg cctatcctaa
118501 ctttgcaact acatagaaga aaacaggctt agcgatctgg tgattcattc
118551 aaggtcaaag atcttgtatg tggcattgct tggtgtcgtc acagaggaat
118601 ataagcactg gttgtagctt atgcaaaatc aagatgtttc ctattaggtc
118651 atccaaattg aagacatcac atctttttgc cctaaaataa tagcaggcac
118701 ctgaattcac ataccccttca aaaaaggata tagatgaata aataaaatag
118751 aactacacat ataacccaca ccccttcagc attactaaga gtcagagaac
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FIG. 7 CONT'D

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118801 actaaaaatt tccattatct gtaagaggag aaaaaattaa attctagctt
118851 ttgtctggac ctcttgcctc aagactgtgt aaaagagagg acagaagctg
118901 ggcctaagag ctgagcccac ctaccagccc atttcccact ctggaagtga
118951 ggaggcctcc ctgctggagg tgtctgcaga tgctgggtct gagaacaaag
119001 tctggctact gcccaccctg gcagtaacag taactagatt tacctagaaa
119051 caggggtctc aaagcataac accaatatgt gtaggctaca atggaaaata
119101 acccttcata ccaagatcca ggaaattctc aaaagagaaa agacagtcaa
119151 cagatgccaa tattgagatg acacacatat tggaattatc tgacaaggac
119201 ttgataagat tttaaagtaa ctatcataaa aatgcactgg tgaacaatta
119251 tgaacacatt tgaaacaaat ttaaagtggg aattctcagc aaaaaaaccc
119301 gacatgatag aaggggggaaa aaaaaataaa tgaacccaaa gatacatcaa
119351 tagaaatcat ccaaactgaa taacagaaaa aaaaaaagat taaacagaaa
119401 ttaactctca ggaacttcca gcacaataac aatagatcta atatttgtgt
119451 cttcagagac cctacaagga aaggcggagc tgaaaaaaat atgaagaaat
119501 atgttccaaa tttggcaaaa tagataagtc tagaatcaga ttaaaaaatg
119551 ggaggttgag gcaagaagag aaaatagaat aagctcatgc atcattgcac
119601 aggtaagaga cagaagtaaa aaaatatatc atttaaaact gtcaaaacag
119651 atagtaagag agcattaaaa aggtgtaaga ataaaggtaa ccactagaac
119701 aaaaatacaa acttccccaa ataccaaaag aaaattgaga aagacaaaag
119751 tatgcttagc agagaaaaaa aaaaacacag ggacattatt tcacaaaatg
119801 acagttcaaa tcaatctatc aacctatgtg aatgggccta actaacctat
119851 taaaaaaaaa aaaagatttt caaattggcc ctggctctca aaacaaaacc
119901 caattccacg ctgtatacaa gagacacaca taaaacaaag aatttggaaa
119951 ggctaaaaat aaagggatga gcaaaagtat gccaagtaaa tgataaaaag
120001 aaagctgagg ttgtaaccct gttaaaagac gaccagtaga atttaatcta
120051 aaaagaatta caaagaaaaa aggatacttt acaaagttaa atcccacaat
120101 ttatcatgaa aatacaacag ttataaacat ctattaacca aatagccctg
120151 caatcactgt tttaaagcag agaataaaca cacacacaca cacacacaca
120201 aatatatgta aaaacatact aataatagga ggttttaaca tactactgtc
120251 atatgaggga agtcaaatag gcaaaaaata aaggtataac tcttatgaat
120301 atatattgaa ctttataccc tgataatggc aactacaact tgcacatgta
120351 caaatatcat attaggttca aagaaaacat caataaatta cctaagtcag
120401 aaacattata agcctatcac aaggcaaaaa acttatacat taataaaatg
120451 aaaaccaaaa aggcttttct atatagaaat ttaatagcct tatattaaac
120501 agctcttagg tgaaacacac acacacacac acacacacac acacacacac
120551 acacaaaaca gaaaaaccca acaacaaaat ttctattttt cttttctttt
120601 tgagacagag tctcactctg tcaccccggc tggggtgtag tagcacaatc
120651 ttggctctct gcaatctctg cctcctaagt tcaagtgatt ctcctgcctc
120701 agtgccccat gtagctggga ttacaggcgc gtgccatcac agtcagctaa
120751 tttttgtgtt tttagtagaa atggggtttc accatgttgg ccaggctggt
120801 ctcaaactcc tgacctcagg tgatccaccc gcctcagcct cccaaagtgc
120851 tgggattaca ggcatgagcc aaaacgcctg gcctaaactc aacaaaattt
120901 ctaaaaagtt aaaacaaaaa tgccacacat cagaatctat gacatttatt
120951 taaaacagtg attaaaggaa aattcatagc cttaaaaatt tatacaaatt
121001 tgtctgaacc catagaatgc acaacagcaa gagtgagtga acaacagtgt
121051 aaactacgga ttttgggtga ttatgatgag tcaatgaaaa atacaaaagt
121101 aatgagataa agaatagaaa aatcatagat ctaactaata aactgaaacc
121151 ctggttctct gaaaaaaaca aaaaacaaac aaaaaaacaa ctaagaaaaa
121201 gtcctaccta acttaattag aaaagagcag ggaggggggca caaatacaca
121251 aaatcagaaa tgataaaata acccttaaaa taataaatta gaacaaaaaa
121301 ctaccctgca cactttaatg caagtaaaca tagatgcaat gaataattta
121351 ctagaacaat agtttataaa aactgacctt ctttagaaag agtgcttaaa
121401 caagccaact tccatatcaa aaataaagaa aattatcatg aaactaactc
121451 cacaaaaaag taccaaatcc ccaaaggatt taagagggaa actatcaaat
121501 cttcaaaggt cagacagact tgatgctata taaattgttc cagagtacag
121551 aaaatgaagg aagcataaca ttaacacctc aactttaata aaacaataga
121601 agtataaaac ttaatacatc atgattatag caccattaac taatggtatt
121651 aacataatta aatttaatat taatatttgt aattaatgta aattattgcc
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FIG. 7 CONT'D

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121701 taataaattg aacaaaagct aaactgcaaa ccaatatcac ttacgtgaat
121751 gctgatgtaa aaatctgaaa taaaatatta ttaacagaat cacatactac
121801 attgagaaac taacatataa tgatcaagtg agatgattca aagaatgcaa
121851 ggatggttca atttttaaaa atatcattaa tataagtttt attaatagat
121901 ttaaggagaa aataatagaa ttttctctac agacactgaa aaattcatta
121951 catttttca gtgtccttga tagaacaccc aaaaaaggaa tgtatagata
122001 tttctctaac ataaaacatc tatagttcag acaaaatgta gatacaatta
122051 aaaaaaattg atgaatttga ttatatacaa aaagttcaca tggcaaaaca
122101 tcatagtcaa agacaaaaga caaactaggg aagtatttta agtatggcag
122151 aactaatatc cttaatatat aaagaactct taaaacctaa gaaaaagacc
122201 aaaaatccta cagaaaaaca gacattaaat atgactagtc tgttcgcaaa
122251 gatacaaatt aaaatggccc ttaaacaaat gaaataatgt tcaacgtcat
122301 tcataaaaag taaaatgcaa attaaaactg agatactgtt tctcacctat
122351 cagatgagca aaaattttaa atgtgacaac acactctatt ggcaaggata
122401 ctgagaaagt cactttcact tttgaatgca tactgcatac actacataat
122451 agataaagga gtcgaaaaat gtcatttaaa actatcaaaa cagtaaaaaa
122501 gaaaagatat aagaataagg gcaaccacaa taaaggcaac cactagaaca
122551 agaatacaaa ccttcccaga taccaaggca aaatggcaca acccttacag
122601 cagggaattt ggcagtatgc aacgaaatta caaatgcatt tactctttga
122651 cccagcaatc ctgcttctaa gaatataccc tgaagatata cctccaataa
122701 tatgaaaaca cacaatagtc attggtataa tacttttaca tttgcaaaat
122751 tcaggaaatg gcctaaatgc ctatccataa tagtgtgttt aaataaactg
122801 tgtccacaaa acagaatcct gtgcaaaaca acatgatgcc ttaagatgtt
122851 tctccattac atggtcacta ctattagcag aaaactattt ttttttctaa
122901 ctaatataat aatgaaattg tagactgagc tcaactaatg gttttcagtg
122951 gggtctccat gacaatatct caaaggctgg gagaagataa gctacagctg
123001 ggtgttaggc accctgaaac tgcaaatact tgtagtctct aatttttat
123051 ttttagagat gaggtcccag tatgttgcct aggctgggct tgaactcctg
123101 ggctcaagcg attttcttgc ctttgatcta tattagcctt tgagctatca
123151 acctaaaaaa aaaatttgac catttattct ctggctcctt atctactaca
123201 taaaaagggt atgtagttct ttagacaaga ctatatgatc tagaacctat
123251 taaatctctg ccttattttt tccccactat ttgttccaca ttttatgctt
123301 ctatcacact ttaattttat ttaattattt ttttttaaca cagcatctcg
123351 ctctgttgcc cacgtgggag tgcagtggcg tgatctcggt tcattgcaac
123401 ctccacctcc ccgactcaag cgattctcct gccccagcct cccaagtagc
123451 tgggattaca ggcacgcatc atgatgccca gctaatttt gtatttttag
123501 tagagacggg gttttgctat gttggccagg ctggtctcaa ctcctgacct
123551 caagtgatcc actgtcctca gccttccaaa gtgctaggat tacaaatatg
123601 agccaccgtg cccagccatc atcatactac ttttaaaaac tcctttgttg
123651 gttcttcttc ccttgctgcc attcctgaaa cgccaggaat tcctaagtta
123701 catttttagc cctccttccg aaatacagcc tcctccaggt gatctcattc
123751 aatgcccagg ttttcatcaa tcccttaaat actgacgaat ccaaaatctg
123801 tattgtcttt tgcttttgga aaataccgcc actgaggaac aacaagttcc
123851 aagttctact cactttattt cctaacactc aaagtttttt ctcccttaac
123901 gattcctatt attgcaattt agtaatagtc catgccttca tcaacttccc
123951 taaacctatt atgatagcaa aatacatcta cctacagtca aactttccct
124001 acttcaaacc ttccatattt gtgttatttg tctgttacag ataattttat
124051 ctgtataaaa caaatatcat ttctcgattt aaaaaatcta caatgactct
124101 gcagtcatta caagataaac ttaaaactct ttaatataga atcaaaaact
124151 catataaaaa attagcaggg agtggtggca tgcactgtaa tcccagctac
124201 tggagaggct gaggcaggag aattccttca actcgggagg cggaggttgc
124251 agtgagccta gatcgcgcca ctgcactcca gcctgggtga cagagcaaga
124301 ctccatctcg gaaaaaaaag aaaaaaaaaa aaaaaagaat caaagactct
124351 gcaaattaac tccttagcga acgtattagg ttattatcta catgtattct
124401 cttaaacctc catgtattct tgagttctta atatcttccc ccgtgttctt
124451 gaaatgactt tctctcaacc tgtgaaaatc ctattcatcc tagttatatg
124501 acatgagaca aattacttaa gtacctctgc ttcttttaca acgtttgtag
124551 atgatggaga taatgagagt accaatctca caagaatttt gtaagaatta
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FIG. 7 CONT'D

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124601 aatgggttaa catagcaaaa gtgcttaaaa cagtgcctgg cagattttaa
124651 actcaataaa tggtaactat gaacactata atctttgact ctgtccccac
124701 ttctgtctcc ttataatgct cgtctcaaat gttactttgt caacgaagct
124751 ttctgcttcg ctagcaaaat tatctgtgct tccataataa agcactttgg
124801 tcactgctct atcttacctt ttttcttgtt ggctttcata ccatgtttta
124851 tgtttatgtg cttatggtat gatttttttt ttcactgtga gcctatggat
124901 tatactgaat atgtgatcat ggtatgaaaa agcacaggcc ttggacctgg
124951 cttcagttct caggtatggc tctcattcat tgcatgacct tagaaagatt
125001 atttaacttt accgagtttc aatctctgta tttgtaaaat agaagaataa
125051 aacttatctt acaaggatac tggtaagata aaaggagtct acagagagat
125101 ccagcacagc aatttcttga cataagttct ttccttttaa ctctttttac
125151 atctttaatg ttaaggtctt agaaggcatg gtctctttat gtcttatcac
125201 tgagtgtaca attcatggca caattctggc tttaagtgga ataatttgtg
125251 agtgtttgct aaacttgact aatatacctg taactacagt acactgccac
125301 tttaataccc cagctttcac ataaacacaa ccaacagatg gtgaaagctt
125351 ttatttgcct ataattaatt ctataatgtt ctgggggaaa gtcctgaggc
125401 aaacagcaga tattttgctt attccccttt taatctttgc tgtcagaaag
125451 cttacaacta aacttacctt tcaacagcaa caactaaact tctgtataaa
125501 ttttactttt tcctttacag atattatctt atatgtcttt tgttaagtca
125551 ctttatatcc attttggaaa taagacggca tataaacatg ttttacttca
125601 ttttaatgac attttaggct gtgtcaaaca cgaagtgact ttagctacct
125651 ttaaaagatt ccatcctgag agcttaaaat ctgcaaatga gctagagtaa
125701 tgtgatacaa tttttatata caaattatat tgccttgtga gaaaggtaag
125751 caaagatgta tttctttgtc ccaatgataa attacacaca attcacaatt
125801 ctgccacaca tatacacata tgtatgtaca tgttatgtgt atgtagataa
125851 agattacaaa aacacaaata tacaacaaat cagaaagaga tgttagttag
125901 aataaaagaa actggatcaa cactagtcac cgaaatttat ccactgtttt
125951 actccatgga aaagtaacaa tttaccttac tgcatttagg agaattttca
126001 gattgcctag atagtatcaa acttgccaga acgttgacag taaatgcttc
126051 actaaatctg aatataatga aaaaaaatca cctaaaaatg ccttgcattt
126101 aaaactatat attcttctat actatatcta aaaagactgt agcataaaaa
126151 ggcagcatgg ttttgtgaca agtacccaag acctgttatg agaagacttt
126201 aatttgaata ttgactctga cccttactag ctcttccact ttagataagt
126251 catttaatct ctctctgaga gtccgtttct tcttattcta taaaatgggg
126301 ggaataatat ctagcctatc tgttgtaaga accagtgaga tttttttaa
126351 aaagtaaggt gtttcatgag gttttaccgc tttacaaata ttaaggttta
126401 aaaacactac ttaataatga cagaaataaa ctacatatgc agtaatttct
126451 caaaagtgag catttttgct gtctggctgt tactgcttac agatttaagc
126501 tataaaccta atttaagctt aatcctattt ctgaaaactg taaatacgtt
126551 gtagaaactt gacaagttga taaaatgtat gctgacactt acataaaaac
126601 cctttctgtc ccatcaagag caaaatccca catttaagct gcttcttaac
126651 ttacgtttat atctgtatgg tatatgagga cacataaagc tggcaaaatc
126701 tgaggaaaga aaataaacaa tacttaacat tagttaatta atatgtctgt
126751 aaaaatgaac aactttgaca taaaaagcgg taaatatggt ttgtagggcg
126801 agaaagacaa tgttaaattt gtctgaatat cttttaggaa aatgaaaacc
126851 tgataaattc aatctaaaaa aaccaaaaac atatctcaaa tgttaaactg
126901 aaatatgttc aattaacaag ttaaaatatc caaataaatc tggcagaagt
126951 taatgtacct taaaataaaa acatttgttt ttaataacct tctttatggc
127001 ataaaatgtc aagtggaaaa aatggagatg caaatataca gttacagcta
127051 tttaagaaaa gctacactta aaactgccgt aattgtctca cttacctgct
127101 taacgtaaaa atacgatttt acttaataag ctacttaagt caaattaaag
127151 ttttcaactt caccttttagt caagaaaatt cgaaccagta caaagtacaa
127201 agctttgctt gttaaattca ggccccagag atctcttttt aaaatatggg
127251 agaaagggag caggggttg taggaaatca cacaaaatac ctttgcatag
127301 caacaaaaag tagcaggtac tagagaaaga tgtccattat aaagatacac
127351 agttggccaa gtgtggtggc tcatgcttgt aatcccacca ctttgggagg
127401 gtgaggtggg tggactgctt gatgccagga gttcaagacc agctggccaa
127451 catggtgaaa acccatttct actaaaaata caaaaattag cctggcatgg
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FIG. 7 CONT'D

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127501 tggcacatgc ctgagacatg agaatcgctt gaaccccgga tgtggaggct
127551 gcagtgggca aagattgtgc cactgcactc cagcctggga aacagagcga
127601 gactgtctca aaaaaaaaaa aaaaaaaaag agataacaca gtcaacagtg
127651 aataaaggtt atgtaggatt ttttttaaa atgcaaagca caaggatcta
127701 tttacatatc aaatgtaaat aaaaaagttt ttactttgtt ttaattagta
127751 gatttaacaa aaaatatgtc acacttttaa gaactccaat tttgtcagta
127801 ataaattgga gttaggccgt gggggcagtg gctcacacct gtaatcccag
127851 cactttggga tactgaggtg agcagatcac ttcaggtcag gagtttgaga
127901 ccagcctggc ctacacagtg aaaccccatc tctactaaaa atacaaaaac
127951 tagccgggtg tggtggcgct ggcctgtaat cccagctact caggaggctg
128001 aggcacgaga ctcgcttgaa cccaggaggc agaggctgca gtgagctgag
128051 atcatgccac tgcactccag cctgggcaat agaacaagac tgtctcaaaa
128101 gaagaagaag aagaaaaaaa atcaattgga cttaaagcaa actcattcaa
128151 gaacatttgc atgtaagtat actagttttg cctgtagcaa ccccctttta
128201 tagctttaaa ccaacaatgc aatacagtaa taaaactttg agattgtttt
128251 ccttttgtat ttttctctct gaatttttat attttctttt tatgcagata
128301 atcaaaaaaa taggcattag gatgaactga cattctttca ggtacagtaa
128351 gacactcaac ttttatttca taggagtaat taaatatggt acgttacttt
128401 taaaatctta cacctgtggc tgggcgtggt ggctcaggcc tgtcatccca
128451 gcactttggg aggccgaggc gggcagatca cgaggtcagg aggtcgagac
128501 catcctggct aacatggtga aaccccgtct gtactaaaaa tacaaaaaaa
128551 ttagccaggc gtggtggcgg gtgcctgtag tcccagctac tcaggaggct
128601 gaggcaggag aatggcgtga acccaggaag tggagcttgc cgtgagccaa
128651 gatcgcgcca ctgcactcca gcctgggcga cagagcaaga ctccgttatc
128701 aaacaaacaa acaaacaaaa aactcacacc tgcaatgaaa tcagtatatg
128751 tattattttg tcccctgtat atgaattcct gaagtacaaa catagggaaa
128801 atataccatc tggcctttac aattcttcat ttacctcctg aactgtctcc
128851 ataggcggcg ggggatcctt attcctgcag agattgacaa tgacccatgt
128901 gacgttccga aggaaggtga tggggatgga gggactgatg aaggacagaa
128951 gaggtttgac aactcccagt gatatgacat aatctctaca ttgaggacca
129001 tcacctacag aaatgaaaat tatatttaaa aaaaacttac attcaggatg
129051 agaaagtctg aaatgtatgc aatggctcat gtgggaacac tgacgttcta
129101 tgtttcctca ccattagtca aaggcatcaa gtgttgtttc tccagatttt
129151 gatctgggga acgtaaattt aacctaccaa tgctaacagc aaactgtata
129201 tccttttcaa agagcatcat cttaagtcag tacttatgag gcaagaagag
129251 agtcaacaca cattaaattc agaggaaaca tagtatgtaa tggctatgcc
129301 aatgtaggaa aaaagttaat ttagattctt aagaggattc ctttcaaacc
129351 acttacctat aatgtttccc aaagcccata ctgcttgttc acaaacattc
129401 tgatgtggtg aacgaagaag tctcagaaaa agaggtactg catctgtaat
129451 aaagaaaaac taatatttat actagcaaca tgttgaagag tttacagatt
129501 tcagatcaaa gaaattgatc aaatacacag cctggcatat tgtagctgga
129551 agaacaaatg tggcaaatat ctttacccta aaaagaatca atttcagtat
129601 tttcccctag taatagtcaa gtaccgtaac caactggcag tatctaaagg
129651 ttgctatcat accattaact aaaagaaagc aacagcatga aatccttcct
129701 ataatccatt aaaaaaaaaa aaaaaaaaaa aagagttcct accccaaaca
129751 tgtaacctta aaatgtaatg ctttagtcta caaaatctca attcctgata
129801 cggggattaa ccaaagaact gattaatctc atatcaggtc tatcttatac
129851 tttaaaataa tttctcataa tccttactct ttacagaatg tatacattat
129901 acccatttcc agcataagct agatcacttt ttaaaaattt caatcaactg
129951 tgcactacct catttttttt tttttgctgt atctgtgtat tacttgtatt
130001 atttacttaa aatttaaatt aattcagttt taacaacttt acggagatat
130051 aattacaata aatttacatt taagtgtgta attcaatgac atttcatatt
130101 tatacagagt tgtgaggaca tcgccacaat ctaattttat aacatttcca
130151 ggacctcaaa agaaatcttg gctgggtatg atggctcatg cctgtaatcc
130201 taacactctg ggaggccgag gcagatggat caccaggtca ggagttcaag
130251 accagcctgg ccaagatggt gaaaccctgt ctctactaaa aatataaaaa
130301 ttagccgggc gtggtggtgg gcgcctgtaa tcccagctac tttggaggct
130351 gaggcagaga actgcttgaa ccagggagac ggaggttgca gtgagccaag
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FIG. 7 CONT'D

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130401 atcgtgccac tgcactccag cctgggtgac agagcaagac tctgtctcaa
130451 aaaaaaaaaa tatcatactc agccgggcac agtggctcac acctataatc
130501 tcagcacttt gggaagcgag gcgggcagat cacgaggtca agaggttgag
130551 accatcctgg ccaacatagt gaaaccccgt ctctactaaa aatacaaaaa
130601 ttagctggac atggtggtgt gtgcctgtag tcccagctac ttgggagggt
130651 gaggcaggag aattgcttga acccaggaga cggaagttgc agtgagctga
130701 gatcacgcca ctgcactcca gcctggcgac agagcgagac tccgtcttaa
130751 aaaaaaaaaa aaaagaaaag aaaaaagaaa aaagaaatct catacttaag
130801 gcagtcattc cacatttgtt cctctgccac acattcccca agcggcaggc
130851 aaccattaaa tatctgcttt ctgtctttac agatttgcct attctggaca
130901 tttcatacaa atgaaatcat actgtgtttt ttgggggtc tgacttcact
130951 taacattctt caggttcatc catgtggtaa caggtattgg tacttcattc
131001 ttttttactg ctgaattgta ttccattgta tacaccacat tcactttatc
131051 cactcctcgg ttaatgaaca tttgggttag ttatgaataa cattgctgtg
131101 aatatttatg tacaagtgtt tgtatgaata tgttttcata tctcttggtt
131151 tcacctagga gtagaactgc tgggtcacat gataactttt tttttttttt
131201 tgaggtggag tctcgctttg tcacccaggc tggagtgcag cggcacgatc
131251 tcggctcact gcaagctccg cctcccgggt tcacgccatt ctcccgcctc
131301 agcctcccaa gcagctggga ctacaggcgc ccgccaccat gcccggctaa
131351 ttttgttttt gtatttttag tagagacagg gtttcaccat gttagcaagg
131401 atggtcttga tctcctgacc tcgtgatcca cccgcctcgg cctcccaaag
131451 tgctgggatt acaggcttga gccactgcac ccagcctttg tttttgagat
131501 agggtctcac tctgtcgccg gggctggaat gcagtgtgca gtctcggctc
131551 actgcaacct ctgcctccct ggctcaagcg atcctctcgc ctctgtctcc
131601 tgagtaggtg cgactatagg catgcgccac catgcaatgc taatttttaa
131651 atattttgta gagacacgat tttgtcatgt cacctaggct gttcttgaac
131701 tcctgaactc aagtgatctg cttgccttag cctcccaaag tgctgggatt
131751 agaggcatga gccacctgtg ggtctggtga gaatagtatt ctcaatacat
131801 gattcaatgt aacttactgc catatcacat gctacttaaa atcaccttga
131851 ttaccacacc taaaattagc taagtgtccc atactataat aacgtacgtg
131901 gtgatatcta gtacttttct aaagagcttg tgtcagtgtc atttaacaat
131951 aattattagc ccatcttgag gaaagtaaaa tttaaaatat gtcataagct
132001 aaaaggcaga agccattcag catcttgaag atatcagaaa cggaatttaa
132051 aatcctgtta tcacagcatg atgtctactc caaaagataa aactctactc
132101 ttcttttaat aaccacaatt aaaaattttt catgataaat taatgacggc
132151 tatgaaaaag atatcggtca tcaaaagtaa cttataaaag tcatcattta
132201 aaaaatgtta caagataaaa tttctttatt acaaaactct acttccttgc
132251 catcattaaa acacaaaaag ttcagacagt aaggaattta cttactagac
132301 tgcacaacag cttgagtctg tgcagaagtt cctgatgcta tgttagttaa
132351 tgcccaagca gcttcaaact gtaatgaagg actgtaaaaa aacaataaca
132401 catcttttta gacacataac taccacttaa ttaatgaatc ttaagactga
132451 taagatatgg ctattctttg ccttgtcctt gaatttcacc ttgttataat
132501 ccaattgcct gctagccaac cctacttttt ttttttttt gagatggagt
132551 ctccctccat cacccaggcg ggagtgcagt ggcgccatct tgactcattg
132601 caatctctgc ctctggggtt caagtgattc tcgtctccac ctcccaagta
132651 gctgggatta caggtgcaca tcaccacacc tggctcattt ttgtacttt
132701 agtagagata gggtttcact atgttggcca ggctggtcct gaacccctga
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132851 cccaaagcca gtcactatga acctgcttct ttatgtccac tggtattaca
132901 acatttagcc agtcattatt tcccttgact tcgacttcct ctccacagac
132951 acatctaatc aatatatcat gtcgatttta cctcttaaac atttcttaca
133001 tttatataat caccctaat atcaagtgct agttgaggcc ctcatcatct
133051 cactttaacc actatcacac gctctaggct ggtcttaaag ctagaacccc
133101 atctgtctcc attacaccat ctgctttaca tactagggat attacaaggc
133151 tgtataattt tgttgaaaaa acaagatcat tatattttcg aatagtaatg
133201 gaagacctca caaagaaagt gacaactgaa ctagcttttc aaagatggat
133251 ttaaaaagaa aggcagtgac agtgggaaat aaaacaggta tcatgcatgg
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FIG. 7 CONT'D

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133301 aaggatcatg atgtgtagga acgacaagga ttagatcaag agagctgaaa
133351 ctaactaaga agcaagtaac agggtgtttg tgcatgtgtg tgtgtgtttc
133401 aggatgggag tgaggagtgt attctacaga tatgctaagg atggggcatt
133451 gaaaaaggga ggaaagaaaa taatgttcaa atcaatggta tgcagaatgg
133501 ctaaaaaagg ttaaaggctg atataggaga gacctattaa aagacatgtt
133551 ggggcttaca cctgtagtcc cagcactttg ggaggctgag gcaggcagat
133601 cgcttgagcc aaaaagttcg aaaccagcct gggcaacacg gtgagacccc
133651 atttttacaa aaaataaaaa aatcagccag atgtggtggt acacacctgt
133701 agtcccagct acttgggatg ctgggcgggg gtgggatggg gggattgctt
133751 gagcctagga gtttgaggat tcaatgagct gtgattgtgt cactgcactc
133801 cagcctgggt gacagagtga aaccctgtca caaaaaagac ataaaggaaa
133851 gacctgttaa aaggaaatga tagatattaa gttaggatag ctgaaagagt
133901 acaaattccc ttaagtggaa taccaaggat tgggggggatt tagtcagcaa
133951 aaattaagat tagacaaagg ttagggagtt tgaagaaaag cctataaaca
134001 gggaagagag caagcaaggt tgttagtatc aaaaggttaa agaagtccgg
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134101 tggatcacct gaggtcggga gtttgaaacc agcctggcca acatggcaaa
134151 acccccctct tactaaaaat acaaaaatta gctggacatg atggtgcgtg
134201 cctataatcc cagctgctcg ggaggctgag gcaggagaat cccttgaacc
134251 caggaggcgg aggttgtggt gagctgagat tgcaccactg cactccagcc
134301 tgggcgacag agagagattc catctcaaaa aaaaaaaaaa aagaaagaaa
134351 aaagagaaaa aaggttgaag agatccaaga acaaaaggtt ttaaggagaa
134401 tagatgtcag agatatagca aatagtgata tacaggttaa aaagatggaa
134451 catatgagaa aatgaagtag cagagaagaa ctatgagggg actttaaaaa
134501 actcattaaa aatgtgtatt atgaaaaaaa ctccatggat ttcaattttt
134551 ttgcaccaaa ataaactcat actaactttc tatacacgtc tgaacatgat
134601 ctagtttgag gcactaagag gggtaagggg taagtcatca atctgaaaag
134651 agcccctaga agagcaacat gaatcctgct aaaattaaag caaaaacaaa
134701 catcaaattt atggtgaagc ttgggtgaaa taatggtgaa ctcactgatg
134751 tacttaaaac tttacgggga aaatgccccc aaagaaatca gcggtttaca
134801 aatggttaac tccttttaag aagggacaag tcggccgggc atggtggctc
134851 acgcctgtaa tcccagcact ttaggaggct gaggcaggcg gatcacgagg
134901 taaggagatc gagaccatcc tggctaacac ggtgaaaccc catctctatt
134951 aaaaatacaa aaagtcagcc gggcgtggtg gcaggcacct gtagacccag
135001 ctactcggga ggctgaggca ggagaatggt gtgaacccag gaggcggagc
135051 ttgcagtgag ctgatatcgt gccactgcac tccagcctgg gcgacagagc
135101 gagactctgt ctcaaaaaaa aaaaaaaaaa ggacaagtcg atgttgaaga
135151 tgaaatccac agcggcaaac aatcaacaac aatatctgag gaaaagatta
135201 atcttggtcg tgccctaaca gaagatgatt gctgattaac agcagaaaca
135251 ataaccaata ccagacatct tgattggttc agcttacaaa attatgactg
135301 aaaaattaaa gttgagcaaa ctttcccctt gataggtgtc aaaaccattg
135351 tgcccagata agccgtagac aacagcagag cttccaatga aaattttaaa
135401 ccagagggat caagatcctg aagtatttct tcaaggaatt gtaaaaggag
135451 atgaaacatg gctttcccag tatgatccta aagacaaagt acaatcgaag
135501 caaaagtgga ctggtcagga ggaaaggtaa tgactaaaaa gtttttgggg
135551 atgctcaagg tattattctt gttgaccttc tagagggcca aagaatgata
135601 acacctgctt attatgagag tgttttgaga aagtcagcca aagctttagc
135651 agaaaaaagc ctgagagagc tttaccagag agtctttctc caccacaatg
135701 tttctgttca ttctgctcat caaacaagag caattttgca agagaatcaa
135751 taggaaatca ttaggtatcc accttacagt tctgatttgg ccatcttgtg
135801 acttcttttt gtttcctaat cttaaaaaaa caacctgtaa agggcatcta
135851 gttttcttca gttaatatca tgaaaaagac tgcgctgaca tggttaaatt
135901 cccaggaccc tcagttcttt agggatagac aatggctggt agtatcactt
135951 acaaaagtgt cttgaccttg atggagctta tgttgagaaa tcaagtttat
136001 atatttatta tctttcatat attttattgt cttttgattc cacttttcca
136051 caaacttta aaatttcccc tgtatatgat gaattctagc agaaggcagg
136101 aaataagatg gtatatcaga ggcagggaag aagtaaaaaa aacagtaaga
136151 tcaaaaacag taagacagta tatgttgcct cagactggaa ggagaaagtt
```

FIG. 7 CONT'D

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136201 attaagctgg ttaggtggtt tggcaaaata ctgggaatgg gggacttaaa
136251 tgagaaaatg gataaatgta aaaaataaaa ttataaagcc aaagaaagtc
136301 tttcaagatg tcatgtggaa aaataaaaaa aaatgagaaa agatatagaa
136351 aaaacgagtg caataacaaa tggacattta tggccgagtg cggtggctca
136401 cgcctgtaat cccagcactt tgagaggccg aggtgggtgg atcacaaggt
136451 caggagatcg agaccatcct gtgaatggtg aaaccccatc tctactagaa
136501 ataaaaaaat tagctgggcg tggtggcagg cgcctgtagc cccagctact
136551 cgggaggctg aggcaggaga atggcgtgaa cccaggaagc ggagcttgca
136601 gtgagccaag attgtgccac tgcactccag cctgggcaac agagcgagac
136651 tcggtctcaa aaaaataaat aaataaaaat aaaaaataaa tggacattta
136701 tcataagttt gacattgtgt agagtgcttt gtatgtatta tttccattcc
136751 ttaccatcac ctaattttta tagatgagat agctgaggtt caaaagccac
136801 gtggatttt atcaacagca aaccctggat ttgaaccaca gtcaatctgg
136851 ctccaaagta tatggccttt tacattataa cacaacttcc catgacaaat
136901 ccataaagtc agatccaaat cacggaaaat tttctgtttt tgctttgggt
136951 ggtggttaca gaggtctgag tttcataatt attcattaag ctgtatatat
137001 tttagcatat ttttctgtat tatatgttat gtttcataga cacagacaca
137051 caaatgagtc tacatataaa agactggaaa gaaaaggaaa aaaagaagaa
137101 gagaagttgg ccacaaacaa ggggccctag gccgggccca gtggctcatg
137151 cctgtaatgt ctgcactttg ggaggctaag gcaggaggat cacctgatgt
137201 caagagttca agaccagcct ggccaacatg gtgaaacccc atctatacta
137251 aaaatacaaa aattagccac acctgtaatc ccagctactc aaagaggctg
137301 aggcatgaga atcgcttgaa cccgggaggc agacattgca gtgagccaag
137351 attgcaccac tgcactctac cctgggcaac agagcgagac tctgtctcaa
137401 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaagaacaa ctggagggtc
137451 ctaaaggtag aagtagaata gaacttattt atttatttat tttattttat
137501 ttttattatt attatacttt aagttttagg gtacatgtgc acaatgtgca
137551 ggttagttac atatgtatac atgtgccatg ctggtgtgct gcacccatta
137601 actcgtcatt cagcattagg tatatctcct aatgctatcc ctccccccctc
137651 ccccctattt attcatttat tttgagacgg agtcttgctc tgtcgcccag
137701 gctggagtgc agtggtgcga tctcggctca ccgcaacctc cgcctcccag
137751 gttcacacca ttctcctgcc tcagcctccc aagtagctgg gactacatgc
137801 gcctgccacc acgcccggct gatttttttt aatatttttt aatagagaca
137851 gggtttcacc acgttagcca ggatggtctc gatctcctga cctcatgacc
137901 cacctgcctc agcctcccaa agtgctgaga ctacaggtgt gagccactgc
137951 acccagccga atttatttt tgagtcaggg tcttgctctg ttacccaggc
138001 tggagtgcaa tggcatgata ttggctcagg acaacctcca cattccaggc
138051 tcaaacgatc ctcctacctc agcctcccaa gtagctggga ctataggcat
138101 gtgccaccat gcctggctaa ttttcgtgtt ttttttttt ttttttttgt
138151 agagctggga tgttaccatg ttgcccaggc tgctctcgaa ctcctggact
138201 caagcgatcc acctacctcg gcctcccaaa gtgctgggat tacaggcgtg
138251 agccactgcg tccagccaga atttatttt tcaacagcta aaataaaact
138301 tacctttact taagtaacac tgttacagaa aacaaacatg atagtatttt
138351 aaaaagtgtt acaggcctgg gggtggaaag tgggagaggt tgtggcacac
138401 aacgaaagca aatggtattt ttaaatacta aaaaccctta gtggcaacat
138451 ttatatacca ctattcttat ctagccaact gaaaattcct tggacaacat
138501 ttagcaaaat atcccaagtt tcagtctaga tgctcttaaa tgcaaaaaaa
138551 aagcatttgt tttaatatgt tttggagttc aaacttatat tctccccagt
138601 taatccaaat taacaaagtt taaggcacag cactgagata tcactaaaca
138651 aaaatggaaa tagggccagt tcctcaaaag atatccagtg gagttttact
138701 ccttctctcc tgggtaaata taacctgtcc ccttattctt aatttgcagc
138751 aaacaaaaag tctgacattg gacaacttat catggatgaa gttctgttaa
138801 agacaacaca gaggatcagt aatcagctgg aagattccca gggtaagaaa
138851 gagccactta gttctggaaa ccatccatgt tgacttagtc atgaggttaa
138901 tctatatata ggctcataag caaagagtga ctcaaacatt atttgggttg
138951 ttttaaaata ttagtaataa aaaatcctaa taaagactat aaatatttga
139001 gataagttaa aacaggcaat aaacaggaga taaaaatttc ctagaaaaca
139051 tacacatcct tcagaaatga aaacgagaag cactctgggt ctgctaaata
```

FIG. 7 CONT'D

```
139101 tgatcacaga ataagaaaat taaattaaaa tatatgacga ttgaaaaaca
139151 tcataagtac aaaaccaaac tgaactcact ggttaagtaa taatccaaac
139201 ttttaagtta actgaaaaaa actgaatagg gagtaaaatc catacttact
139251 tatcatccct ttctagacat ttgactagaa ttggtaaaat cccagatttt
139301 attaagtcat caatcggtgg atttctgtca ctggataaca gttttctagg
139351 aaaataaata tgagaaatta attgctataa ttttcaaact gtgaaaagaa
139401 ataacaacat attaacttct agactaccag gtaacacaac tgaggaatga
139451 cataattctc tctctagaca aattagtatt taccttgctg cctggacagc
139501 actcaattgg accactgggt tatcacttgt ggcattctgc aataccaaat
139551 gtaaatttca gaaatgaaaa aaaaaaaatc aatttcaaaa tacttcaaaa
139601 cgagagtatt aatttagtaa catacctgca atatagcttc tagggttaca
139651 ttttgcttaa aaagaaaaaa aaaatagttc agcagagttt attaacaaaa
139701 ttacattcat taaacagtgt acctgagtta atatactttc attatcatta
139751 taaagttggt cttatattaa aaatgaagtt ctcacagtta ctataaaaat
139801 tattttaaaa tcactattaa aacatggtaa cttactgctt taaaatcagc
139851 atcaacatct gaatcttcta gactttcttc ttggggaaca tttctctttt
139901 tcaataagtg ttcatctctt ttgttctgaa aggcaaccaa taaatgctta
139951 agaagtcata aggactactg ttaatgaaaa atccattaaa actacttcaa
140001 ctttattagg caattatgaa acaaatactg aacacataag gataatatga
140051 attaaatgtg catactgcaa accaatgaca agggtcacat tctggcttcg
140101 gtaacaaaat ttcctggctg gcttttacac acacacactt cattaagcac
140151 ccactgtggt gttttttttt ttttttttt ttggagacaa gagtcttgct
140201 ctgtcaccca gtctggagtg cagtggcaca atctcagctc acttccaacc
140251 tctgcttcct gggttcaggt gattctcgtg cctcaaactc ctgagtagct
140301 gggattacag tcgtgcgcca ccacacctgg ctaattttta tatttttagt
140351 agagatgtgt ttttgccgtg ttggccaggc tgatctcaaa ctcctggcct
140401 caagtgatcc gcttgccgcg gcctcccaaa gtgctgggat tacaagcgtg
140451 agccactgcg ccttgcctat ttgcgtaagt ttgctcatac ttaaattgta
140501 gattgtttgc aaaaatggca gtaattcccc ttcccatatc cagtcccgca
140551 ctgactgtag gcatggctgt gtgacttgct ttggcaatgg gacattaagc
140601 aaacagactt gaaaagtgct tacacatcag ggacaggttc tcttttgcaa
140651 ctttttcct gaaatcacct tgtgaacact gagccatgga gaataagact
140701 gtgtggacaa caaacaagtc ccagccaagt tacctgagac catgttagat
140751 catctagtca ccaaccaacc ctgtcagctg accagagaca gtaagggaag
140801 cctgcagaaa acagttgaac tggcctgtgc cagaaaaccc actctgccaa
140851 cccacaaaat tgttagctca ataaaatggc tattgtttta agctacatag
140901 tttggagtgg tgtattatga agcaaaaaac tagatgatgc actcatgttt
140951 ttaaatttat gctgtattta aattaataag acttctaaaa ttcctggtat
141001 tttgttgttg ttccttctct ctacttgcta taaatttgtc tcctgaatta
141051 ccactttaac tgtattctac aggttctgac atataatagt tttcctactg
141101 ttcattttta ggtattccta gaatccatta agatttcttt tatactcaat
141151 atattcaata tattcagaca tactttaaaa cgttcacaac tatgaggttt
141201 ttgtaactgt cttattcagt gatttctaat ttaattacat tgaagtcaga
141251 gaacatgtat gtacaataca ctgaaattag ctgacatctg ctttatacca
141301 gaagttccca aactttctca gtccacagtg tacgccaaag tagtcatttg
141351 ggaaaaagaa aagaaaaaca aataaactaa aagaaaaaat tatttcactc
141401 ttagataaaa taattgtaga aaggaatgta gtgttattta agtgtttaaa
141451 ctgtggacta cctcgagatc taatagttct gtggtgtctg aaagatgtca
141501 ctgtatttct ctcaaaactg aaatatccca aagacccttt caggtcactg
141551 tggagcccca tgttacctca gcgcagagtt tggaaactac atcttattct
141601 atcataaaac cagtttccaa acacatatgt ggttttacat gtgtctatta
141651 gttaaaattt gtgaattaaa ttattcaaat tttctatctc ttcttgtgtt
141701 tattcattac taagaaaatc tcccacaatg attatatctt tgatgaattt
141751 ccccttctaa ttttgcaaat tttgacttta tatatatata tatacacaca
141801 catatatata tatatataga gagagagata gatagagaga gagagagaga
141851 gagacattct attaggcata tactagttta gagctattat agcttctttg
141901 taaattattt cttttatcaa acattgggta acaacccctg catttaaatt
141951 gaaaacatcc taacatagac caaaatatct atggcacaag aaccatattt
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FIG. 7 CONT'D

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142001 acttattttt tatttttag atggagtttt tgctcttgtt gcccaggctg
142051 cagtgcaatg gtgcgatctc agctcactgc aacctccacc tcccgggttc
142101 aagtgattct cctgcctcag cctcctgaat agctgggatt acaggcatgc
142151 gcctccatac ccggctaatt ttgtattttt agtagagacg gggtttctcc
142201 atgttggtca ggctggtctc gaactcctga cctcaggtga tccgcccacc
142251 tcagcctcca aaagtggtag ggttacagtc gtgagccacc gcgcccgccc
142301 catactttac tcttaacaaa aatatgtaca agccaaggaa aaataatcac
142351 tgggcaggtt tctaatggtc agattaatca ttaaaaccag taacttaaac
142401 tgtcccttca gttgatacct agagattttt accctcctga aaactgcact
142451 acaataaatt cagcatccgt aaagggtata cttttctttt gtcaggtgag
142501 aaagcagctc aggggttatg ggaacttacc taatttcaac acccaaccaa
142551 tccttaaaca cacatatgga ttaaatggat ttcttaaatt cctttaaaaa
142601 tccattatta atctattatc cacgtatgca tgtatctacc tagccctttt
142651 ggatcttctg ttttttacta ggttgaacca catgaactgc tttgtaggtc
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142751 tgagttagta agttctgtat gttattaaac tctatataaa gtacttcctt
142801 ttcattccca aattcctctt tccaccttga aaaactggct tgcaattcta
142851 tacctaaact tgtggagcaa gtttgatgcc aattctttta aatcttatga
142901 aaaggataat tacattattt atcagccccc tttcaagctt gaaataagta
142951 attaaatctg tttttatcca ataataccct cactttaaat cttcatctag
143001 tttaggtttt agttccttgg gttttgtttt gtttttaag aaatagtcca
143051 accctggttg catctaaatg cttttaatga ggtaggaaaa tatactcaat
143101 gaaaattccc ctcaatatta acatttatga aatgatatta ctgctgggtg
143151 actacatgga tattcaccca caagttttat aagttatatt tatgttttgg
143201 gcactctgtt cagtgtgtta tgctttgatt aaaacaaatt ttttaaaata
143251 acactactgg ttcatgaatc atgttaagaa ctgacaatct aatgcatgtt
143301 tctttttcc ctgcaggatc atttaattca tcttatcaaa tagctgcttt
143351 tttcgatact aacttagact ttttttggta actgaaattt ttattgagat
143401 aattgtatat tcacatgcag ttataagaat atggagagat cccttgtatg
143451 ctttgcccag gttaccccaa aggtaacact ttgcaaaact atagtacagt
143501 atcacaactg ggatactgac attgatacaa tccacttatt ttattcagac
143551 ttctcgtttt acatgtattt gcatgtgtgt gtgtgtatta catcccatac
143601 aattttatca cctgtataga ttcatgttat ctaccaccac agtcaagatg
143651 gtaaacactt ccaaaaacac aagatgcatt cctcctttta taagcaaaat
143701 caactccttc tcatctgaca ccgtatataa cccttggcaa ctactaacct
143751 gtcttccatt tctaaaattt tatcatttca aaaattttat ataaatggga
143801 tcgtatggta tataaccttt ttatgacaga attataggct cagtataatt
143851 gtctggagat ttatataaat tgttgcttgt atcaacaatt gttgcttata
143901 taattgttca tttttattgc caaatagtat ttcatcatat agatatactg
143951 tagacatatt acagtatgtc tatttaccca ttaaaggcca tctgtgttgt
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144051 acagatttca tatgaataca aatcttcctt tctctgagat caatgtccag
144101 gattgtaagc actgggttat acagaggttg catgtttaga caaaaaactg
144151 acaaactgtt ttccggagtg actgtaccat tttacatttc caccactaac
144201 atgagtgatc agtttctcca catcttcgcc agcatttggt gttgtcacta
144251 ctgtttattt tagctgttct gatagatgtg tagttgtggc tttaatctct
144301 atttccctaa tagctaacga tgctgaacat cttttcatgt gcttatttaa
144351 tatctgtatg tcctcctttc aatgaaatga ctcttcacat ctttttaaat
144401 tagactgttt tgtttttttct tactattaag tgtgtgtgtc tgtgtgtgtg
144451 tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg taagagccag
144501 gggtctcact atgttgccca ggctagagtg cagtgactgt ccataggcaa
144551 catcatagca tactgcagcc tccaactccc gggctcaaga gttgtttttg
144601 cctcagcctc ctgagtagct gggaatacag gtgttatgcc actgcacctg
144651 gctcttactg ctgagttctg agagttcatt gtatgtgctg gatactagtc
144701 ttttactgaa tacgtggttt aacagatatt ttcttccaat atctaacttg
144751 tcttttctat cttttcatat gggctctcac acagcaaaat ttttaattta
144801 atcaggtcca atttatcaat tgtttctttt atggattagg ctttcgtggc
144851 caaatatagc tctttgtctc cagatccaga aaattctcta tgtttttcc
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FIG. 7 CONT'D

144901 taaaactttt atagctttgt gctttacatt taattctata atccattttg
144951 tatttttgca taaggtgtga agtttaggct catcattttt gaaaaagctg
145001 tccttccctc cattgaattg gttttgtaac tgctaaaaat cagctggagg
145051 tatttgtgca ggtgtatttc tgggttatat tttctgttcc atggtctatg
145101 tctttccttc taccaataac acacagtatt gattactatg gctatatact
145151 ataagctttc atattgcgtg aagtaatttc ccctttttc ttgtcaagat
145201 tgttttagct attctagaga ctgtgtcttt ccatacacat ttttaaatgt
145251 ctatctatgt ccacaaaata tcttggttga atttcaatag gaaatgcatt
145301 aaaccaacag atcaatttag ggagaatcaa tgtcattatt acgttgaggc
145351 ttccaatcca agaacacagt atacatctct ccatttactt gtcttgtttc
145401 atgtctttca ccagcatttt gtaatattca ctgtataaat cctgtacatg
145451 tttgttaata tatactgaag tattttattt tctttgaatt gtctaaaaat
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145551 ctgatttctt tattctgtga ccttgctaaa ctcacctgtt agttccagga
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145751 gaataagagc agttatgatg gacttcctca ccttgcttct gaatctcagg
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145851 ttgtggtgct ctttaccaag atgaggcaat tcctttctat tccttttatc
145901 agaaatgagt aactgatatg atcatatttt tctttttggg cttattaata
145951 tgggggaatt tagagtattt ttaaaagatc tttcaaacaa ttaactaaac
146001 aagtactgga tcttatcaag caagtggggc acttgggtgg atttttttctt
146051 tatgtaggat cttaaacttg cctcacctcc aaatctactg aaaataaggg
146101 cctatggcct gactgaccaa tcatcaagaa aagattaggt caaatttaat
146151 ataatgtgcc aaaagttgaa aatataagta acaggttttg ggctcattct
146201 caacccacga agcattattc aaccaacaca catgtatttt gagaggcatt
146251 atagcataat ggtaagagct ctgccattta ttagcttgtg actatgcaag
146301 ttacttaatt cctacataac tctgtctaca atgtgatgaa aaaaaagagg
146351 tacagatgtg tgtttaagtg ttgatgcata aaagcctctc taaattggga
146401 agaaagagag caaggaggta aaagaaaaaa caattcacac gaaaggagtc
146451 agaggccagg taaacagtac ctattaataa acagatgtca tctgtcatcc
146501 tcaattttga cggatcagta tctgttattt gaagtgtgat ccttacacta
146551 gttaataatt ctcaaactgt ttgttacagt tctgctacaa gataaggagc
146601 ttttaccttc agggtgataa gcctctaaag taacaaaaaa aggtggggag
146651 gtgagcttgt gccagaatgt aaaccaactg tgaaactaag cacactgttt
146701 agttcagctc tttatttaga cagaaagacc tgctttaaac atattatttt
146751 taaaaagttg acaaaaattc tatatatgta ttgagtaaaa catgatgatc
146801 tgaaatatgt ataagctgtg gaataatagc tatgagttaa taaacacagc
146851 tgagtgcagt ggctcatgcc tgtaatccca gaactttggg aggctgaggc
146901 gggcagattg cttgagctca gaagttcaag accagcctgg gcaacatggc
146951 gaaatcccgt atctaccaaa aatacaaaaa attagctgag caaactggtg
147001 agcacctgtg gtctcagcta cccaggaggg taggagaatt gcttgagcct
147051 gggaggcaga agttgcagcg agccaagatt gtgccactgc actccaactt
147101 gggtgacaga atgagacccc atctcagaaa aaaaaaaaaa aattaacaca
147151 tgcattacct tacatttcat ttttgtgtgt gtggtgaaaa cacttaaaat
147201 ctactgtcag tgatttttca agaatataac acattgttat taactatagt
147251 tcataaccat gtgatatggt ttggctgtat tcccacccaa atctcatctt
147301 gaattgtaac tcccacaatt cccgtgtgcc gtgggaggtg attaaattat
147351 gggggtgggt ctttcctgcg ctgttctcat gatagtgaat gagtgtcaca
147401 agatctgatg gctttaaaaa caagtttgcc tgcacaagct ctcttgtctg
147451 ctgtcatatg ggatgtgcct ttcaccttct gccatgattg tgagacctcc
147501 ccagccacat ggaagtgtga gtccaataaa cctctttctt ttgtaaattg
147551 cccagtttca ggtatgtctt tatcagcaac gtgaaaactg accaatatac
147601 catgttctac agtaaaggtc ttgaacttat ccctcctatc taactgaaat
147651 tttttatact ttgaatcaat atctccccaa atccctgtac cccccacccc
147701 tggccccagc ccctggtaac caccatccta catgagtcta gctttttag
147751 actccatgca taagtgagag catgtgatac ttgccttgtt tgcctggctt

FIG. 7 CONT'D

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147801 atttctggta atgtaatgtc ctccaagttc atccacgttg ttgcaaaaga
147851 gagggtttct ttcttttaag gctaaaaagt attccactat gtatacatac
147901 cacattttct ttttctattt gtctactggt ggacatttgg gctgattcct
147951 tatctcgggt attgtgatgc aataaacatg ggagtgcagg tatctcttca
148001 acatactggc ttcatttttc ctttggatat atacacagta gtgggattgc
148051 ttgatcacat ggtagttcta tttttaggaa cttccccata ctgctttcta
148101 taatgtctat actaatttac attctgacca agagtgtaca agagtttcct
148151 tttctccaca tcctcaccaa catgcgttat ctttcatctt tttgataatg
148201 gttattctaa caggtgtaag atgatatctc acagtagttt taattttatt
148251 tctctgatta gtaatgttga acaattttta gtatacctat tagccagttc
148301 tatgttttga gaatgtttat tctgctcttt tgccctttt ttttttttt
148351 gagatggagt cttgttctgt cacccaggct ggagtgcagt ggcgtgatct
148401 cggctcactg caaactccgc ctcccaggtt cacgccattc tcctgcctca
148451 gcctcccgag tagctgggac tacaggcaaa tgccaccacg cccagctaat
148501 tttttgtatt tttggtagag atggggtttc acccgtgtta cccaggatgg
148551 tcttgatttc ctgaccttgt gatccgcccg cctcggcctc ccaaagtgct
148601 gggattatag gcgtgagcca ccgtgcccaa tccttgccca ttttttaatt
148651 gttagttttc ttgctattga gttcattata tataacccct tatcagatgt
148701 atggtttgca aatattttct ataggttctc tctttattaa tagtctcttt
148751 tgctgtgcag aacctttaa atttgatata attgcatctg tctatttttg
148801 ttttgttggc tgtgtttttg gggtcatatc caggaaaaca ttgcccagac
148851 cagtatcatg gagattttcc cctgtgtttt cttccagtag ttttacagtt
148901 tcacatctta tgtttgcatt ttaatctatt ttgagttgat ttttgtatat
148951 ggtgtgaaat aagggcctgg tctcattcat ctgcatgtag atagccagtt
149001 tttccaagac catttattga aaagactgtc ctttcctgtg gcatgttctt
149051 ggcacctttg tcaaaaatca accaactaca aatttgtgga tttatttctg
149101 gtgaaataaa ttcttgcgtg tcagagcata tcttttcaaa tattcacctt
149151 agttgcctta gacacccctt tctttttttc tgtataacat tatttccttt
149201 ccagttacta tggttcgatt tctgaaaata cttgtagtag gaccaaaaat
149251 gaaattaact aaagaaatct caagtaattt cttatttcaa atttaagcat
149301 tccccaagta agccgtagaa agcaaacttt tctgttccac tgttctgtgt
149351 gtgtgttttt atgtctctat catgctgttt tgattattat ggctttgcag
149401 tagattttca tatcaggtag tgtgatgctt ctgggttcat tcttttaaga
149451 ttgctttggc tatttggggt cttctgtggt ttcatataaa ttttagtttt
149501 tttttttcta tttctgtgaa aaatgacatt agaggtttga tagagattgc
149551 actgaatctg tacatcactt tgggtagtac tgatatttta ataatactaa
149601 ttcttccaaa tccgtgaaca tgggatatct ttcaatttac ttctgtcaga
149651 aagactctct tgaaggaagc agtgccttct tttacatttt ggcacaagct
149701 ccctaacttg tcacagatca ggacttttga gtagcacggc ctatatctga
149751 agtatttgtc ttaaaacttc aatacatgac ttaaatataa gtgcatattt
149801 ttagagatca taattaaatt taattcgtga atatcagcac ttaatcgact
149851 acatagccac aatgtgatta ggcattttga gatgggctaa gaaagagact
149901 taggagttat ttgggaggct ggggtggagg gatgtagatg gatagtgaat
149951 gtggttatta tctgcacttt agaagcttac aatctaaggg aaaatgaaat
150001 attcaaagca aaatcccatg gagtaaagtg agttacaatt gacagatgat
150051 atccactagt ttaatttctc agtgaaactc tggggactag ctctcttttg
150101 ttttcaagaa tctcaatgtc actaaataaa aacaatgtga ttctctcctc
150151 aatggagcaa tagagagagc aaggcctgga atcagggaca gatactctga
150201 ccataaagag tggaagaatc ttctcttgaa gagctctcca catctctgta
150251 aaatcacatc aaaatcaatt aagttttgtc tgaataaact tcaggcgttg
150301 tttcaggaaa agtttgcttt ctactgctta cttggggaat tcttaaactt
150351 gaaataagaa attgcttgag atttctttag ttaatttcat ttttggtcct
150401 actacaagta ttttcagaaa ttgaacctta gtaactggaa aggaaataat
150451 gttagccaaa aaaaaaaaaa agaaaggggt ctctaaggca actaaggtga
150501 atatttaaaa agatatgctg tgacatgcaa gaatttttag ttctataaat
150551 tagagaaggc agcacaacaa caggaggagg atcaagtaac caaatataat
150601 atataaatta gtagcttaga tttataagca cattagaagg gctaaaatga
150651 ttaaacaaga ggaggcttct gaactaatac aaaagtttta aagttgaatt
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FIG. 7 CONT'D

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150701 gcaagcgtga aaagttaagg aaaagtaagg gcccatatct ggtggcagat
150751 ggtgtaatgt taacagatgg caataattac taattactta attccaattt
150801 tacttctatt gcatctatta aagaaagtaa tcttcatttg gtgaatgaaa
150851 atccagacaa aaaaggacgc acactattct acctatatag agttctaaat
150901 atgcaaaata atctgttaga aatcagaata atggttacct ttggggataa
150951 ccaataccta gaaagaggcc ctggggtatt ctctttttg atccaggagc
151001 tggtggttac acaaatgtgt tcacattaca aatattcatc aagctggata
151051 cttacgacgt gtggactttt tgtatgtatg gtgtatgtca acaaaatgtg
151101 aaaaagaaaa aaagtttaaa gtgttaagac tggaaaaaac accttacttt
151151 attaagctaa ggcttagctc atttctctgg tctaaatgac ccaaagatct
151201 gaaagaactt gcaaatatga ttaccaaagt attgttgtgt ccataaagga
151251 gttgacaggg aatgggaatt agcaagtatt tttatgctta tgttaatgtt
151301 tattatgcta atgtttatta atatacaaaa tgattgatga ttaatagata
151351 atagacaaaa taattctatc attagttgtt aatccattga tgattgaaac
151401 aaaaaaatga tcttccttgt taatttccta attttggagc tactggacta
151451 attacataga aaatattcta tgttgtgagt agctggaact acaggtgcgt
151501 gccaccacac ccaactaatt tttgtatttt tagtagagac agggattcac
151551 catgttggcc aggatggtct cgaactcttg acctcaggtg aatttttga
151601 aatttagtaa atatatacta caactcttag caagtatttt caaaatttac
151651 ttttaaaaag ggggcgggga aagggtacag gagaatggat gtcaggaact
151701 atatactata ccaatgagca tgacactgat ttgcaaaaat tcaaaatatg
151751 gttatttaaa cacttagaaa aaataagcta atttcaattt atccttcagg
151801 tttcagctta aatgttattt cttcagacaa gtcacctttg aatgcccaat
151851 tttaaaaaaa acctcactct gttaactttc atggctattt ttcctccata
151901 gcatcatcca caatttgtaa ggatatattt ggttatgtga ttatttatct
151951 agtgttcacc tccatgagac aattgctcaa atggtaatgc ttggttgaat
152001 aactaaatgc atttctgatg aagaccttat gaatgtagtt aaaatgagct
152051 tctggcaata ttgttgtaaa actacagatt tgaagagcta cctagcccgt
152101 gtatgaaaca aagtgtgtat ttaaaataat tcttaaataa taaatgcaca
152151 agtctatttc tagtgactct aagaaaatgt gtactttcag aatcaagacc
152201 tccttccttc tccctacaac tgaaaagttt caagacggta atttttttt
152251 ttttttgaga cagagtctcg ctctgtcacc taggctggag tgtagtggcg
152301 tgaccctggc tcactgcagc ccctgcctcc agggttcaag caattctcca
152351 gcctcagcct cccgagtagc tggaactaca ggtgtgtgcc accacaccca
152401 actaattttt gtatttttag tagacagggt ttcaccatgt tggccaggct
152451 ggtctcgaac tcttgacctc aggtgatctg tccaccttgg cctcccaaag
152501 tgctggaatg acggcatgag ccaccgcacc cagcccaaga tggtaattca
152551 atataggaag gagttttagg agtgaattac atgaggaaaa gtctaaccta
152601 agacaaacac caaagatctg aaataagttt taaatttatt ttttaaaaga
152651 tatatgtata ggccgggcac ggtggctcac gcctgtaatc ccagcacttt
152701 gggaggctga ggcgggcaga tcacgaggtc aggagatcga gaccatcctg
152751 gctaacacgg tgaaacccca tctctactaa aaatacaaaa aattaaccgg
152801 acgaggtggt gcatgcctgt agtcccagct acttgggagg ctgaggcaga
152851 agaatggcat gaacccggga ggcggaggtt gcagtgagtc gagatcacag
152901 tactgcactc cagcttgggc gacagagcga gactctgcat cagaaaaaaa
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153001 ggattagcaa tttaaatatt tgtttcaaat aaaatgtgtt cacatgaaaa
153051 cacaatttgg gccaggcatg gcagctcacg cccgtaatcc caacagaagg
153101 acgattgttt gagtccagga attcaaggcc agcctgggca acatagtgag
153151 acctagtctc tacaaaaaat aaacaaaaat tagctgggtg tggtggtgtg
153201 cctgtattca cagctgggtg tggtggtgtg cctgcattca tagctactca
153251 gccagctgag gtgggaggat cacttgagcc cgggaggtca aggctgcagt
153301 gagccaagat cacaccactt cactccaacc tggacagagt gaaacgctgt
153351 ctcaaaaaaa gaaagagaaa aaagaaaaca caatctgatg aaggtaactc
153401 taaaatcctc caaaaataat ggaagaaaat acaataaatt ttaatagcag
153451 ttgctttcag ttgggaaaac acaaggtttt tctacttttc tacttttatt
153501 tacttctgta aagtatcttt aacaaggatg tgtaactttt acataagcaa
153551 agggagagga agcccacaga aagaggatgt caaagaaaat gtatctaact
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FIG. 7 CONT'D

153601 tcatcagatg ttatgagaat ttcagtgatg gtaaagtgct tcacacaggg
153651 cctagtaccc tcagtaaatg aaagctatta tgaataagta ccatgataaa
153701 gtatccagtg atgtgtggtt ttagggatga ccactaattt gccacagtat
153751 tttcattatt caagatacac agaattttaa catcagaaaa atctaattac
153801 ttttctttaa atgtaaatca accttacctt ccgcagttcc actgtcactt
153851 catttctatg tcttcgcatt gtctagaaaa gaaaaacaaa gattacagat
153901 gtatcaaaat acggacactg ctagtatata aagatctcag ctgggtgcag
153951 tggctcatgc ctataatcct agcactttgg gaggccgagg cgggcagatc
154001 acttgaggtc aggagttcaa aaccagcttg gccaacatgg cgaaacctag
154051 tctctactaa aaatacaaaa aaaattagcc gggcttggtg gcaggcacct
154101 gtaatctcag ctacatggga gactgaggca ggagaactgc ttgaacccgg
154151 gaggcggggg gatgcagcaa gccgaggtgg cgccagtgca ctccaggcct
154201 gggcgacaga gcgagactgc atctcaaaaa aaagaagaag aagaaaaaaa
154251 aaaactcagg tatttgagtt agaagtcatt taatattggc tgggtgcagt
154301 ggctcacacc tgtaatccca gcactttaga aggctggagg atcacttggg
154351 gccaggagtt cgagatcagc ctggccaaca tggcaaaacc ccatctctac
154401 taaaaatacc aaaattagct gggtgcagta gcacgcccct gtactcccag
154451 ctactcctgg aggctgacgc tcaagaatcg cttgaacctg ggagacggag
154501 gttgaagtga gctgagatca tgccactgca ctttagcttg agtgacagag
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154601 atgactgata catcttatac tttaaatgat gagctacaat tagttaaaaa
154651 gccaaattct gtatttactg gatatctgtt ggttaatttt gtggaaggtg
154701 ggacttggct gcctaggacc catttccctg ccctaactgt acccagtcat
154751 ctttggggaa ttacatcctt cccatcctgt agtcttaatg agacctaaag
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154951 ctatatcctt gacttgctca attcccagtt cttccatttc tctactcatc
155001 ttatgaacta ccttacattc ttccaataaa ttatggtttt gcttaagtca
155051 gccagggatg gtttctgatg tctgcaatca atgaattata tctctaatga
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155151 ataaaaataa gtttgagata gatgttttgt atcaaaaggt aaggtatcct
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155251 taatatatat ctcccctcta acatactgat ataatggatt cttttattac
155301 acatataagc atggttacat ctttatatta ttggaataaa ggctatatga
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155401 tttatttaat aattcttgtg atatctcttt cttaaaccac agtgatcttc
155451 ttaagaaaaa aaatctcata aaatccaaat tataaagttt gctaactata
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155951 gaattattaa aagatgatgc ataacaaaaa gatccaggca gcatatctgc
156001 tccaaaatat gattttctgc tctatcatct taattcacac taagatattt
156051 ctgtatagac agaattagtg agttaaattc tgaagaacca cactaaatta
156101 ggaaaccaca cttaagaggt gattaattta atgttttaaa cacccctaaa
156151 caggagttag ctcccaggta gtaagtgctt cgaatatgaa catctcaatt
156201 tatagacact ggtttgatac tctgcataag gaaagttgga aatagatttt
156251 tactgctaaa gtagaacagt tattcaagat atacgaattg actagaaata
156301 caggcacctc gattcttact tgtttggggt ctaagaatcc ggcaggccct
156351 acagcacaac ttcagagaag tttctgtgtc tagaaacccc cttgatcctg
156401 tgttccatcc cttcttagag aactgtatca cctaatccta gtcagaacat
156451 tgtggtatct gcttagggtt gaagttttct tacaaggtgg taatctccag

FIG. 7 CONT'D

156501 tctaaaagta ctatacccat gaaacgaacc atatgacttt tgtgactgct
156551 tactaataca tatttatata tgcagcataa ttctaagatt tgtgtatata
156601 actcactagt agcaaaactt caaaggcgaa agtatctgtt accctcacct
156651 atctctaata attaaagacc acttattcac ccgaaagaat catataaatg
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156851 agtgatctca tctaccctca tgtctgcaat tactgcttca tgaccactcc
156901 caagtatcta tttttagtcc actctgtctc ttaagctcct aatctataag
156951 tcattcaccc attcaacaaa aatttactca atacatttaa aatacattgg
157001 gcaatacatt tgccaaccgg gaagcaagta cagaattcac agtctagcac
157051 agggatcggc aaactataac ctgtgtatca aatctggcag gctatctgtt
157101 tctgtaggtc ccaacaggaa tggtttttac atttttaag tggttacatt
157151 ataaatgata ttaagtacct acatcatgct cttatttttg cctctttgcc
157201 ctcaaatgct aaaatattta ctatttgtcc ttttaaggaa aagttagcag
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157301 gcgggaggat cacttgagca cagccatgct cagctgattt ttcatttttt
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157401 cttgggggag ctgagatgga ggattgctta agcacaggaa gtcaagggtg
157451 caaggagcca tgatggtgcc actgcatttc agcctaggta acagagtgaa
157501 accctgcctt ggaaaaaaaa aaaaggtttg ccagcacctg gtctagtgga
157551 aatgagagta ataatgagtg ataaaaatgt gttaagctgg ccgggcacag
157601 tggctcatgc ctgtaatccc agaactttgg gaggccaagg caggcagatc
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157701 tctctactaa aaatatcaaa attagctggg catggtggcg cacgcctgta
157751 atcccagcta ctcagtaggc tgaggcacaa gaattgcttg aacctgggag
157801 gcggaggttg ccatgagcca cgagtgggcc actgcattcc agcctgggca
157851 acagagtgag attctgtctc gaaaaaaaaa agtgttaagc ttgagatagg
157901 aaagtaaatg ttaagatctg tatcaagagg agatataatc agagggacag
157951 aaaaaagctc ccaaaagaat taaaatatgt gcatatgtgt gttaagggct
158001 ggaagagaga tggtttaaag gcttcaaact cagtatgctt aaaactaata
158051 tacttgttcc cttcctaaca ccctcaccaa aaagatcccc cacatctcct
158101 ctcctgtcaa tactcctaat gttaggaaac tgtacaacca tccaaatagt
158151 ttcaagagac caatcctgga agactatccc tgtctactca ctttcaatcc
158201 tctgaaatca aacaagtcaa ccagaacagg attcaaacct cccagctcca
158251 cggccactat ctaagagtaa gccaccatca tctaatctgg actactaaaa
158301 tagcctaact agtctccttc catgcactga atcaattttc cacaatgcag
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158401 taaaatgtgt caatgatttt tttcatctct tggcatcccc tgccccacac
158451 aaaaaatgtc atcagaatag ccaaacttaa actccacaga caaaacctac
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158601 aacacagtga gacctgtctc tacaaaaaaa ttaaaaatta gccaggtgtg
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158701 ggcttcagcc caggaggtca aggctgcagt gagccatgat cataccacta
158751 cactccagcc tgggtgatag agaccctgtc cccaaaacaa gcaaacaaac
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158901 gaagaaaatg gaagggcaga agttatgggg cgattgaaga ccctgagaac
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159051 tatgatggag ctagacacaa aatcaaagaa ctaaaatcct cttcctggac
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159151 cacccccctta aaaaaaaaat catcttgtaa caaacaacag aagaaaaaga
159201 tcttgagtgg tgaaactaga aaggctactc tgacccactt cttgctctta
159251 aaagttcagg aaaatctatc aaaaaatgga caggaaagga ttggcgttga
159301 agcccatgct gtaagaaatg agagaatagg aaacagagtg ttgctattga
159351 aagcctactg aaaagacata tacacaaaag tgataaaaac tatcctagaa

FIG. 7 CONT'D

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159401 aatgatagaa aatgtgaaat aacattatca atcagaatta gaaaaactca
159451 gaaatgaggt cctagcaatc aaaaaagaat tagaaataaa gcaaaaaatt
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159751 caaaaattag ccgggcatgg tggcgggcgc ctgtagtccc agctactcgg
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159851 agccgagatt gcgccattgc actccagcct gggtgacaga gcgagactct
159901 gtctcaaaaa aaaaaaaaaa aaaaaaaaaa aagaaaatta tcagaaggaa
159951 gtgacaataa aggcacttag attttaaatt catataataa agactcctca
160001 aataagaaaa ccgaagcaat gaaatagagc aaatacttaa aactataaat
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160351 tagagaatgg tcaccacaca accaaaataa ctggagagac actgataaaa
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160451 tccttataag gtaggcccaa tccctgggcc gtgaactggt gccagtccat
160501 atagcctgtt aggagccagg ctgcacagca gcaggaggtg agcattatgg
160551 cctcagctcc atttcctgtc agatcacggt tggcattaga ttctcataga
160601 aacacaaacc ttgttgtgaa ctgagcacgt gagggatcta ggttgtgtgc
160651 tccttatgag aatctaacta atgcctgatg atctgtggtg caacagtttc
160701 aacccgaaac catcctcccc gacccgccat tcatggaaaa actgtcttcc
160751 acaaaactgg cccctggtgc cataaaggtt ggggaccact gttataaggg
160801 aaaaaataca gtatttaact gctacatgcc ctgacaatgt agacacaaaa
160851 ttgaaaggaa gacaaaacat gcatatgaaa tactgagtaa gtgggccagg
160901 tgcagtggct ctcgcctgta atcccagcaa tttgggaaac tgaggcgggt
160951 ggagcatttg aggccaggag ttcaagacca gcttggccaa cagggtgaag
161001 cctcatctct actaaaaata caaaaaatag ccgggtgtgg tggttgcacc
161051 tgtaatccaa tcccagctat tcccggaggc tgaggcagag aattgcttga
161101 acctgggagg tggaggctgc aatgaactga gatcacgtca ctgcactcca
161151 gcctgggtga cagaacaaga ctccatctca agaagaataa aaacaaaaaa
161201 acaactaagt gtattgattg ccttattaac tattaactgg tgagaaaagg
161251 aaattgcatc acatcagatg ctgaagtaga gcagaaaaga ggttaaagca
161301 gtgctgagag agaaatttaa agcacctaat gcaaacatta agaaagagag
161351 aaagtctcaa accaataatc aaaactccca gcttcgacac cctacaacat
161401 aaaaagcaaa acaaacccaa aacaagcaga aggaataaac agaaatcaat
161451 gaaattgaaa acaaaaagta gagaaaatta atgaaaagct agttctttca
161501 aaaaaaaaaa aaaatcagca gactggccaa aaaaaaagag aaaatgcaga
161551 gttataatat tagaaatgaa aaaggtacta tcactacaga ctttgcagac
161601 atcaaaagaa caagggaaaa ctacaaacaa ctctacacac acaaatttga
161651 caatttagat gaaatggacc aatgactcaa aaagcaagaa ctatcacacc
161701 tcactcaata tgaaatacct aatttgaata acgctgttaa ctattaagat
161751 gattatattt gtaattttaa aacttccctt cagggtttgg atggtttaac
161801 tagagaattc ttccaaatgc ctaaagaaga actaacacca attttatata
161851 atctctacaa aaaacagatg ggtacacttc tcaattcact ttatgaagct
161901 aattacaaaa ttacctgaat aacaaaacca gaaaagacag cattaaaaaa
161951 aaaagaagaa aaagaaactg caggccaata ttctcaatga ctgcagatac
162001 aaaaatcctt atcaaaatgt taccaactag aagtcactat actagcaggc
162051 ttcattctag tgatacaagg ctggttctgt atttgaaaat caatcaatat
162101 aaaccatact aatagactaa tgaagacaaa tcaatgatta tattattcaa
162151 tgcagaaaaa aatgacaaaa ttcaacatcc atttatagta aaaacactca
162201 gaaaaataaa agcctagagt taacattcta gtggtgaaaa gtctgaatac
162251 tatgtttccc tagattgaga acaagaaaat ggtgtccact ctcaccacta
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FIG. 7 CONT'D

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162301 ttattcaaca tagtataaga agttccagcc agtaaaataa ggcaagaaaa
162351 taaagtaaaa ggcatataga tgcaaaagaa agaaaataat cccagccagg
162401 tgctgtggct cactcctgta atcccagcac tttgggagac tgaggagggc
162451 ggatcacgag gtcaagagat caagaccatc tggtcaacat agtgaaaccc
162501 catctcaact aaaaacacaa ttagctgggc gtggtggtgc acacctgtag
162551 tcccagctac tcgggaggct gaggcagagg aatcgcttga acccaggagg
162601 cggaggttgc agtgagccga gatcgtgcca ctgcactcca gcctggcgac
162651 agagggagac tccatctcaa aataaaaaat aaaataaaga aaacaatcaa
162701 ttatttgcag aaaagatgat ttaaaaattc caaggaatat accaaaaact
162751 ttccagatct attaagtgag ttcaacaatg tcacagaata caacataaaa
162801 atcaattata tttctatata ctagcaatga acacatagac actgaaatta
162851 aaaatacaaa caacagccgg gtgtggtggc tcacatctgt aatcccagca
162901 cttcgggagg ccgaggcagg tggattgctt gagccaagga atttgagatt
162951 agcctgggca aaatggcaaa acctcatctc tacaaaaaaa agcaaaaaaa
163001 aatttagctg ggcatcgtgg tatatgcctg tagtctcagc tactggggag
163051 ggtgaggtag caggatctct tgagctcggg agacggaggc tgcagtaagt
163101 ggagactgtg ccactgcact ccagccacag cgacagagat agaccctgcc
163151 tcaaaacaaa caaacaatgc tggatgatgg ctcaagtaat cccagtgctt
163201 tgggaggcca aggagggagg actgcttgag cccaggaggt caagaccata
163251 catagcgaga ctcagcttct acagaaaatt taaaaattag ccaggtatgg
163301 aggcaagtgt ttattgtcct agttacttgg gaggctgagg caggaggacc
163351 gcttgtgtcc aggagttcaa ggctgcagtg aactatgatt acaccactgc
163401 actccagcct cagtgacaga gcaagatcct gtttctagct taaaaaagag
163451 aaaaaatgga ggggcatatt gtgttcatag attggtagac tcaacttggt
163501 aaagatgttg attctcctca tactgatata caggtttaat gcaattccta
163551 tcaaaatccc agcaatatat tttgcagata cagaattatt ctaaaattta
163601 tacggaaagg caaagtaagt agaatagtta aaacaattct gaaaatgaaa
163651 aacgaagtgg aaggaatcaa tctagccaat ttcaagatat attacatagt
163701 tacagtaata aacattgtgt gatatcagtg gaagaatata cacattgaaa
163751 agaacagaga acccaatata agcctacaca aatatatcca actgattttt
163801 tacaaaggtg caaaagcaat taaatggagg acatcaatag acttttcagc
163851 aaacagtgct ggaccagata gatattgaca gacaaaaata ttaaccctga
163901 cttaagcctc acaccttaaa aaaaatttaa ttcaaaataa atgtgaaact
163951 ataaactttt aggaaaaacc acaggagata attctttggg atctggggct
164001 aggcaaagag ttcttaaact tgaccgtaaa aagcatgatc cataacagaa
164051 atagttggta aactagacct catcaaaata aaaaactatt ttgctctttg
164101 aacacccatg taaagaagat aaaaagagaa gctagagact aaaaaaaaaa
164151 aatttgcaac cacatatcca agaaaggact agtatctaga attaaaaaac
164201 aaaaacaaaa aacctctcaa agctcaacag gtaaccaacc aaccaatgga
164251 actagaaaat gggcaaaaga aatgaaaaaa tatttcatgg aagaggatat
164301 acacatggca aataagcaca tgaaaagatg ttcaatacta ttagccatta
164351 gggaaatgca aattaaaacc accatgaaat cttattatac atctaaaatt
164401 taaaattgtg atactttcaa atgctggtga gtatggagag ttttcataca
164451 ttgcttgtgg gaatgtaaaa tgacagcacc tttggccatt tcttaaagta
164501 cacatgtaac aaccacagga cccagcaact acacattgga catttatatg
164551 agataaatga aaactcatct acacacacac acacacacac aacctgtacg
164601 caaatgttta caacagcttt attcttaata gctacaacct ggaaacaacc
164651 caggtatcct tcacgcttaa actgtggtac atccatacca tggaacacca
164701 tatagcaatt aaaagaaaca aactgctgat acaaacaatg acttggatga
164751 acataaatac tgtacgagca tcttgcaaga tgttaccact ggggaaactg
164801 gagaaaggat aaacaggatc tctgtgttat attttacaac tgcatgtcaa
164851 tctacaatca cctcaaaata aaggtcagtt tttaataaaa attttaaagg
164901 atatacatca gatgctgagg gggaaggaaa agagaaggtc acaactaatt
164951 tcaataatgt acatgatggg gaatcaatag aaaataacta agaaagagag
165001 gactaaagaa aacaaaaaca aaaccacaaa ctagaggcca aaagtatact
165051 aaaacaaaaa ataaaacaga tcacatacaa tgattatttt acacataaat
165101 atataggtga tgacaaggaa actaggactt gactttaaaa ccatgaaaat
165151 aaactgcgta tgaatatgac aaaatcaaat ttaacaagaa aagcaatccc
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FIG. 7 CONT'D

165201 taaaaataaa gaaatgaacc taaacgtgta tccatttggt agcataatca
165251 cactatcctg tgtaactttt caacacagca atttaaccct gcatctccag
165301 ttaaccctaa agagaactac caggaaaact ccaaactgtt ctcggtaacc
165351 ctattactgg gtgcagcgct gctggtgttg ttattctgag actgttatgt
165401 gtctatgtgg aataaagcaa atgagtaaaa atgtcatatt ctattattcc
165451 tggtgtcaga aaaaaacagg aagtttggcc taggagaaag acggatatat
165501 gatagaagtt gtttagtaaa atcccatagt cctgaatttg aattggaata
165551 tcaatatatg cattatatgt gtgtgtttat gtgtgtatgt atgtatataa
165601 atatgcatat aaatatgtat acatataaat atacacacac acatatgttt
165651 atatacatac acacacacac aaaattttgt tttaatccta tatctatcca
165701 ccccaagatg tctacttgga gatgtgtatc tccaacgcct agaaacagtg
165751 accaaatcag tgagtgcata gacaatactc tcaaaaatac caccaatagc
165801 aaacagaact ggttcattcc aactaatggg cagaaaaggt acaaggtaag
165851 cctgcaatat cttaacatac caaatatcaa agatatttac gagactagag
165901 tcttgtaaaa actactcaag agctaacatg aagaggctcc aaatgttcaa
165951 agacaataca attattatca attatcaata agacaatgaa ttcaaacaca
166001 catagatttc aatctgtaaa tccaggaaat ggaaataaaa acccaaacaa
166051 ctaaattgtc atcactgaag gatgataatg aactacctca ttattttgaa
166101 aactgataaa ggaaaagaat caagcattta ttttactgtt tctaaacaaa
166151 ttttatcatg gggtaatcta accaattaat aaatgagagg aaggtttctc
166201 ttaatagatg tagtctagct cagctgttcc caaacttttt ggcaccaggg
166251 actagtttca cagaagacaa tttttccatg gactaggaag tagaaggagt
166301 ggtttcagga tgattcaagt gcatgacatt tattgtgcac tttatttcca
166351 ttattattat attgtaatat gaaataatta cacaactcac cataatgtag
166401 aatcaatggg aggcctgagc ttgttttcct gcaactagag gtcccatctg
166451 gggatgatgg gagatggtga cagatcatca ggcattagat tctcataagg
166501 aacatgcacc tagatcactc gcatgcacag ttcacagcag ggtttgtgct
166551 cctttgagaa tcaaatgcag ctgctgatct gacaggaagt ggagctcggg
166601 tggtaataca agcaatgagg agcagctgta aatacagatg aagcttcact
166651 tgcttgcctg ctgcctacct cctactgtgc agcccagttc ctaatgggcc
166701 acggactggt agtggtccag ggttggggat ccctggtcta gcttaaagaa
166751 ggagtgatag attatcacca ttttacaaat cctagtaaat aacagactta
166801 gacaatgttc ctcagtggtg atgtcaacat aacagaaaga gacagccaga
166851 cactacgtgc ctttctgatg gaagagaaaa ccatcacata tgatgcagtc
166901 atgttcccaa ttcccccaaa tcatctgaat ctgataaagc ctccagcttc
166951 aactttgaat ttacaggaaa tacagagggc caatacacat gtcaagtgac
167001 atgataagat gtaaaatcca gccgggcacg gtggctcatg cctgtaaacc
167051 cagcaatcca agaagactgc ttgagctcag gagttcaaga ccagcctggg
167101 caacatgatg aaatcccatc tctaccaaaa atacaaaaaa caactcagcc
167151 aggaatggtg gtacatgcct gtgattccaa ctacccagga gactgaggtg
167201 ggaggactgc ttgagcccag gaggcagagg ttgcagtgag ccaagatcac
167251 accactgcac tccagcctgg gtgacagagt gagatcccat ctcaaaaaaa
167301 aaaaaaaaaa agcaaaattc agattatgag aacctccatg aacccagttt
167351 ctccaacaat aaagtgcata aaaaagacaa agatggtgag attaagagac
167401 cataaattaa aaaggagact ttgagttcac atcaatcaat caatcgcaat
167451 gtgtggacct tgtaatagtt gattccaggt gtcaacctga ctggattaag
167501 ggatacccag atagctggtg aaagcattaa ttatcctcag tggttcagac
167551 agcactgagc tcgtccctct tctgctgaaa ggaaaacccg ggcggtcagg
167601 catttgatta gaatgactgg gctgtcccag tgcctgtgag ggtatttcct
167651 gaagagactg gcatttgagt tagtagactg ataggggaag tttcactctc
167701 aatgtgggtg ggcagcattc aataagctgg ggcccagatg gaacaaaaag
167751 aggaggcaag agtaattctt gctgtcagaa ctccagattc tatggtcttc
167801 ggattccagg acttgcacca gcactgctgc cctttccccc catgatcacg
167851 ttggcaagtg tgataatggt atcgtgtttt taaaaagaat tcctatattt
167901 taaataacat acatattctt aataacaaaa aagtaggaca aaaacagtat
167951 atgttacttc tgaaagacgt catactttgg gaggtcacct gttctacaac
168001 aactggatcc tggctattaa cagaaaaaaa tatttttaa tgcagtgctg
168051 atgtcatata agtagtagag aagagggtcc ctctccctct ccctctcccc

FIG. 7 CONT'D

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168101 acggtctccc tctccctctc cccacagtct ccctctccct ctccccacgg
 168151 tctccctcta atggcgagcc gaagctggac tgtactgctg ccatctcggc
 168201 tcactgcaac ctccctgcct gattctcccg cctcagcctg ccgagtgcct
 168251 gcgattgcag gcgcacaccg ccacgcctga ctggttttcg tatttttttg
 168301 gtggagacgg ggtttcgctg tgttggccgg gctggtctcc agctcctaac
 168351 cgcgagtgat ctgccagcct cggcctcccg aggtgccagg attgcagacg
 168401 gagtctcgtt cactcagtgc tcaatgttgc ccaggctgga gtgcagtggc
 168451 atgatctcgg ctagctacaa cctccacctc ccagccgcct gccttggcct
 168501 cccaaagtgc cgagattgca gcctctgccc agccgccacc ccgtctggga
 168551 agtgaggagc gtctctgcct ggccgcccat cgtctgggat gtgaggagcc
 168601 cctctgcccg gctgcccagt ctgggaagtg aggagcgcct cttcccggct
 168651 gccatcccgt ctaggaagcg aggagcatct ctgcccggcc gcccatcgtc
 168701 tgagatgtgg ggagcgcctc tgcccagacg ccccgtctgg gatgtgagga
 168751 gcgcctctgc ccagccacga ctccgtctgt gaggtgagga gcgtctctgc
 168801 ccagccaccc cgtctgagaa gtgaggagcc cctccacccg gcagccgccc
 168851 catctgagaa gtgaggagcc cctccgccca gcagccgccc cgtctgtgaa
 168901 gtgaggagcc cctccgcccg gcagccgccc cgtctgggaa gtcaggagca
 168951 tctccgcccg gcagacgccc catccgggag ggaggtgggg ggcagccccc
 169001 gcccggccag cctccccgtc cgggagggag gtgggggggca gcccccgccc
 169051 ggccagccgc ctcgtccggg agggaggtgg agggcagccc ccgcccggcc
 169101 agccgccccg tcgcggaggg aggaggggggg gcgcctccgc ccggccatcg
 169151 ccccgtccgg gaggtggggg gtgcctctgc ccagccgccc ctgctgggaa
 169201 gtgaggagcc cctctgcccg gccaccactc cgtctgggaa gtgtacccaa
 169251 cagctcatcg agaacgggcc atgatgatga tggcggtttt gtggaataga
 169301 aaaggggggaa atgtggggaa aagatagaga aatcagattg ttgctgtgtc
 169351 tgtgtagaaa gaagtagaca taggagactc catttttgtt ctgtactaag
 169401 aaagattctt ctgccttggg atgctgttga tctatgacct tgcccccaac
 169451 cctgtgctct ctgaaacatg tgctgtgtcc actcagggtt aaatggatta
 169501 agggcggtgc aagatgtgct ttgttaaaca gatgcttgaa ggctgcatgc
 169551 tcgttaagag tcatcaccac tccctaatct caagtaccca gggacacaaa
 169601 cactgcggta ggccgcaggg tcctctgcct aggaaaacca gagacctttg
 169651 ttcacttgtt tatctgctga ccttccctcc actattgtcc tatgaccctg
 169701 ccaaatcccc ctctgcgaga aacacccaag aatgatcaat aaaaaaaata
 169751 aaattaaatt aaaaaaataa ataaataaag tttacaccaa ggctggctta
 169801 aaaaacaaaa aaagaagagg agaggtcggt caagttgaac ctaagaggga
 169851 agtcataaaa agtaattaag tgaaatgaaa actatgaagg tagctgccta
 169901 tttcatactg ggaacaaatt aagtcctgac ccctgatgcc aggttggaga
 169951 gttaaaccta aattaacact taggttatac aacataaaat aactacagca
 170001 aatatttcag gaacagaaaa atggaagtaa aatatatcag caagccagaa
 170051 gaaatgatca gaaatgacca gatctgaaaa atgaaaagaa ccaaacagaa
 170101 ctctgagata tgaaaaaata attattaagt tagacacata accaaaatta
 170151 agaactgaac agatgggttt tacagcaaat ttaaagtagt ttaagagatt
 170201 ctgtgaactt taagacaggt cagaagaaac cgtcaattat gaaataaaag
 170251 agggccaaag atgacaaata tagaaaagag ggtaagaaac ataaaggata
 170301 caataaaaaa tacaaaacag tgtttgtttg ggttcctctg gacagaagca
 170351 actgttagga gataatagct aagaattttc cagaattgat aaaaaacaat
 170401 aaaccacaga ttcaagacac ccaacaaact ccaagtggga aaataaaaag
 170451 atttcttttc ccaggaggaa aatatcctag aaggagccag agaaaaacag
 170501 attatcttca aaaagcaaca gactaaaaac tggccaggtg cagtgcctca
 170551 cacctgtaat cccagcactt tggaggccta ggtgggcaga tcatctgagg
 170601 tcaggagttc aagaccagcc tggccaactt ggtgaaaccc catctactaa
 170651 aactacaaaa attagctggg tgaggtggtg ggcaccagca atcccagcac
 170701 tttgggaggc tgaggtggga ggagtgtttc agcccaggag ttcaagaaca
 170751 ggctgggcaa cataatgaga catctctaca aaaagatttt taaaaattag
 170801 ctgggtgtgg tgctgtgcac ctggagtctc agctattcgg gagactgaga
 170851 tggaaggatc gcctgagccc aagaggttga ggctgtggtg agctgtgatt
 170901 gtcccactgc actccagcct gggtaacaga gagagaccct gtctcaaaaa
 170951 aaaaaaaaaa aaaaaagagt cagtttgtca gtttttagtc tgttgggttt
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FIG. 7 CONT'D

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171001 gttttgtttt gttttgtttt gtttttttga gacagaatct cgctctgttt
171051 ttgtttcctt cttatatagt cctcatactt catcaactct aactcttgta
171101 cttctatcct gttgccctgg tgaaaagtta actctgggtt gtttcaattc
171151 tcactccaaa agctgagttg ctaagtgtgc aacagaaaaa ataaattact
171201 caacctccat tataggtata acaaattcta ggtctctaac ctcaattaag
171251 ctctcaatgc ttactgtctg gaaatctttc caggctttcc tagttagatt
171301 ttgcacaaaa agctactgct caagcccccc tccaaatcgt ccttcctctc
171351 agcagaagac caggcctcat atttattgag aaaacagaaa ctatcagata
171401 gtagcaactc cctcaacttc ctaacgtgca cgtccaaatc tcctccccaa
171451 tcccaagatc cctgtctcct ttcatcctat cacaatgaca gtgcaagagg
171501 tggctagctg tgcactgaat ctaattattc tctcatcaac tgtccccttg
171551 cttcatcaat tatccatctc ctctctccca tctttcaagt attctatttc
171601 ccatatcatg agcatgacca tgtctttcac ttaaaaaaaa aaaaaagaac
171651 ctttctcaat ctacattttc ttttaactag ttcctgttct cttttgccaa
171701 aatttttgaa aaagtagtct agactgtctt cacttctact tatttagtcc
171751 actccatcca aaattccatt ggctctgctc ttgccaacat tatcagcaac
171801 cttctattca tggaacacaa tccttaatta catggtacct ttgcgggaga
171851 acacttcatt cattctcatc tccttgactt ccataacacc acattcctgg
171901 ttttcctcct ctttggtctt cctccttcat ccatccatgt tgctcttccc
171951 aaggttttgc ctattcatct agttactcta caaacccttt ctaggttatc
172001 atatatatct ccatggcttc aattatcaat taagtattaa taactctgga
172051 taatccagat ttgtttcctg atgaattctg aattgggcag taatatgtaa
172101 cttttcaatg ttataaatag aatacatgta agggaaaatc tagttaatct
172151 ttaaatacag aaaaatattt gtatctggca tctaaaacgt actatttatt
172201 attttgctca cctgtatata ttctaggtta tgattaatca atacagcaat
172251 gtggaaccat taccttttt gtcataacag ctttgagata taattcactt
172301 accaacaatt cacctaaagt atacatacaa ttcaatggtt tttagtgtat
172351 ttcactgagt tataaaacta ttaacacaat caattttatc atattttctg
172401 agaggaggtc tcactatatt gcccaagctg gtctcaaact cctgggctca
172451 agtgatcctc ccatctatgc ctcccaaagt gctgggttac aggcatgagc
172501 caccgcgcct ggcctatatt ttcatcacta cataaagaaa ccttttatcc
172551 tttagcagac acttaccatt ctaccaagct ccccatctca gtcttacaaa
172601 accatttatc tacttttttgt ctctatagat ttgaaaatgc tgacataaaa
172651 tgtcagatgt cagacgtcaa tcacccctcc aattatagct ccctttagct
172701 agcatccttt aagtaaactg ctgtatttct aagtaaacag attttggtgt
172751 gttctgcaag tcccataacc ttgggaattt aagcagctta aaatttaag
172801 cccggatctc tctcctgaac taaagtatct cctggatcac tccctagaaa
172851 accccacatg ttccttaaga cattcaaaac tgagttcatc attttcctca
172901 ctggtcttac ttaatttact gttttcacct tatctgtaga taacagcact
172951 ctctaaaagt gggatattca actacctcaa aaagtagttc caagaattaa
173001 ataaaataaa cattaataaa agcagctcgt gtcacgaagc aggcagtcat
173051 caatgtttgt ttccctttc tgtctacagg ttgtaatctc catttccaat
173101 attaaatgcc attacttttc ctgtccattg aggttttaac atcaatgatt
173151 tatttttcat ttctagcaag tttatttttg tagtacttct taatgttttt
173201 aggtccttct taaaatgatt caatcatctt aaaaatattt attttacagt
173251 ctttctctga ttacctctat tgctgaattt cttaggagac ataagactga
173301 cgtttttggt gtctgtatta tctgtgatat atttcttcct gtgttttata
173351 attttggatt atgaacctgt tctcttcctg tgctagtgag accatccaaa
173401 atttgaaaca tttagcctct ctataagagt aactaaaaat caaataactt
173451 agaatctaaa tagcagaaat tatattaaat ttgctatttg aatggcatcc
173501 tctctggaag acaagcatta ttttgatcta aaaagtcttt tctagtatgt
173551 gaaattaaga ataaatcgga aacttcaaac ttccttctct atccagttcc
173601 actggtctgc cagttacaga ttaaaaaaat atagcagggg gtggagaagt
173651 ttattaataa acctaacatc aaaaattaaa gcttgtttta cccttccaaa
173701 aaagcctatt cctactccac tgcagacaga aaattccact gcgttaatat
173751 tacaagatat caactagaat ttttttaaaa aattaagaag ggagtgagat
173801 ttttcacttt acaaataact gaaatgggat tccttttttt ttttttttcc
173851 tcttcacaga ggtaatcaag ttaggatttt ttttttttt tttataattt
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FIG. 7 CONT'D

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173901 taagttctga ctgaaagtat aggtttagga ctaaacacag gacattatgt
173951 cctaagagtt taaaatttta gagcaatacc atgaaataat ttaatacaag
174001 aataatatca attaggcctg tgcagtggct cacgcctgta atcccagcat
174051 tttgggaggc cgaggtgggc ggatcacttg aggtcaggag ttcgagacca
174101 gcctggccaa catggtgaaa ccccgtctct actaaaaaca caaaaactag
174151 ccaggcgtgg tggcaggcgc ctgtagtcgc agctactcag gaggctgagg
174201 cagaattgct tgaacccagg aggtggaggt tgcagtgagc cgagatcacg
174251 ccactgcact ccagcctggc gacagagcca agactctgtc tcaataaaaa
174301 aaaaaaaaag aagaaaaaaa gaataatatc aattaaatta gaataaaaag
174351 aactattaca aattatattt tcattatctt gattgtggtg atggtttcat
174401 cagtgtatgt acgtgtgtga aagagtatca aattgtgtac agtttaaagc
174451 tgctttaaaa aatgtgactc aaattgcaaa aaaatctatt cctatgtacc
174501 ttcttaggta ttaaagccac aagagctaca caatggaaag accataagag
174551 tggctctgtc actaactagc tatgtgatcc tgaacctatt acttaacctc
174601 tctgaacccc agagtcccca cttaggaaac gaggatatca caatctatct
174651 ctgggacagt acagtgaaag taccttccat aacaagtcct tactgaacat
174701 ctacaaaata tgacttgttt actgtacaaa gtaaagtata cctatataaa
174751 gcattcatta aaacttgtgc tttattacta agttacaatg tgagtaccaa
174801 caacaaacct accttacata gtccaaaatg tacatatcac tattatattt
174851 tttcatcttt ctactttcaa actgtgtctt tgtatttaaa atgctgctac
174901 acaatcccag cactttggga ggccaaagca ggcatatcac aaggtctgga
174951 gtttgagatc agcctgccca acataatgaa accccgtctc tactaaaaat
175001 acaaaaaatt agccgggcgt ggtggcaggt gcctgtaatc ccagctactc
175051 aggagggtga ggcaggaaaa tcgcttgaac ctgggaggct gaagctgcag
175101 tgagccaaga tcgcgccact gcactccagc ctgggcaaca gtgcgagact
175151 ctgtctcaaa aaaaaaaaaa aaaaaagctg ctacatagaa gccaatatgc
175201 actgtagcca aaatgcacta catagtgcaa aatgtattta aaatggacag
175251 tatgcagttg ggtcttgctt cttaatccag tctgacaatc tctgcctttt
175301 aatcgggatg ctttagtcaa tttaaatgta tcataatgac tgatattgtt
175351 gaaatcaggc atttcattat ggtatttttg tttttgatca tctcgtttgt
175401 tttttatttc tcttcctgcc ggcctgtctt catttgggtt aatcaatttt
175451 ttttttttt ttttttttt tttttagcat tccattagat attcctctcc
175501 tggcatttag gttcatcttt taattttgag atttctcact agggatcaca
175551 actgtgactt taacttaaaa caatctattc agagttaatg ttctacctac
175601 taaatgtcaa gaacccaact tgtgtgccac acatacatgt actacacatg
175651 ccaccactgc atgcatagta tttaaaaact gccaagaatt tggacagatc
175701 ttatatgcga attttttgg actcactttc tttgtagctg cctctcttcc
175751 aggatttacc cactaagttt cttgctgttc tgttagccca gaactctgta
175801 tccttacatt tcatgcaaat aaggttgtgg tattcttcac caagtagcag
175851 gaggattaca gagcaccctc agacaaaaac ccaccaactc atgaatttca
175901 caagatagtt atgttttaag aataggctct cctccagttt gtctgctttt
175951 gatcactctc cagtaccttt aaagaaaaat taatgtattt tgtccagata
176001 ttatcattgt tatctatagg aaggtaactc tacagtattg caccattact
176051 agaagccaga atgccacgtt acttttacta cataaactcc attctgaaaa
176101 tgacttaact aggtaattta tgctactatt aggtgtattt ttccttttta
176151 ttttagtagc agctttattc agatataatg cccacgccat aaaatttatc
176201 ctaaaaggat aagttccgtg gtttctagta cagagttgta taaccatcac
176251 cactacctaa ttttagaaca ttctcatcac cacaaaaaga aatcacatac
176301 cctttagcat ttgttcccca tgctccttcc cacaacccct ggcaatcact
176351 aatctacttt ctgtatcaat ggatttgatt gcctggacat ttcatacaaa
176401 tggaatcata taatatgtgg actttcatgt ctggcttctt cacttagcat
176451 gtttttgaga ttcatccatg ctgtagcatg tataaatact ttactccttt
176501 ttattgctga ataatattct actgtatgga catacccat tttatctacc
176551 tattcttcca ttcaaggaca tttgggttgt ttccactttg gggatattat
176601 gataatgcta taacaagcat tcatgtacgt gtttttcatc ttttggacac
176651 atacctaaga ataaaattgc taggtgatat gggaactcta tgattaacat
176701 ctcgaactgc tattttctaa agttgctgca catcctacca gaagcgtatt
176751 agaattccaa tttctactta tccttcccaa tgctattatt tgtttgattt
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FIG. 7 CONT'D

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176801 tagccatttt agtgtacgtg aaatgatatc tcttgctttt gatttgcact
176851 tccctaatga ctaataacat taagcatctt ttcatgtgtt tgttggtcat
176901 ttgtatgcct ccttcaggga actgtccaag tccttgcccc tttttaaact
176951 agactgtctt tgtattgttc agctgtagtt ctttacaaat tctggatgtt
177001 aagtagtacc tttaatggat gtatgatgtg caatttttc ctcccatttg
177051 tgggctgctt ttttttttt ttttttttt tggagacagg gtctcactct
177101 gatgcccagg taggcatgat taccacttgc tgcagcctca acctcctggg
177151 caccagtgat cctcccacct cagcctccca agcagcttgg actacagatg
177201 tgcaccacca caccaggcaa atttttaaat tctttataaa gacgaggtct
177251 cactacactg tttaggctgg tctcgaaatc ctaggctcag gtgattctcc
177301 caccttggcc tcccaaagtg ctgggattac aggtgtgagc gagccactat
177351 gcctggccac ttttctactt ccttgatggc gtattttgaa gtacaaaata
177401 ttttaatttt gataaagtcc aatttaccta tatttcctct tgtcacttgt
177451 gcttttaagg tggtactatg aaaccagtgc caaggttaca aagatctaca
177501 cagatgtttt cttctgagaa gtttacacat tttagttttt acatgtatat
177551 ctttaatcaa ctttgagttg gtttttgcat actgtgtaag gctccagtat
177601 tctcttgtat gtggatagtc atttgttcca tttgttgaaa aaaaaaaact
177651 attccttcct tgtaatactg ttttgccacc cttgctgaaa atcaattgac
177701 ctacccacct accaaaaaaa aaaaaaaaaa agaaaagaaa aaacccccga
177751 aaatataact ggtaaatgtg aaagtttctt tctggactct caattctatt
177801 ccattggtcc atatgtctat ccttatgcca gtatcacaca gtcttaatta
177851 ctataggttt gcttgttctg taaattctga aattgctaaa tataaatatg
177901 agtccttcaa cttagttctt atttttcaag ttttgctttg gttattcagg
177951 gtcctttgca attccataca aatttcagaa tcaacttgtt gatatttcaa
178001 aaaaaaaaaa aaaagaagag gaagagaaaa agaagccaaa agaaaagaat
178051 agaaaaaaag aaaaaaggca agtcagcttg gattttatgg gaaattgcat
178101 tgaatctctt agttcatttg gagattactg cagcttaaca ttaactcttc
178151 caatccatga acatgaaata tatttccatt tacttagatc tttctttcaa
178201 tgaagttgta gttttcagca tacaagtctt aaactttcag taaacaatga
178251 attcctgata aagaaaataa gtcttacact tttgctgaat ttattcctga
178301 gcattttatt ctttgtaatg ctgttgtaac aaaattgtta ttttgttttt
178351 taagacgggg tctcactctg tcacccccgc tggagtgcca gtggcgcaat
178401 caccattcac tgcagcctca acctctccag ctcaaggctc cctcctctgc
178451 acccaagtag ctgggactac aggcatatgc taccacaccc agctttttaa
178501 atttttgatt ttatttattt ttgagacagg gtctcactct gttgcttatt
178551 tagtctcacc caggctggag gctctactgc tcatcatagt aacacaatta
178601 cagttcactg tggtcttgac ttcccaagct caagtgatcc tcccacctta
178651 gcctctagag tagctgggac tacaggtaca caccatcaga cctagctaat
178701 tttggtattt tttttgtagt gacgggatct agccatgttg cccaggctgg
178751 tcttgaattc ctgggctcag gcaacccacc tgtctcagcc tcctaaattt
178801 tgggaagtat aggcatgtat aggccaccac acctggcctg ttttaatttt
178851 agattgccca ttgctggtat actaaaatac aattgatttt gtatactgat
178901 cttgtatcct gcaaccttgt tgaaatcatt tattagctct aatagttttt
178951 aagtgagttc tttagaattt tctatccaga agatcatatc atttgcaaat
179001 aaagagtttt aattcttatt ttccaacctg gttatctttc atcttgtttt
179051 cttgcctaat tgtgttggct agaaaatctg gtacaatact gaataggaag
179101 aacaacaatg aatacggttg tcttattcct gatcttaggg ggaaagcttt
179151 acatttacac cattaatatg acataagctg tggatttttc agatgctctt
179201 catcaagaga atgtgaagaa tgcaaaataa aaccataata agacatctct
179251 acacacttgg taaaataatg aaaatttaaa agactggcaa aacaaagtat
179301 tggtgagcat gtggaacaat tagaattctc gcactgttgg tgaatgtaaa
179351 ataggacaac caccttggaa aagaatttca aagtttctaa atactgttgg
179401 gctgggcaca gtggctcaca cctgtaatcc catcactttg ggaggctgag
179451 gcaggtggat cacctgaggt caggagttcc agaccagcct ggccaacgtg
179501 gtgaaacccc atctctacta aaaataccaa aattagcagg gcatggtggc
179551 gcacgtctgt aatcccagct actcaggagg ctgaggcagg agaattgctt
179601 gaacccaaga ggcagaggct gcaatgagct gagatcatgc cattgcactt
179651 cagcctgggt gacaaaagca agactctgtc tcaaaataaa taaagacagt
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FIG. 7 CONT'D

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179701 taaatacaca cttatatgac ccagccactc tgttcctagg tattgataca
179751 acagagaaac acatagactt gtactgatcc aaaagacata cacatagctt
179801 tataaacaaa tattcatagc agtcttactt acaattgcca aaaactagta
179851 acaactcaaa tggccaacgg taggtaaatg gcctactgtt gtggtatatt
179901 catataatga atatgagtca gcaattaaga agaatgaact ttaggtacac
179951 aaaatattaa tgttaatatt aagttttaaa aaaatcagac acaaaaggag
180001 tatgtattgt catcacattt aaacgaaatt ctggaaaagg caagctgatc
180051 aatgaaagaa agcagattaa tatttgccta agggttaggg acaggaaggg
180101 gttactgcaa agggatatgg aggaactttt gggaagacag aaatatttac
180151 attttgattg caatggtggt tacaaggagg taatcatttg tcaaaactca
180201 tcaagctaaa tactgatgtg tattacttct gtaatttttt aatgttaatt
180251 attctgagaa gtacttaaat tatttgaagt cctttctaaa ttaatctgcc
180301 tcaaagattt tttcgatgat ataattacca atgtcctaat tttttatcct
180351 attaatacca tattatgcac ttggatctgt gttgcttatc aacacttggg
180401 gcggctgata aatattccct gtaattaaaa aaaattgtaa gcagtcaaaa
180451 actaataaac cttcaagagt gttataaata aataaaattt acaataacat
180501 ttacatgaca cctattttaa tgttttgtcc attttatgtt ccaatgataa
180551 ttaggactaa gtggtgagca gttcatgtaa aaatgacttt acagtagtta
180601 taaaaccaaa ctcacactgc tgaagtctac taggcagaag aactgaacaa
180651 gagcaggaag gtgttatata ttttctgaag gtccctaaaa caactctagg
180701 caccagataa ctcctacctc accaaaagaa aaaagaaagg aagaagtaac
180751 catattctga aagtctatag caccaatact atcccattca tagtcatctt
180801 tttgagacag ctcttgctct gtcacccagt ctggaatgca gtagtgtgat
180851 catggctcgc tgcagcctca acctcccagg ctcaggtgat cctcccacct
180901 caacctccca agtagctggg accacaggtg tgtgccacta aacccaggct
180951 aatttttttt tttttaaggg atggggttct gccatattgc ccaggctagt
181001 ctcaaactcc tgcgctcaag tgatccccct gcctcagcct cccaaagtgc
181051 taggattaca ggtgtgaccc accacaccag gtcttagttc tttttcttga
181101 tacaagtcag cagagactcc aatttctcca cttcaataaa ttaatggatt
181151 ctttaaaaag agaaaaagat taattaaagc cacatgagcc acagccccaa
181201 caatctacag ttataccccg aattcaacac ctggcagcag tcataactag
181251 gggtctccta taacacctag gcctggatgt ccagctgcct ggtttcctct
181301 ggtttataaa ttcagaactt ttagatttct cttttgctca ttctcccttc
181351 tctgcctttt agacaagaga gctctggacc tcctctcaag gctatcttta
181401 ccctaagcag atctgcccaa catcccttcc tccctaatac ctgcactgct
181451 gtaaacacta tacagttctc tcagaaatag gtccaatatt tactatgtta
181501 ccaaaacaaa agaaaagcat agggagggat atgttggtta aattatattt
181551 aaagtttagc catgaccaca agcatatcat gtcctcacat aatgtcatca
181601 cattcacaaa tacaaaaact tagaatgaag gtgataaacc tggctatgcc
181651 ccctaactgc tgcatggagc tatgtctaac gttatcagaa gactcctgca
181701 ctggtaacta atacaactaa ttaggaatgt gttctcatta tgaaaatatt
181751 cggccaggca tggtggctca tgcctgtaat cccagcactt gggaggccaa
181801 ggcaggtgga ttacctgagg tcaacagttc aagactagcc tgaccaacct
181851 ggtgaaaccc tgcctctact aaaaatacaa aaatttgcca cttatggtgg
181901 cacacacctg taatcccagc tccttgggag gctgaggcag gagcatccct
181951 tgaactggga ggcggaggtt gcagtgagcg gagatcatgc cattgcactc
182001 cagagtgagt gcactcagac gacagagtga gactctgtct caaaaaaaaa
182051 aaaaaaaaaa aaaaagaaaa aagaaaaaag aatatattct agctattttt
182101 gacaaacact aagcaatata ctaaagaatt tattaccagg agagaaatat
182151 ttagtaagtt aaaatagtgc ttcccaacca ctttcatatc atggcatgca
182201 cagaaaatat ttatacagca tactgagata aaaggacaag gctacatagg
182251 ctccaccacc caaatccccg ggtggccacc cctagggcag cacaccacat
182301 gggaaacact gaccaaacag gctctcatgc taataccctg ggtcactgtg
182351 acaaactagg gagaagttca tccatatggc tgtacactgt cacaaacaaa
182401 ccagctttaa aaaatatttg tttctgcttt tctaacttat acatcttcat
182451 caaaccatga aacattcaag gcccagttca tccccaccaa gaagccctcg
182501 caaatctcta aggctgtaat tcacacctat cttttctctg tgttcccaaa
182551 cttcctttac tcttactaaa ctatcctgtt ctgttttata gttgccttta
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FIG. 7 CONT'D

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182601 gctattattt accttattaa atatgtccct tgaatagaag gatcttgttt
182651 cattcatttt tatttccttc ttgctccaca atattgaaaa aagagtttgt
182701 acaacctgtt tgttcaatcg gacttggggt gggtcatatt cagtgacaat
182751 gctttttgta ctacaatagc ccatgtactt tctccctctg tattccgaaa
182801 ttggatttat ttagttccaa gcctctcaaa tatcccaaat tttccagttt
182851 caagagttca acaggataca caaaaatgtt tgtttgcact agccccacat
182901 ccacaaaatt tagaaaacaa aagcaaatat ccagccccta tcgaactttt
182951 ttatttttta tttttgtatt gttagtagag acaagagttt cgccatgttg
183001 accaggctgg tctcgaactc ctggcctcaa gagatccacc cacctcagcc
183051 tcccaaagtg ctgggattat atgcatgagc taccacgcca ggctgtaccc
183101 ctacagaact ttaacatcca agtatcaatt ctttcttcca agcaaaaaca
183151 aggtttccag aactcaacag ataactgaaa accacactgt tgttaccagc
183201 catagtccct gacagtaact ttaaattgcc caagagcagt gaggaagcat
183251 tttaaattat tttcacatct attgaaggat tccagccaag agaatttatt
183301 cttattatac aggagtaaat acgcatttta tcattaaata gtatgataat
183351 cctaactagg aattatcagc ttataaattt tctctgtaat atctgtgaat
183401 ctatctgaat gctaagattt tatttagaat cacaattttt attttcatct
183451 tccccttccc tttaaaaaat agttaatttt taactactag taagtagaat
183501 aaatagaaaa ataactataa gtgaatactt aatatgaatt agtacacaaa
183551 ttaagttata caaggatcat tcccaaaata tttattgaaa aatgcttcta
183601 tccatttctg atgtttttct gacccttgtt taaaatacca gatgctgaag
183651 ttaactaaaa tttatttatg cataatctaa aaagacaaaa aaagcacctc
183701 aataagcatt cccaagtata tattatttca aaaccaagat acatatagtc
183751 atggaagtag tttcaaattt acagtcagtt caaatttata aaaagatact
183801 aactgtatag tccattgctc tctgctagct gaggttaaca ctgtataaaa
183851 gctggtttct actttttctc taccacccat atatgcatct ctacaatctg
183901 tagcccaata cttagccaac atgatcatcc ttctcagtct actgaattcc
183951 ttttttcctg ctgattcaaa tgttgaggaa tgcacatgca atatccaatc
184001 cctctaatta tttcaatgcc tgttcagcta ccttcctcca tactctattc
184051 agctttctac ctttcagtcc ctattattat cattttgcat aaagaaaaat
184101 aacaacagta tctgtcttaa caccctctgt aaacaccaca aagatatgct
184151 gaagagttgg atctgtaccc cttttgtgtt tctgaaacag gaaatgcaaa
184201 gaaagtatac aggttccagg acctcctaat accaaaatcc aaggatgcat
184251 aagtcccttt atataaaatg gcatagtatt tgcatataac ctatgcactc
184301 ctcccacata ttttaaaatc atctctagat tacttataat acctaatatt
184351 atataaatgc cacataaaca gttgttacac tatttatttt tttctttatt
184401 tgagacaggg tctcactctg tcacgtgggc tggagtgcag tagtgcagtg
184451 cttggtgaag ccttgacctc ctcaggtcaa acaatccttg tgcctcagcc
184501 tcccaaggag cttggactac aggcacacga caatgcaccc agatgatttt
184551 ttttttttt tgtatttttt gtagaggtag ggtctcactt tgttgcccag
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184651 aagtgctgag attacgggca tgagccacat gcctggcccg tattattttt
184701 tagtaaaatc actttccaaa atactgcaat atgaggaaac ctttattcca
184751 aaaagtctac tcataataac ttataaacat ctttggaagt taaaaattaa
184801 ccacatcaac ctgcttagcc cacataaccc acattaaccc acatcaacct
184851 gcttagccca cataatccac attaacccat attgtggttt atgttttaaa
184901 aggagaaaaa acactgaaac taccatatgt cttacctttt aggcatacat
184951 gttaaaattt tggcagatga aacataatac tgatagatga cgcttcaaaa
185001 taatgcaggg aagagtagaa gtgggtagag attgttaaat caagtttagt
185051 ctaaagcagt ctccttacat atttgaagtt cagtctaaag gtttctctgt
185101 acatagtgaa ctataaatgt atctaaatgg aggtgtaaac agactgtaac
185151 ctacttttgt gccaatcacc aagttttggc cagttaaaag gggccaactg
185201 ttcaaaccat gttcaaataa ggcaaatgcc gagctgtaac caatctgact
185251 gtttctgtac ctctgtctat acatcttctt ccaccacctg gctgtgctgg
185301 agtctctctg aacatactgt ggctcaggag gctgccctat tcacgaatca
185351 ttctttgctc agttgaactc tttaatttga ctaaggactt tcttttaaca
185401 agatataaat tacacaaacg accataaatt ataattgttt taaaatgcca
185451 catgggagtt caatatatta ttctctctac ttttacatat gtttgaaagt
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FIG. 7 CONT'D

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185501 tttataaaag agagcttttg ttttttttgtt gttgtttttt ctgagacagt
185551 acaatctcag ctcactgtgg cctccacctc atggactaaa gagatcctcc
185601 cacctcagcc tcccaagctg ggactacggt tgtgaaccac catgcttgcc
185651 tacttttaa attttgtgta gagatgaggt ctcactgtat tgcctaggct
185701 ggtcttgaac tcctagtctc aagcaatcct ccctcctctg tcttccaaag
185751 tgctgggatt acaggtgtga gccactgtgc ccagccagaa tttttgttaa
185801 gtgtgttatg ataaaacaca taattaaaaa caagtgattt ttgattttct
185851 gaaatcagaa aacctggtta ccaactagat gagtggacaa cattcattat
185901 ttttctacgc cttaaatttt cacatctgtg aaaaaggagt tggactcatt
185951 aaattccaac gttcctgcta gttccatttt tttttttaa caattcaact
186001 gaatgacttc cacactttga atttggttta acaattctaa ctaaaatcca
186051 gaatgcattc atagctaaat cttatataat taactgaaaa ttgttcatta
186101 ctgttaccaa aataacaatc tagtacagta cttacctcag ctgggccttc
186151 attcctatat aaatcctatt ttgcttaccc tgaaacacct ttccttcaag
186201 tattacctct tagacccttc attctctata gttaacgttg tcaaagaaaa
186251 tagaggccac taagtataat ttgttccagt ttccctaccc ctaatgcagc
186301 ccatcctcat ttctgcctgt acttcaagtc ctttccacct gaggctgctt
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186401 caacaactcc ctacttactc tatctaggct cagtcgtttg ttccttttct
186451 aaccaagtcc tcaggtctct tttgctctgg cttcttcagt ttagcctagt
186501 caacaccacc cttcttaaca aataaaaaac aaacgaacag ccttctttcc
186551 accctacgtc ttcctcaagc taacctgtga ttcctccttc ccatgactac
186601 caaatattta aatcaaagct ctaactagtc taaatagctc aactccaact
186651 cactccttag ctcatcatga tctagcttcc agcctccacc accctcagtt
186701 ttcccttctc actggccccc aaagagcaaa tacaatgaat ggcttattgt
186751 aaggtctcat catgcctctc ctctctgtag catttgatac tgcaattact
186801 gcccctcctt caggaaactc tcctccctaa gttcttatac accatttcc
186851 tgctaagctt cctacagact ccctcagtac cattttcacc tcttctccta
186901 atatgatttg gttcctcagg gttctttcct cccctgctcc tctttccttc
186951 ttatccctac aatccctcac ctatattatc atcttactct agccattgct
187001 tgagctatta atcttcacca ctggatacgc tagcctagaa gggcctgtga
187051 gcaaaatcta gacccccaac tgatttcata aataaagctt tattagaata
187101 caaccacact catttgtttg cctacagtct atggctgctt ttgcgctcaa
187151 gacacaggtg aatagctgca atacaagcag aatggccctc aaagccctaa
187201 tatttaggct tttaaaaaat attatggctc tttacaaaaa acttgccaac
187251 ctctattcta taaggtaaaa tatgccaaaa gattagtcct aataactttt
187301 tctgcttttc aatctcagtg ccaacactat agtcaggcca cccatctgag
187351 accttgaggg ttttctgtta ctcccaaact ccccatctga gaccttgagg
187401 gttttctgtt actcccaaac tctcttctca tcttcaccaa tccatcccct
187451 atggtataac caaagcaatg cttctaaatg cacaaatcta tttcactgtt
187501 taaaatgttc cccagcgaaa aggtttttca caatctggct cttgtctgtc
187551 ctacccaaat ttcaaattac tccacacctg aatattgaaa aatatttctt
187601 ttttttttt ttttttaag atggagtctc actccattgc ccaggctgga
187651 gtgcagtggt gcaatctcgg ctcactgcaa cctctgcctc ccaggttcaa
187701 gcgattctcc tgcctcagcc tctgaagcag ctgggactac aggtgcacgc
187751 caccacaccc ggctaattat tgtatttta gtagagacag cgtttcacca
187801 tgttggccag gctggtctca aactcctgac ctcaggtgat ccacctgcct
187851 caacctccca aagtgctggg attacaggtg taaggccacc gcgtccagcc
187901 agaaatactg ttactttagt tccccagaat ctatcacact atctcttact
187951 tccaggcttg cccaagattt accataaata cctacacatt tttctacttt
188001 cagctcaggc acaatcacct ccatgaagcc ttcagtgact tacccaggcc
188051 aactcaggtg attctttccc catgtgcccg ctccactagg tacacacttc
188101 cattacagga aatatttact tgctttcaca taatctgcct actagtctat
188151 acattccttg agcaggaacc ctgaggtaga gtaggaaaat ggctattaag
188201 ggcatggagt tttaaagttg gaaatctggg actcagtgcc agttctgccc
188251 cttcctaact gtatgttctt aacaaattaa gaagaaaatg aagaaatgaa
188301 gaactcattt tcttcctctg tataatgtaa actttgtgag gattatttaa
188351 ggttattctt ataaacacag tgccttacac atagttaagt gctcaacaat
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FIG. 7 CONT'D

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188401 tactggttat cattattttc attgttttat ccctcacact cagtaaagaa
188451 ttcgaatagc tgctgagtga cataactgaa gcaagctagt tctgcactgt
188501 tttcagctgc atactgaata ttttcatctg aacaacactt ggatcccgag
188551 aactcattat ttttatgccc aaactgtttc aattagagca atcaacttgt
188601 taaggtttgt ccaggacttt ctctgtttga acactgaaag tcctgtatac
188651 tgggaactac ctcagttcca ggcaaaccaa gacagttgat caccttagag
188701 ttatgttgca aacaacagca actgacttgg gtaaatttaa gaagaaataa
188751 agggaagagt gaatttattg gtagaatgta tagagtaatt cacaaaacca
188801 agacaaagct gaagaatcaa gcctacgaaa gcaactccca catatctagc
188851 cggcaggaat taacggatgg ttaccttcac agtacttctg tcaagatgaa
188901 tcaattaggt ctcagtatca gctcactcaa gatttaaatg ccagggacaa
188951 attagcctaa tttgtgttag ccagaaaaat gtgaggcaca ttaattaatc
189001 agaggcagga gcacctacat taaaaatccc accataagat agccaatggc
189051 agaaaagtag cttccaaagg ccaaatcaga aggttgtttc caaaagcagg
189101 gggaatggat acaatgcccc tcatatcagc tgcagcttaa acatgccaag
189151 cctttagact ccatgacaca gtcactgtta ttcatactat ttttctttct
189201 gagttggcaa actcatcctt caagacctac ctcaagtatg accttctgtg
189251 taaccttact aatttcccca ggtacaatca cacttttct atactcttat
189301 agtactttac aaattatcta cctgtatcat agaacttacc acactgtaca
189351 ctagccatat gcttaagtat cagtctctcc cactaaactg aacttcctta
189401 gatcagggaa tattttcata tttataatct ttggcaccta atgatgtcta
189451 catagcatgt agaaaatact aaataggctg cgcgcggtgg ctcatgcctg
189501 taatcccagc actttgggag gctgaggtag gtgaatcact tgagcctaag
189551 agtttgagac cagcttggac aacacggcga aaccctgtct ctacaaaaaa
189601 taaaaaaatt agctgggcgt ggtggcgtgc acctgtccag ctacttgaga
189651 ggatcactcg agcctgggaa gttaaggatg cagtgagccg tgattgtgcc
189701 actgtactcc agcctgggtg acagagcaag accctgtctc aaagaaaaaa
189751 aaaaagctaa ataaatgttt aataaatctg tttcccaagt cactagaata
189801 tgtaaagcat caaataaaaa gaaacatagg ggctaccaca agtaaatatg
189851 ctgacagtat caaaagaaag ctgatagacc aaaagcaagg gaaggacaag
189901 ccaaaaaaat taagaagagc aaaaactcca caagcgtaaa aatcaagaag
189951 aaaattctgt taatttaaca acctgaaggc atcacttatg taaaagcaaa
190001 acccaatatc catatgcata atggtgattc tcaagaacca agaaaacaac
190051 taaattatat tctatttaag gcaagtgtca aaataaagta aaatctagta
190101 tgtatacaac ctccctaacc cagaaaacca agaatgatta attccaagta
190151 aatatagtca tgatttattt taccatattt taactgctga tgttggctat
190201 gctgtaagaa aatttttctt aacagcaaaa ctgcaagaaa ggatagctac
190251 atcctcctta tacttttaat attccttcac ctccacttga aaatgagaat
190301 acagtcctcc ctctgtatcc tcgggggggt tggctccaga tgctccctcc
190351 cccgaagata ctaaaatctg cagatgctca aatctcttct ataaaatggc
190401 acagtacagt cagccctacg aatccacagg ttacaaaggg ccagctgtac
190451 agccaaaccg tatgctaact aaacaaaagg tcaactgagg agtggtgtca
190501 gtcatagaaa gaaaatccta ctgactctga agttagaagt tctagatata
190551 cactttgtaa ctcctttact ggataccaag aagttacttt tttttccact
190601 tcttgaaatg tcatcaattt catgtcccat ttcccccaaa taactaaaat
190651 tcacttcaca aactgttaag taactttcac attgatggca ttaaactatt
190701 tgttctttat cacctgaacc ctacgatcat tcttattatc attactgaga
190751 tatattctaa ggtacacact accaccaact gaagtttaaa taaattaata
190801 gaagcttaac ttgaagctaa tcaagacttt aaatcaaact tccagtttag
190851 actgggctca gtggctcatg gctataatcc cagcattttg ggagattgag
190901 gagggaggac tgcttgagga caggagttca agaccagcct gggcaacaca
190951 gcaagacccc atcgctacaa aaagtaaata agctggacat ggtagtgtgc
191001 acctgtagtc ctagctactc aagacgctga ggcaggagga tcgcttgagc
191051 catgatcgtg tcactgcact ccagcccagg taacagcaag attctgtctc
191101 aaaaataatg tttaaaaatt ttttttaaa aaaacttcca gattacaaaa
191151 aatctgaagg gtggtaaaaa aacaaataag aggaaccagt taagcaccac
191201 cagaaggaaa cagacaaacc cagtaattag gacagtctat taggctaaat
191251 atgaaattgc caatacttgg ctgttgttac aaacctggaa aaaagcaatt
```

FIG. 7 CONT'D

191301 tcatatagtg caatttaata aaagaaaact gacccgaaca aattagtggc
191351 atttttaaat ggttgggaga caacagacta aagttggaaa caatccaagt
191401 attcatctat agatgaatgg gtaaacaaaa tgtggtatat acatacaata
191451 gaatgttact tagccataca aattagcctt aatcactaat tcattcacta
191501 tgtatatacc ttaatctccc agaactttac ctgtcataat aaaaagcttg
191551 gagttgattt gggaagcagt aggaaaaggc actaaaagag taaacatttc
191601 agttcaaaaa tacacatggg aaaaattatt gtgtctgcgg tgcctacgat
191651 gtatttattc aaggaatatt ttagtgcttg cttggttcta gccactgtac
191701 taagtggtag gcaatgaaga tacatagtct gtgccctcaa aaagctcaca
191751 atctagtagg aaaaataaaa tctaattaaa atacattatc ataattgcaa
191801 cgagaaagat acactcagac ttcttccagg agcaaagaat ggtacctacc
191851 cagagttgag tatttaaaag tggtaggaat tagccaggca acaggaggca
191901 gagaaggata ttccagtcag caagatggcc ctgagaatag aaatagcact
191951 ggcgaggagg ggcaggcggg attccagatt atgtataagc atataagaag
192001 ttcagtgttg ctagggctta agggggtggg ggaggaaggc tgaatctgga
192051 gaaataatca ggcatcaggc tcactgaaaa atctcataaa ctaaaggaag
192101 aaaaccactt tggagatagt ttttaaacag gaaggtgaca ggtaataagg
192151 cctaaagtag gctggaggca gcagaatata gaggcagggc caaaatccag
192201 agacagcaca gagattcgag ctacataact ggcatctgac tgaatgtgga
192251 agaggagaag tccaagaagc ctctcaagtt tcaaattcag gtcacagtga
192301 gggtgatgat gccataaaca gaaaaaagaa aaaacaaagg cagaacatgg
192351 ctttaaacac tttgagcttg agaagctaaa aagatgctca tgtgaataat
192401 ttccagcaga tgattttatg aaatttaagt ccccgcacat tgaaatgatg
192451 attaaagcca agggagttgc tgatatgagc aagaaaaaca gtctacagat
192501 aaaagaatcg tagacagaat cccaagccat gcctactaca ttcaaagggt
192551 aggaagaaga cttaccaaag ctgactgaaa aagagtactc caagagaacc
192601 aggaagcagt atatgcccca ttagtgaatt catgaaaaaa aaaaagtttg
192651 tttgctatat ggcatataga ttcctgaaac actttacact ctccaaactt
192701 aggaagaaga gggaaatgca caggatggat ggtcgttaag cacctttaga
192751 cactgcatat ggttaaacag agccaagagg cagaacatgg gtgcatggcc
192801 aatatgcata ctcctgggct tgatccgttc aactgtttct gtactttatg
192851 ttcaactgtt gttatttaag agtgctaaac attaatgtga tactaaaaat
192901 cacatatgaa ccaatatgaa ctttgcctta acatttttt attaaccatt
192951 caagtatgag cgagttcatg ttacagaaat acattatagg agaacaggct
193001 gttcaaggag ggctaggcaa cagtatcaat gccatggagt caacaccaaa
193051 agaaaattaa tgtcttagaa taatactgaa cctttcattc ccaaatgtag
193101 actttttca ggtatatcat ctagtctctc ttctcattaa gtttcatgtt
193151 tcaagttaca tccaaggtat ctattctcac tgagcttctc aacagagccc
193201 aaatacttta atagctatac aaacacagaa tttgttgtac atcacagcaa
193251 tttatcccaa ataggtgaag gaaaattcac ctaggaaaac actagagagg
193301 aggaaaagaa tagggactga tagtaccaag tatactgtaa gtcaggaaag
193351 gctcatggag aacttttaaa gttttttttt gtttttggtt tttaactaga
193401 atgacatggt gtggcagaat tgtaatcttg gtgttccaga gatatatgaa
193451 ggagtctcac tgaagagata ggttgccaga gtgaacccca actcaacaga
193501 tagtcaaaag aaggcacaca gaacagcata tacaaaggca tgaagaagaa
193551 actactggtt actcaagcat ctccagtact ttatcacagc tggcacaaag
193601 gagatataag gaaaagtgca aggtgaggta aaaaaggtaa ggtcttacaa
193651 ctatgtgtgg catgctaagg acttttatcc tgaagtcaat gggaaggatc
193701 ataaacagga aagtaacaca gaaagatatg agaaagatca atccacaaga
193751 tacactgggg agagaagata ctgaacacag aagagctagg tacactatta
193801 tacttgttca ggcaacaaag ataagggtct aaactagggg cagaggaagt
193851 aaggttggta acaggtacaa acatgagggt tcttcagata actaatacaa
193901 agaagggtga aggaggggaa gagaagggag tcaaggatag aatcttaaac
193951 ttggacaatc agatagtgcc acttagcact ggaggttcca gagacagaag
194001 caagtctggt agagctaact gaattttgca ggtgagaaaa tatatattag
194051 ccctggtatc agaaactaaa gcataaagct taagtgttaa gcccaaagat
194101 acggattatc atttttggt aaaaccaacc aactggctcc ttgctgataa
194151 gaaggaaact ttgcaagagt aaaaagataa aaaggcaaat aaatctaata

FIG. 7 CONT'D

194201 gtaaagttca tcaaaaattt gcaaggtttt aaagtataga aatagcaatt
194251 tctgtgatat agtcgatatt tcttcaatat tttccccatt cactaacttt
194301 caggcgtggt ttgtacatgt caagtcttag actcccttcg gtggagtaca
194351 gcacagtaag caagagttct agctttagca tcaagcttta tttgtttgtt
194401 tttgagacag agtttcactc tgtcgcccag acttgagtgc agtggcatga
194451 ccacagctca ttgtaacctc tgcctccccg gttcaagtga ttctctcgcc
194501 tcagcctccc ttgtagctgg gattacaggc atgagccacc aggaccggct
194551 aatttttgta ttttttttt ttttttgaga cggagtttcg ctctgtcgcc
194601 caggctggag tgcagtggtg cgatcttgac tcactgcaag ctccgcctcc
194651 cgggttcacg ccattctcct gcctcagcct cccgtgtagc tgggactaca
194701 ggcacgcgcc accatgcccg gctaattttt gtatttttag tagagacggg
194751 gtttcaccat gttggccagg ctggtctcga actcctgacc tcgggtgatc
194801 cacctgcctc ggcctcccaa agtgctggga ttacaggcgt tagccattgc
194851 gcccagccgc ttagcataaa gctttgatat attgtaagtc caggctttgc
194901 cacttaacac ccgatggaag acttaaggcc acttacttaa gggttgtagg
194951 cctcaagttg cctcagcagt aaatggggat aataatagta cttacttgat
195001 ataggactgt tgtgaagatt aaatagataa tctatataaa gtacttagca
195051 ctgatatact gtaaacaata aatgttaagg tttttaaaat aattaattac
195101 tgttactaat gaaaatgtca caccttgag gtatacagca gcaagaaaat
195151 gagttgacct ggattgcagt tacctgagca tttgttttgt aattattcat
195201 taaacagaac atttctgttt tgcacacttt tctataagtt atctttgaaa
195251 acaggaaaag tttttaagaa tcaatgcctt acatgaaaag gtctagcatt
195301 aaaatgcaca ttccaggacc gggcatggtg actcatgccc ctaatcccaa
195351 cacttttaga ggccaaggca ggaggataac ttgagctagc agtttgaaac
195401 cagcctgggc aacatggcaa aaccccgtct ctacaaaaaa cacaaaaatt
195451 agccaggtgt ggtggcatgt gcctgtagtc ccagctactc aagaggctga
195501 gatggaagga cggcttgagc ctgggaggag gcgaaggtta tagtgagccg
195551 agattgggcc actgcactcc acccttggcg acagagccag accctctttt
195601 ttttttttt ttttttaaa aaaaaaaagc acattccaga acaaataaaa
195651 ggaaatgttt ccctttcaat atgtacttcc tagtttttgc tacaaaatgc
195701 atcccctacc caagctccaa atttctatca gtgatgataa ttactccctc
195751 ccttcctcca tttataaacc tcagaataac ctttactccc tttctcttca
195801 gtgatcttta taaagagaat ttgaaggagg aggaagaggg aggaagaaca
195851 gcatcatcaa atcctcattc caggttgtag ccattcccag tctcaatttt
195901 ttggaaaact cttctttgca gatcagacaa cagcgctatt tctccaaaat
195951 gaattctagg tattactgcc ctgtcaccct ttccattgct ctaatcatgt
196001 tacatctcct ctttgctctg gaataaattc cttcacatct ccctattaag
196051 aaaaagcttc caagcaactc tttgccacaa gatattcttg catcaacaca
196101 ggccacctgg aagtctcctc tctttaatat aatcactctt ctttttacc
196151 tggatattta ttcaccagtt aacatgcccc ttttaagttt ggtacatatt
196201 tcctataaga ttcactaacc tcatttttt tttcctctcc aaagatctct
196251 taaagtctct ctcgattgaa tgacaaagaa attttcttcc tcaaccctct
196301 ctctactcaa atcccctggc ataactctat ccttttattt tctttaacaa
196351 gtatggatct tattcttgca cctaacatct tgtgtatcag ctgcttctat
196401 aatttataac atgttttagt ttttgtctat cctatatgtg aaaaaatagg
196451 catcatagct tatcaaagtg catctcactg ttttggaaca gcctgataac
196501 cacaactact cagttacaga gctaagttgt actgtttcta atggacaaga
196551 ctaagcatgg ttatctactc ttagatatgc ctaaatcccc aataaaggcc
196601 cttcatcaga tttgacccca gtttaccctt tagtctctct ctctcctaca
196651 tttctctcag gactcttcaa ttactgctcc ctctagtctg gaatgcccct
196701 ttcttccacc agccttctcc cgccctttgc ctggccacct ttctttcatc
196751 cttcacaatc agctcactcc cattcatcca ttagaaatca accagagtat
196801 cttccctttc tgctcacctc caagtagttt ttttggcatg cattttcgga
196851 atactatact gtaacaattg ttgttctgca ttgtaattat caccccccact
196901 ggactgtaaa ctccctgaag tacagactgc atcttattcc ttatccccaa
196951 gacctaacat tgatagatac ccaatagaca attagtgaat aaataatacc
197001 catatccact gagtgacatg cacaggctac ataagcacac tgaggttttt
197051 tatctaaagt tccagctggg tgtgacgact agcatctgta gttcgaacac

FIG. 7 CONT'D

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197101 tttggaaggc cgaggcggga gaatcactgg agcccaggag ttcaagacaa
197151 gcttgggcaa caaagcgaga ccccgtctct aaaaaagatt aaaaaattag
197201 ccaggtgtgg tggtgtccgc ctgtagtccc agctacttgg gaggccatgg
197251 tgggaagatt ccttgaacct agaagtttga gcttgcagct gagctatgag
197301 tgcctgagca ctccaacttg ggtaaaggag caagactccg tctcaaaaaa
197351 tactttactc atgtaaagtg gggataatgc cacacttcat atacttgtta
197401 cacagattaa ataaggtatc atgaagctcg taacagtgtc tgccacatta
197451 gaactaccat ttgaatgtct atttcatgtt ttagttacac tatagaatcc
197501 cgagaaatgt aatgttgtga ccaataccag gctgaatggc ttagcaacca
197551 tgctcttttt catgcatcta aaagtcacgg gttacattct tatcagcaaa
197601 tatttgttgt gtacctatta tgtgcaggag tccttactaa gtatcactga
197651 gctaccagaa cacaatagag gtaaacaatg aaacaaaaac ctgtaccaat
197701 atccgagaga agaatgttac tggtttttct gtacaaacaa tgagtatttt
197751 tcaataaatt tttatttgga acaggatagg cttcaagaaa aattcctaat
197801 gggaaaagtt caaaattaac acttgtcatc aagtggacca ataacaggag
197851 gcagttccaa aatttcttgt tcctattccc aagttttact ttcgcttaga
197901 tgtatttctt acaaagggta tttaaccatg accaggaaag aatatatgat
197951 ctttatttga ctcatttaaa tgggaattcc acggatatct ccctaggttc
198001 tttcctacta gtatttaatt ttgtagctct gaaaaacggc ctgagtttgt
198051 ctgtttctct acaaaataga acactgaatg gtatatttac cccacaacct
198101 tccttaagac aggataaaac acacctctta atcacactag cttatcaaaa
198151 attacaaaac tgcaaatcat gtcgcctagt attagcaaag aaggctgcgg
198201 ccttaaaacc attttccccc taacaaatcc aaaggtcacg gtcccagtga
198251 agtttgtgca ttatacttac tgttttcagt agctgcagag agacctctag
198301 cgctgcctca ataagccgag tttgcaaata gtacctgcta atgtcacctt
198351 aatgagacaa tggcaacatg ctgagtagca actaactgag tgaccgcgat
198401 gaatgtttag ttttgcaacc acttggaaat tctactagct tggagcaaga
198451 ggtatgtaag agaattatga acctgtgtat ccaatttatt ttagtaaaac
198501 gtgtcaaaga aattatcacc ctatgcacac cccactccaa gaaaggctaa
198551 gaaaacaagt cctatgagcg gaggtcggag caacctcttt tccgaagcct
198601 gaacacaata gatggcaaac tattgtccac cttcagctcg ctccaaatgc
198651 cagcagttgc aggagtatga gctgcaacag ctcggcacga ctagtccaaa
198701 gacgagcact ggaatataag aaaatggtcc tggcgcatcc taccctcccc
198751 catcgatcac cctcaaacaa gtcagttacc cggctggtcc ccacccccct
198801 ctgcgggccg ccaccgcccg cctgggcccg gctcgcagaa ggtaggagcc
198851 cggaccggca gagccgaggc tccatgtgag ccgcgcggga ggcgcagagg
198901 gggctgcacc ggacggaagg ttgcaccggt ggcgggcgca agcagcggcc
198951 gccccctcgg ctgtgcggtc ggagggcccg ggcggcagca tccccgttca
199001 tccgggcggc cctggcccgc ggaccccgcc tcagctccac atcccctcct
199051 cgccgacacc aggccgcgcc cgcgtgacgg ggccgaaaac gccggcattt
199101 cccggtcgcc gcgccggcag ctccgggggg tgactgcagc ccggccggcg
199151 tctcgccgcc cgctccgccc agcccggggc cgcggtgacg ggaggcggcg
199201 gccaactccg gccgaccaca agccgacgag aaccagcccg gcgccggccc
199251 cccgcccctc cccgcgtcgc cgggccggcg cggccaggcg ggcccagacc
199301 gcggaagcac actcacttcc acatcgcggc ccttgttctt gaagctcttg
199351 atgcggtggt tctccaagct ggggttctcg gccatggctg cgcgcggctc
199401 cggcggcggc tactcctgcg gctgcggcgg cggcggcggc gaatcttgga
199451 gcgggagggg gaggaggggg agagcgggag gggggagggg gagagaagag
199501 cacgttctgt gacgcctccg agcgcgagga ggcagtagca ccgggggagg
199551 cgcggaccaa cagccgggcc gggtggggcg ggaacggagc tgagagcggc
199601 gcgcggccgc ggaggctggc gacacgtgac cgggggcggt gaccggcttg
199651 ggcgttcgcc gggctatacg tgcccgttgg ttctcgggat gaccctgccc
199701 tcttcccctg caagggctct ccacaacccc tcggtgctgc aagttttgtg
199751 ccagaaatgg agccggacct ggcgactttt actgcccctc aggcgcgggg
199801 cggcggtcgt caactacagt tcccatcatg ccacgatccg cctggagtaa
199851 ttctccacgc ctagtgagaa cgaggagaat gccgggaccc ttccgcgcgc
199901 ggctctttgc gcgccgcgct catgttgctg ggcacaaagc tccgccccca
199951 caaggccgcc tctgggcggg gaagagcggg ggagcgtccc tggcaccttg
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FIG. 7 CONT'D

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200001 cgccctatca ggaggaagag ggcgggcctt cctgggagcg cacctcgctg
200051 cctgtagcta gaagatcaga aaaggaacaa ccgcgagtgc tttgcagtct
200101 cgctttttg ggggtcttct caaatagcca ccttcattcg ctcttcccat
200151 gctctgcttc agttttataa atagcatttc tacctgacat gtacatgtgt
200201 atgtatgtga tacgagtgtt tatatgcgtt acctaggtgc ccgcgcggaa
200251 attcagctca atgagagcag gtactttggt tgaattactg ctgaatctct
200301 agtgtcaaaa caatgcctac cacgtcgtag atacgcaata cttgttgaac
200351 tggcgcttta gtgtcgccca gtttcttcat catccttcca agcccggttc
200401 tgcaaccttc actctggcag tccctgtatt tacatgcccc ccaacacttc
200451 ttgttctacc accacacaga atcttagcct tcaggcagca gcccagccct
200501 ggtccgcaga ctctcctgtg tagcactccc actccctctg ggggcatcga
200551 aagaatgaaa gagggaaatt tggatggatt acactgataa agagctgctt
200601 tcggccgggt gtggtggctc acgcctgtaa tcccagcact ttgggaggcc
200651 gaggagggca gatcacaagg tcaagagacc gagaccagtc tggccaacca
200701 tggcccgcat ggtgaaaccc cttctttact aaatatacaa aaattagctg
200751 ggcgtggtgg cgcatgcctg gaggctgagg caggagaatc gcttgaaccc
200801 ggtaggcgga ggttgcagcg agccgagatg gcgccactgc actccagcct
200851 ggcgacagag ggagactctg tctcaaacaa aacaacaaaa acaacaacaa
200901 caaaaacaaa aagctacttt ctggagcagg tgggcttcat ttgcttgtat
200951 gttaattttc agaatctatg gtagacatga gcaggtatgt aatgttgtag
201001 tacttataat tgaactgagg tcaaaagttg gtaggactat accatgaaga
201051 gatcaaaaag gacaatcttt aaagcgaaag ggccttggct gggcgcggtg
201101 gctcatgcct gtaatcccag cactttggga ggtcgaggtg ggtggatcac
201151 aaggtcagga ggtcgagacc agcctggcca acatggtgaa accccacctc
201201 tactaaaaaa aatacaaaaa ttagacgggc atatggcgca tacctgtaat
201251 ctcagctact tgggagcctg aggcaggaga attgcttgaa cctgggaggc
201301 ggaggttgca gtgagctgag atcgtgtcac tgcactccag cctaggcgac
201351 agagtgagac tccatcccca aaaaataaaa ataaaaaatt caaacaaccc
201401 aacaaaaaca tgcaaaggac actgatcaca gaaaaagaat aaatatatga
201451 ggagatacag aaaaaaaaaa aaaaaaaaaa gcgaaagggc cttaaagaac
201501 ctgaggccca gaagtcagga attcagaagc ctttggtggc caagctatgt
201551 ccaggggcat tcgtcttgtg agtggtgggg tgtggcctat tgataaacac
201601 aggcttcaga tcctctggtc atactggact gtggcccagt gttgccagaa
201651 gattccactt ttcaaggaaa accaaaaagg tagattcttt ttctctttat
201701 ttttaaatgt taattcacat tttgttaatg gacttaagca tttcagtcac
201751 ttcagaatat caggtcctca gtttgcaaca cctgatctta gtctaaccac
201801 tcatttgaag ggaaacacac acacacacac cagctatgaa tttagaagga
201851 atacattagg cagggcacag tggctcatgc ctgtaatccc agcactttgg
201901 gaggctgagg tgggaggatc acctgaggtc aggagtttga gaccagtctg
201951 gccaaccatg gcccacatag tgaaaccctt tctctacaaa aatacaaaaa
202001 ttaggcaggc atggtggtgc atgcctgtag tcacaggtgc tcaggaagct
202051 gaggcaggag aatcgcttga acctgggagg cggaggttgc agtgagttga
202101 gattgcgcca ctgcactcca gcctgggtaa cagaatgaga ctctgtctca
202151 aaaaaaagaa aaaagaaaga atacattagc tcaactctgg gttttaagga
202201 aacagaactt gtgtgtttgc cattctcctt ggctaaatgg aagagaaatt
202251 ttcagactgt tgctcagtct ctattataat ttagtaggta ttccctttc
202301 aggttacttt atgccacctt tcttcacacc cagtccaaag cagggctgcc
202351 cttttgcctg gatctagttt actcattttt attctttgcc agtacccctg
202401 gtaacttcag cattcacaaa tgtggcaccc tgacaccaca gtctttctac
202451 atccttaact tcaccaagtt ttttaccact caagtggtaa aaagtgcaag
202501 cctgcaccag accttggaga ccttaatctc tgggaaatga ccacctccag
202551 ggactcaaat ttggtgcttc tcattgttag aaactatctc cttctctttt
202601 gcctcactct aatcatcatc cttggcctga aacttctctg gacagctctt
202651 cttttaaatg gatttatttt ccacacatat tgtgagtgtc tactgtatac
202701 caagcattgt attcatcggg cacatgtatg aaggactagg gggtctcggg
202751 ggagacagga aggaagggcc ctcagcccag gggtcaatca aatcctctga
202801 ctcactctcc accttcccaa ggcatgggga gtcatgccag cagtcagtca
202851 ggtagcagta tgccgtaggc aacacaagca taacagatgg gaaaaggact
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FIG. 7 CONT'D

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202901 tcatgatttg cctcctaagt cagcttcttt ctgcaaactc acccctctat
202951 tactggcata accattcttc cagggacacc tctccaagct aagagccgtc
203001 tttacttctt gtctctctcc ctcaactccc tcacctagtc accatgttaa
203051 ttcaccactc agtgtttctg gcatctctct cttcttccca tgccacccac
203101 gagactacct taacacctcc taagcagtcc acctgcctcc ccaatccctc
203151 cacagcaatc tgactcactt ctccagatct tcctgacttc atctctgctc
203201 ccaatcagca tacccttctc ctctgccatt gtctgtcaaa tcatttataa
203251 actcagtcta gggccaggct ccgtggctca cgcctgtaat ctcagcactt
203301 taggaggccg aggcgggtgg atcacctgag gtcaagagtt caagaccagg
203351 ccaggcgcag tggctcatgc ctgtaatccc agcgctttgg gaggccgagg
203401 caggtggatc acgaggtcag gagatcgaga ccatcctggc caacatggtg
203451 aaaccccgtc tctactaaaa atacaaaaaa attagccagg cgtggtggcg
203501 ggtacctgta gtcccagcta ctcgggaggc tgaggcagga gaatggcctg
203551 aacccaggag gcggagcttg cagtgagccg agatcaggcc actgcactcc
203601 agcctgggca actgagcaag actccatcaa aaaaaaaaaa aaaaaaaagg
203651 agttcaagac cagcctgacc aacatggtga aaccccgtct ctactaaaaa
203701 aaatacaaaa agttagccag gcacggtgcc aacgcctgta atcccagcta
203751 cttggaacgc tgaggcagga gaatcgcttg aacctggaaa agggaggtta
203801 cagtgagccg agatcgcacc actgcactcc agcctgggca acaagagcaa
203851 aactccacct caaaaaatat acatattaaa ataaataaac ttgtctagtg
203901 gttaagatca tatgtgatgc agccacagtg caagatactt ttttcttatt
203951 tttggttccc ctgcacattg ctcatgcttc agctaacatg ttctgctcac
204001 ctttttccaa gtatatctta acctttccag tttttacatc tttgccattt
204051 gacttgctca gatggccctg cctctgtctc tgcctgtcaa catcgcttcc
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204251 cttttcatct acaagtaagg atcctgaatc actggggttt tgtgagaatc
204301 aaattctaaa atgcatgtgg aagtgctttg aaattgctct attaatatta
204351 gttgttacta tcttcctagc caggagtaat atgtttccct ctgaacctca
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204451 tctctcttac ctattgctat ggtgtaaaca tctatgtccc tccaaaattc
204501 atatgttgga agctgatacc caatgtgcta gtattaacac gtggagtctt
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204601 ctcttataaa agaggctgca gccagtgtgt acctgtggtc ccagctactt
204651 gggagactga agtaggagga tcatttgagg ccaggagttc aaggctatag
204701 tgggctctga tcacacttgt gaccagccac tgcactccag tctgggcaac
204751 atagcaggac cccatctcca aaaaaaaaaa aatgttgaag ggagcgccgt
204801 agtgcctgtt gcccttctgt ctcttccacc atgtgaggac acagtgttca
204851 tccctcctgc catgtgagga cacagtgttc atccctcctg ccatgtgagg
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204951 accttggtct tggactccag aactgtaaga aataagtttc tgttggccgg
205001 gcggggtggc tcacgcctgt aatcccagca ctttgggaag ctgaggcggg
205051 cggatcacaa ggtcaggaga tcgagaccat cctggctaac atggtgaaac
205101 cccgtctcta ttaaaaatac aaaaaattag ctgggtgcgg tggcgggcgc
205151 ctatagtccc agctactcgg gaggctgagg caggagaatg gcgtgaaccc
205201 gggaggcgga gcttgcagtg agccgagatc gcaccgctgc actccagcct
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205301 aaaataaaat aagtttctgt tgtttataaa ttatcaggtc tcaggtgttt
205351 tgttctatca gcatgttcta tcatgcatgt ttgctgaatg aacaaatgaa
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205551 cttacctcag tggtaaagaa atgtaaaata ataagtgttt tcatttactg
205601 aattcctgcc aggaatttat atacatcatc tctaatccct gtgaaagccc
205651 tgcatggttg aaattatcat ctccatctct ctctggggca ggcggagctt
205701 ggagctctgg ttccaaggca tggtgagagt ctgtggtgtt ggcaggaaca
205751 acggaagcaa aaagacacag aaagacaagt ggtttctctt gtggccaatg
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FIG. 7 CONT'D

205801 tctagaatag cagtaatgaa gacctccact ctccccaaag aacaaataca
205851 gtccttagac tctaggaaag taaggtctcc tctccaaggg gtgtcccctg
205901 tgcggggagc atcagtcatg gaaatgggtg tgcctagcag ggcaaccatc
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206001 gaaaagtcag agaggaagaa ccagataaat ccccagaaat aattggggac
206051 acctcaagcg aggctagtgt ctggccagta agcactgata cataattatg
206101 tggataacac aaataagata acctcaatgc ataataatgg gctaatgggc
206151 ctgggacaca cacattgtcc cccaatatca ttttcaaata attagactac
206201 aataaaataa acaatgttaa aattgtagtg ggcataattt agaatatact
206251 taccgtctca aggtcatgat tctgcatgat tttacacata tgtgaaatct
206301 gcatgatttt acacatatgt gaaatctgca tgattttaca catatgtgaa
206351 atctgcatga ttttacacat atgtgaaatc tgcatgattt tacacatatg
206401 tgaaatctgc atgattttac acatatgtga aatctgcatg attttacaca
206451 tatgtgaaat ctgcatgatt ttacacatat gtgaaatctg catgatttta
206501 cacatatgtg aaatctgcat gattttacac atatgtgaaa tctgcatgat
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206651 tgcatgattt tacacatatg tgaaatctgc atgattttac acatatgtga
206701 aatctgcatg attttacaca taagtgaaat ctgcatgatt ttacacatat
206751 gtgaaatctg catgatttta cacatatgtg aaatctgcat gattttacac
206801 atatgtgaaa tctgcatgat tttacacata tgtgaaatct gcatgatttt
206851 acacataagt gaaatctgca tgattttaca catatgtgaa atctgcatga
206901 ttttacacat atgtaaaaat ataattttat actactagat attataggac
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207051 atgaacacag tcctggaagt ttagtaactt gctggttctt taaataacaa
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207251 tctcctgtct ctccctattt tatagatgag aaatacaaag acagtaaatg
207301 atcataattg tcaaacggac cgaaagttga gtgttctgat ttttttccac
207351 tcatgtccag tccttcatgg gccttctgat tttccagaag ctgccactgt
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207451 accctcaaac caaagttttc gctctcaaaa tagttgagat aggctgggtg
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207701 cactcacggt aaggtatgaa tgaccttatt aaaccatgtg aactccagca
207751 gatggaatgt ctgatatatc taacctatta ttaacatcca ccctcccctc
207801 cccacacaag aaaacaaaaa gcaatccttt ggcatccaat ttcagctgat
207851 ccctgctgga agttattttg ataatactag ggctactggg aagtgacctc
207901 tttgaacgaa taccagattt gttatctgtt tctgcatcat cttctccagt
207951 aaacacgagt acctggagga aagcatttat gtcttactca tttttgggtt
208001 ccctgtgtct aatatggtac atagcacatg atggggcctc aacaaatgct
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208201 ggtagttcac gaggtcaaga gatcaagacc atcctggcca acatggtgaa
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208301 tcaggaggct gaggcaggag aatcgcttga acccaggagg cggaggttgc
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208501 ataaaataat aataggctgt ggtggctcat gcctgtaatt ccagcacttt
208551 gggaggctga ggcaggcaga tcacttgagg ccagcagttc gaaaaaatta
208601 gccgggcatg gtggtgggtg cctgtaatcc ccgctactcg ggaggctgag
208651 gctagagaat ctcttgaacc caggaggcgg acgttactgt gagctgggat

FIG. 7 CONT'D

208701 catgccattg cactccagcc taggtgacag agggagactc cgtctcaaaa
208751 taaataaata agtaaataaa tacataaata aaaataaaaa ataatcgggg
208801 gatggcaggg agcaggggag agcattaggg aaaagagcta atggatgcag
208851 ggcttaatac ctaggtgatg ggttgatagg agcagcaaac cactgtggca
208901 catgtttacc tatgtaacaa acctgtacat cctccacgtg aaccctggaa
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209001 agacgtaaat aggaaaaaaa aatgatcaat gacaactact gagtgtgcac
209051 catgtgccag gaaccacgtt aagccttttc tgggattact tcttttaatt
209101 ctcacaacag tattatcagg tagaaactat ttttactcct attttataga
209151 ggaagaaact gaggccaaaa aatgctaagt aactcttgca cagtcaggag
209201 gagagagggt ccatgcaact tgattgcagg gcccatgtct gtaatttggt
209251 tttctgcagg caagcacgca gagagatggg ggagagccat gtgtcctgtc
209301 tgggtcacaa tacctagaga tacctccttg atccagcaca aacaaaacgg
209351 tttccacagg acaataatgt tatatttagt tgcaaaacaa acaaacaaaa
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209451 aaaagctagt ctctactgaa aagagatttt tatcgtcaag tcagcaggac
209501 taggagagga ctcagacaaa ccactaaatc cacaagtcgg acaaaaaagg
209551 gcttgtcatc tagagttgta ttaagtagat aacttttttat cctttgcata
209601 ttgccatttg gaggagacat actctgctta ctaattatgg agcgttaaag
209651 actccagtct gtaaatattc agctctaaag tcattcctgg aaaacaaggt
209701 aacgggaggc aggagacacc tgaaagtagc catccaaaag actggttcat
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209901 gctggagtgc aatggtgtga tctcagctca ctgcaacctc cgcctcccgg
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210051 caccaggctg gtctcaaact cttgacctca ggtgatctgc ctgccttggc
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210151 ttttttttt gagacaacgg ctcgttctgt tgcccaggtg ggagtgcagt
210201 ggcgcaatct cagctcactg caacctccgc ctcccaggtt caagcaattc
210251 tcatgcctca gcctcccgag tagctgggat tacaggtgtg tgccatcatg
210301 cctggctaat ttttgtattt ttagtagaga tggggtttcg ccgtgttggc
210351 caggctggtc tcaaactcct agcttcaggt gatctgcccg cctcggtctc
210401 ccaaaatgaa caatacagtt ctgggcacac tgtttccccc ctatttcaaa
210451 tttctatgtc ccttataatc aacattgcca atacattaat aatccttagt
210501 gaatggccaa tagaaatttt ctaaaagaaa tttttcttac ctaacttgta
210551 tgagtctttt aacttttagg tctatttccc tttaaatcct gcagtttaaa
210601 taactttgct ttggccaggt gcggtggctc aggcctgtaa tcccagcacg
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210701 tggcgaagat ggtgaaacct tatctatact aaaaatacaa aaattagctg
210751 ggcatggtgg caggtgcctg taatcccagc tactcgggag gctgaggcag
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210851 cactgcactc cagcctgggc gacagagcga gactctgtct caaaaaacag
210901 aaaagaaaag taactttgct ttggataaaa tgtgtttttt cctccaacta
210951 cactttcaca ttttctctct ttgatacgca gatgttctat ccatgagatc
211001 atagtagctt aagcatttat agacaaggca gtgtgatgtc ctatagttat
211051 gctctccagt acagctgcca ctagctacat gtggctattt aactttaaat
211101 ttaaattaat gaaaattaaa tgtaactaaa aattaagttt ctagggccag
211151 cacagtggct catgcctata atcccagcat tttgggaggc ctaagcaggg
211201 aatctcttga gaccaggagt ttgagaccag cctgggcaat attatgagac
211251 ccccgtctct acaaaaattc ttttaaaaat ttcttttaaa tttttaaatt
211301 taagccactc ctagctactc agaaggctga ggtgggagga ttgctcgagc
211351 ccaggagttc aaggctgcag tgagctatga ttgtgccact gcactgcacc
211401 ctgggcaaca gagagcaaga cctgtctcaa aaaaaaaaaa attgagtttt
211451 tcttcacact agtttcattt tatgtgcgca atagtcacca tattgtgggg
211501 actgtattgg taacagagat atagaacctt atcacagaaa attctgtggc
211551 taccccagaa agaacacaac acacgtttag caacagacag accttcatct

FIG. 7 CONT'D

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211601 tttcaatttc caccttaatc ttttactaga cttgtgacca tgggaagttt
211651 cttaaacttt caaagtttca gatatttaaa ctataaaata gaaatacagc
211701 tgggtgcagt ggctcatgcc tgtaatctca gcactttggg aggccaaggc
211751 aggtggatca cctgaggtca ggagttcgag accagcctgg ccaatatggt
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211901 aacacgggag gcagcggttg cggtaagcca agatcacatc actgcactcc
211951 agcctgggtg acagaatgag actctgtctc aaaaaaaaaa aaaaaaaaga
212001 aagaaaagaa aagaaaaaaa aagaaaaaga aaaaagaaag aaacacaaac
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212101 cttaataaaa ctattattat tagtgcttag ggatcaaaca ttccctttt
212151 gatccaaagt aaaaaagctt ttgaggccag gtgtggtggc tcatgcccgt
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212251 gtttgaggcc agcctggcca acatggtgaa accctgtctc tacttaaaat
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212551 tttagattaa aaatgtcata gaatacttac acgtttttgt tccttctcta
212601 ggagaaaaac aacttgaatt gccgtggaga aaccttagac tctggtagct
212651 gtttaaactc ataaattgtc ccagaagatt tctaattccc aaaccatcaa
212701 accgtccctc acatttaatt caggaacacg ttcggcaaat gtttgtgttt
212751 gtacacgaag tctctcagcg atctaagttt gacttggaga gcaatgaggc
212801 aaaattccca tcttcctacc ccactttaac ttggagataa aacctactca
212851 agttatacat accagtactt tcaaaagccc ttcaacttat ctaagcatct
212901 ctctagcccc acactcttcc ccttttcatc tcaatatgga actttgtgta
212951 aaagcatcca aagctgaaag acagagctgt ggattatgtg cctgcagagc
213001 ttaatccctg ccaatctcac agaggggcac cttacagtta ggaatgtgtg
213051 caaccagagc caggataagt tcagactcat caaacgattg ttttatcaac
213101 cacaattaca caatacaact aaaacaaaaa taaccttgag aagcaatgag
213151 taacctacaa ctcatcatga tatgaagttc aaataattgc taatgccaca
213201 cttggacagt caagtttttc aagcttcccc ctgctccccc tgcccccaaa
213251 aatagacaag attatgcaat gagaagataa aggagataga agacaatgct
213301 ccagggccag gcgtggtggc tcacacctgt aatcccagca cttagggagg
213351 cagaggcagt tggatcacga ggtcaggagt tcaagaccag cctggccaag
213401 atggtgaaag cctgtctcta ctaaaaataa aaaaaaaatt agccaggcat
213451 ggtggtgggc gcctgtaatc ccagctaatt gggaggctga gacagagaat
213501 tgcttgaacc cgggaggtag aggttgcagt gagctgagat cgcactactg
213551 cactccagcg tgggcggcag agtaagactc catctcaaaa aaaaaaaaag
213601 aaagaaaaaa agaaatcaat gcttcatcct tattattcaa agctagattg
213651 caaaatatac taatctaaga aatctttagt ttttctcctc cctatagctt
213701 tagttgagct ttatgtaggg tttctttctt ttatacaaag aagcacaaat
213751 atctctcttg gaagactaca gctcagtaac tgatgggaac atgcaagggc
213801 aggtgaaaac acacaggaca acaatataag aatgttttct gatgcacaat
213851 atgagcaaat acggttctag tcactctctt tctgctaagc aaaaaatctg
213901 acccaagcca acccctgcta tctaaaatgg tcatttttga aaaatgtctt
213951 tattagtaat catttgtttt ctgtagaaat gggaataata atagctagca
214001 ttcattgagc atttaatatg tttaaagcac tattttaagt aattcgcatg
214051 tattaacaac agccctatgt ggtaggtaga gaatatcatc tttcgtttta
214101 cagaggaata caccgaggca tggagaggtt aaacaatttg cccagggtca
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214251 tggacattga ttccttgcta cacacaaacc tgcaaccata tgtcaagact
214301 aacatcttat agtttatggt tacttgtaga aaccaaatta aatgaggaac
214351 ccaaacattt gattggaacc tattactgtc atcaaaaccc acttctcctt
214401 ggttttcata attcccagtg ggaagtgtat ctcagcaatt ttgtctgtca
214451 ggaattttga aaagtcaaga ggtgagtcct agtgacatta cttcagctcc
```

FIG. 7 CONT'D

214501 aaatcatagc acacctgaag ttggagccat ccatgaattt ttcttctttt
214551 tagttatgtg gctaaataaa ttccctttt aaaatggctg tttgagtttc
214601 aactgaaaga ctcataacag atacaccccc ttctccagcc actgccatcc
214651 ccacccgcac agtgagtgtc tcacaggtgg gaccatgacc tcagccggtc
214701 tgtttattca gagtgaacct cagggctttt gtagacatgg ccagaaaaga
214751 agctctcttt ccattggact tgaacctgga aagacgtgag cctggaaata
214801 cggcatcatc taaggctgct ggagtctgct gcacagagct ggggtaatag
214851 cccatcgagg gtgaaagtgg agttaagaga agcagggaca ttgaaccctg
214901 caggcatcat ttgagtcctg aacttttag tgtcggaagc cactcaacct
214951 ccagctatct attcctgcct tacaaagacc ctaaatgtag tggcttaaaa
215001 caacaaaaat ttatgatgtc tctcagcttg gcaatctgag tgattgtctg
215051 gatttactag tcagctttac cacagtaaca aatgacttcc taaatcccag
215101 gggcttgtaa caacccatgt tcctcactct gccgttacac gtctgcgatc
215151 acatcagtga aggctctgat tctgctccat gtgttttcac gttcggggac
215201 caaggctgca ggaggagccc ccattcaagc aagacctgtc atccccttgg
215251 cagaatgaaa agagcaaaat acccgatggc cctttaaagc ctcagttcaa
215301 atacggtgta tgttatgtcc tttgataccc cattgaccaa agcaaatccc
215351 tgactttgag gactccctgt agctgtctgg gtaaattagg ttagcacccg
215401 aggccctttg tgagagttta aaataaggag atatgcacat acagagaaaa
215451 agagagaccg aggcaaagaa agagaattta tgtgtatttc tacatgcatg
215501 gtgtgtgtat gacttttttt tttttttga gatggagttt cgctcttgtt
215551 gcccaggctg gagtgcaatg gcatgatctc agctcactgc aacctccacc
215601 tctcgggttc aagtgattct cctgcctcag ccttccaagt agctgggctt
215651 acaggcgccc atgaccacgc acagctaatt ttctgtattt ttagtagaga
215701 cggggtttta ctatgttggc caggctggtc tcgaactcct gacctcaggt
215751 ccacctgcct cggcctccca aagtgctggg attacaggca tgagccactg
215801 cacccggctg gtgtataacg ttcttaaggc aacttcattt ctgtgtggaa
215851 ggttgaaggt cagtcccaac ctgagatata ggaccagttc ttttctagtc
215901 agggagaatt caggaagcca cgttccaaaa cagtaagtca gacttctgtt
215951 gagcctgctc tgatttcaga ccttcgttct gctaacaggg atccagcctt
216001 tggccccatc tgtagagtca cagcagctct gctgctgctc atccgctggg
216051 gctactgcca attgctgctc agtcccttgc tgtcttcata gagccttggt
216101 cacaagcttc ttctcgagga caactacagg gtctgcccca ggtacatccc
216151 cacccatgag catctagttt ccacctcctt tctgcctacc agtcaggagc
216201 taagataatt ctgataatat agtaataata gcatctgtca tttattgcat
216251 atagtaataa tagcatctac catttattgc atatagtctc aaattcttat
216301 gtatcccaga agtgcagcta tttccagctg ggcctctgtt ttcattaggc
216351 atcattctta atatagatct caacccttct tcaagtcccc cagaacaatc
216401 catgaacacc aaaagtgttc acgagccatg tgtaattgac tgaggcttcc
216451 ccaaaacagt ggagtagaga tttatagggc acacccaaca gaagcagctt
216501 ttctctaatt tccttttctg ctgtgctacc atcaaggctc ctccttctcc
216551 ccacatctcg aagcttagcc ttctcagtcg tatgctgaat gcatactgaa
216601 gtaacagata atggaatatg taactacata aagcttaaat aatagggttt
216651 attatctctg ggggtatcat tttcaggctt tgttaattca gggacccaac
216701 aacatcatca agcactcaac ccatgtgttt tctacttccc tctgtgccat
216751 ccccagcctg ttggttttca tcctcagagt ttccctcatg gtcacaagaa
216801 ggctgccaca gctccaggaa ttacgtccac acataactat atctaaagat
216851 aggaagagga ccattattcc tcctccccac atcataaagg aaaaactttc
216901 acagaaacat ctcagaagac ttacctttaa actcctccac tggggttggg
216951 ttacatgctc atgccctaat aataaaagtt attcagctga gacaggagaa
217001 tcgcttgaac ccaggaggtg gaggttgcag tgagctgaga ttgcgccact
217051 gcatccagcc tgggcggcag tgcatgactc cttctcaaaa aaaaaaagtt
217101 attcaggttg agtatcccaa aatgcttggg accagaagtg tttcagaatt
217151 cagatttttt tccctcccga ttttgaaata tttgcattat acttaccagt
217201 tgagcatccc taatccaaaa acccaaaacc tgaatgttct gatgagcatt
217251 tcctttgagc accatgttga cactcaaaaa atgttggatt ttgaggcatt
217301 tcggatttca gattttgaga ttaagggatg ttcaaccttt attgacattt
217351 ttagcctctg gagttggaaa gtggattctg acagcaagga tgaaagatga

FIG. 7 CONT'D

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217401 ggagagaatg gctgttggga agaaaaccac cagactcacc caccctgagt
217451 agcttggtgt cctactcacc tgtgtgctct gcaaagtaca acgcccaact
217501 atgactaggc catgctcttg aagcctgggt aagagccatc taacattact
217551 caggaaggcc tttagagtcc gacctctgcc ccaaccctag caaggttatt
217601 aaagccaggg atatcaaaac tccttcctta gaggagtttt actcatcttt
217651 ataccttttac tgcttctcca catgcacagc aattctgcag tctgagaatt
217701 atctcatttt ttcagatatg gaagctgagt agcagagaat ttaagtgact
217751 cactcagagt cagataacta ctaaatggta gatcaatatt tgaacccagg
217801 gctctctggt tccaatgtcc ttgctgtcac tgaaagcaga acaaagaccc
217851 aaaagaaaaa gcaaagaaga cagactaggc ttaaatttta gcagaagagt
217901 aaatatcttc ttggtccttt agtaacttaa aaccattaca agtttctaca
217951 gaggaatgta atttctgtcc ttggttatct ggaaaagata aaacagagcc
218001 gtgctttcag tacttggccg aggacatggg ggcattttaa agtgttggaa
218051 tgattgaaca caagccatgc tgctgagtcc tggacaccca acccttaaa
218101 tgaggcctgg ggagacattt actgaggatc tggcccctgc cccaagaaag
218151 ggggtcccag gccaaaaagc tgagtaaaca gatatttttg ccacagtgtg
218201 gtaagtgcta ttatggaact atgaacaggt ctgtgagagt gtgggtgggg
218251 gagaggggcg gggagggtgg acggtagaaa aacccctgac tgaggtcatc
218301 cctgtgttcc aggacagtgc agtcactcat tgcaaaacag ggaccctgag
218351 tcatgaggaa agagctaaag taaattcagt agacaccatt aaacaaggca
218401 ggggatggga gatgtcttgg aacgatttcc ttccaatatg gtttacagga
218451 aaacatttta gcaattctga atgtaaattt caggggtttg tttgtttgtt
218501 tttaagctta ctttatggag cattacacat ggctttatga ggattagttc
218551 ttacttcatg taatatagta agtaatttgc atacactatc tcatttaaag
218601 cttaaaataa tcctgtgaag ttgatagttc tattttccca ctcaaaaaat
218651 tttttttta ttttcggtgt ggagtggtaa ctcatgccta taattccagc
218701 actatgggag gccgtcaagg aaagatcgct tgagtccagg agtttgaacc
218751 aacttgggca ccatagtgag accccatccc tataaaaaat actaaataaa
218801 aaattaaatt tttttcaaaa attttagttg cttcccccaa cacagtgcac
218851 actattttag gtacagcaat tgatcagaga ggcaagacag cttgtccagg
218901 gtctgtcagt tcttcattgg cagagttgga atcagaccct ccctgtcatg
218951 aggccaaggt gccttctgaa aaattcactc ccagcaaaca catgatttcc
219001 tgggagaggt ggttatagct tagtatactg gatccagata gaaaataggt
219051 gttctgtgct cacagtggaa aagcaacaaa aatggtaatg aaggttgaat
219101 gatcatcagt agaaagaaac tttttttaaa aaatggataa tggacaatgc
219151 tctatcctca tatatttctg taacaaagaa ttaaggaatt caaagtttta
219201 aggagaaaag tttgtcaccc tgtattttct atagcttggg caaattgaca
219251 gacgtgctac aaaatggaag cagttaaaca acatccaatc cagaccattg
219301 ccactcagag ttcctcatcc cctggttgct tgttagaaat gcagattctt
219351 gggccccttc caggcctact gaatcaattg aacaggaacc ccagttgatt
219401 tgcatgcaca ttaaatctga ggggcttgct gctctacata gataccttc
219451 tctgccattg tttcgtccat tgcagataat gtcttacgag tctatgaaaa
219501 tcaaacacat gagcaggtca tgttgtgagc tgcagaagac aaatttgaca
219551 acaaagcaac atttgctatc ttttttaact aagtttaatt ttaacttaat
219601 ctagtaactt cttttgaata ggtttttggg aggatttgtg gtcctacaag
219651 aggagaggga agataatggg gaaaaagaag tcagcaggaa ggaaaaggag
219701 ggtattttcc ccaatggcgc agaccaatca tatgacaccc ttaatgtgtt
219751 atcaaatttc tacaggggtc agatgtgaag cccattacct gacatgcccg
219801 ctgggtggtc tggactttga acaatggctc ctcccatctg gaaccctctg
219851 ctattttgca aacgtttcaa tggctctgct gaaagccagg aaacaacagc
219901 tggtgaataa tctcatttta tattaataga gcagcactga cctatccagg
219951 tcccttaata cttcacgaaa cagaacatcc tttctttccc agggcaagga
220001 agggaagtct cagccatacc acattacagc atgagtaggg gccctgaaga
220051 agaatgaaca gaaagagttt tttcttgcaa acccacctca ctggactttt
220101 tcagatgagg attaagttaa gctaaaggag atggaagaga atatctgcat
220151 taaatccctg gactttacct atgcaaagaa ataaccagaa agtaagaaga
220201 ttcttgcccc agccttgcct ctgtcttctg tatgtgcagc tctttctgtg
220251 aaatcaaggt agagatgtcc aagttaagtg acaatctgaa agataaatat
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FIG. 7 CONT'D

220301 ggactatttt taataccagg gctagctggt ggattaatgt tagtggagtc
220351 aaataaaaca gaatgtgaca acaccaccag ttaatgagtg tttgtgtctg
220401 tgccggtagc atttttaacg ctgtagagaa ttgcaaagga ataaggtata
220451 atctgtgatt tcaaggaact tcattttgct ggaggatttc ttcaacacaa
220501 atgactagaa gcaaggatgt aaaatataaa ctgaaagata catatcttag
220551 ccaattatac catcactgac acatacagaa aaggaagatt aaaatgtttt
220601 gattaagcaa catttctaga gattctgtca aaacttaaac aaacaaacaa
220651 aaaatcctgg aaaacagtaa tcctttcttt aacatttaca aaagttcaat
220701 tgggtattcc tgctccaatt ttctcagtgt ggaatagatg gaaagttgct
220751 agaagggagt ggttacatgc caccagagta agcaagctgg accaggcata
220801 gaaactagct gatgagaggt agggagaatg gcagaaactt cttaaaacag
220851 tagttcctaa cctttgcctt ttgtctgggt caaggactct gtgatggtta
220901 attttatgtc tcactttggc taagtgatag tgcccagatg tatatggtca
220951 aaccttattg tggacatttc tgtgagggtg tttttgggtg agactaactt
221001 ttcaattggt ggactctgag tatagcagat ggccctccct gatatgggtg
221051 ggtctcattg actccactga gggcctgaaa agaacaaaag actgactccc
221101 cctgagcaag aggggattct ctggcctgac gaccttcaga ccttaactga
221151 agccttggct cctcctggtc tccagcctgc cagcccaccc tgcaggtttg
221201 agacttgcca gcctccacag tcatgagcca attctttaaa ataaatctct
221251 ttatagacac atcctattag ttctgtttct ctggagaaca ctgactaaca
221301 cagacccttt tgtgagtttt tagaaggaat atttattgaa tgtcttctat
221351 gtgcctaatt atggactctg atcccagaaa attgcacatg aacacaaaat
221401 tttacttacg gtttccaggg aatcaccaaa cccttgaagc acatccatgg
221451 actccctccc ttcatttaaa aactcctggg cctccagcct tttatataaa
221501 ggagacgtgg ctgaatattt ccccatccaa atattcctgc tctgaaagca
221551 gttaccacct ggtgggtgaa gtaaggagtc tacctgccca cagctacaaa
221601 aggaccagga aggcgtccgg ccacataact ctctctccct cacctctctg
221651 ggaggccagg aatttctacg ttagcatcag cactctgggg tggacgtttg
221701 ttcacttaac tagaataagg cattgttact acccatggta tggctgagcc
221751 tagctggttg ttcttaagct taaacatcag cactgccttc cttgacattc
221801 tccttatctc ctcgtccttg ctgatggact gtgagtgaag gtgatgtgtg
221851 tcacctccag tcagaggcca tgcagatggg gatgcctttc atgacctttc
221901 cccgctttca ccagactcag tgaaggactt ctctgaggta ttgacagagg
221951 cctcagatgg ccaaggggcc agatcctctt tctcctgcac tccacactgg
222001 attgtgacac aagcaaaaga tcatccttta tttatgttac ttatgttaaa
222051 tgactgagat ctggaccttg tttgttagct tatcctgact aatgcataca
222101 ggaattttac cattatgaga aagacagtaa aaatattaga caaataccaa
222151 cttaaaaatt ctaatatgat ctaggctggg tgcagtggct cacgcctgta
222201 atcccaggac tttgggaggc caaggcgggt ggatcacgag gtcaggagtt
222251 cgagaccagc ctggccaaca tgctgaaagc ccgtttctac taaaaataca
222301 aaaaattagc cgggcatggt agcacgcacc tgtactccca gctaatcggg
222351 aggctaaggc aggagaatca cttgaaccca ggaggcggag gttgcagtga
222401 gccaagatcg caccactgca ctccagcctg ggtgacagag caagactctg
222451 tctcaaaaaa aaaaaaaaga ttctaatatg acctaagcca ttattaccca
222501 ttgaccttag cagagactaa agcctgggtc ctgaggaagt agctatgttt
222551 aggactaaga actccaaact cagagaccgc aggagaagac taggcttctg
222601 ctggaggcag tcatgctgca caagtccagg aggctccatt cacccagatt
222651 ctgtagttcc ctggagttgt acagtgcact gcctgcacaa ctgtacaaag
222701 tagccctgct actggtagtg gcaaagcagc acaaaagagg caggaagaaa
222751 taaaagagag agaggaaggg tgacatggga gcctgctatg cctctctcat
222801 gacctcatca cccagtcaag tgctggccct gctcattgct gagatacctg
222851 aaaagtccac ccacacctca gctaatcaga ttctaggacc agccttggtt
222901 tgggggcctt tttgtctatg aaaagaagca tatctcccct gaactagttc
222951 ttgagggtct accttaaatt attggttact aaaggaaaaa tagtacaaag
223001 ggtaacctgt atgttggccc tgcagttaga aaatagggat tattattccc
223051 atttgtcaca gaaaaccttt ctttcttctt tctttctttt tttctttctt
223101 tccttccttc cttccttctt ccattccttt cctttccttt cctttccttt
223151 cctttccttt cctttccttt cctttccttc tctctttctt tctttctttc

FIG. 7 CONT'D

223201 tttttttga cagagtctgg ccttgtcgcc caggctgaag tgcagtggtg
223251 cgatcttggc tcactgcaac ctccacctcc cgggttcaag agattctctt
223301 gcctcagcct cccgaatagc tgggattaca ggtgcctgcc accacactcg
223351 gctaattttt ttttttttt tgtatttttg gtagagacgg ggttaaatca
223401 tgttgcccag gctaatctcg aactcctgag cttaagtgat ccgcccacct
223451 cagcctccca aagtgctggg attacaggcg tgagccacca tgcccagcca
223501 ccctcacacc cacttttaaa acactttata ttatagaaca cttcaaagat
223551 atacaaaata ggtaaaataa tgtaatggac catcattagg cttcaacaat
223601 tatcaacgtg tggaaattcc atttcatcta tttctctcta acccttattc
223651 tctcccctat tttctaccac ttttctggat tattttgaga tgcatcccag
223701 acttcatatc atttcattca tacatatttt agtatgtagc tccaaaaaaa
223751 aaaggattct gttttttaa aaagcataac catgacgtcc ttatcacacc
223801 taagaaactt cgttaatatt gacaaatatt cagagttcaa atgtctccaa
223851 ttttctcata attttttct acaatttgtt taaattagta ttcaaacatg
223901 attcacacct gcagttggct aatatgtcta ctggctctct tttcagtaac
223951 aagctgccct gtcttctttt cttttctttt cttttttttc ttccaattta
224001 tttgttggag aaactgggcc atttgtcctg ttgagtttcc cacattctga
224051 attttgctga ttgcatccct gtggtgtcat tccacctgtt tccctaagcc
224101 ctgtatttcc tgaaaagtgt ctgctagatc tacagccttg aacaattcca
224151 gcttgatatt ttgacaaggt tatttcatag gtggtgttgc gagcttttgc
224201 atctcatcag gggcacatgt ctgcttccct cccatttttg taatgttaag
224251 attaattaga ggattcgggt attgccagct tagtccatcc attagagagt
224301 tccccatcag catttcccct aatagtttta acagccattg atgaccagtg
224351 cttggataca ttatttctat gattgcaaaa ttatggtatt ctaattctat
224401 cattcctcct tcatctatta gctgaaatgc ttctaaaaga agacctttcc
224451 ctcaacaaca atttagttac cctgaaatac agttcatata caaaagacaa
224501 atgctcaatt ctttcccttt ttaaatcagt tttcagagta atgagttggt
224551 tccctagcaa cccgtaaagg tgacctatga gaatttttt tctggtataa
224601 ttataaactc atggatttta acatatttga tgtatttcaa tccagtgtgg
224651 atgcttgaat tattccatct ttgaacagtg agtttctttc tattggttcc
224701 taacctaagc atttaggaca caaccaagtc atctctgaaa gcttcgttac
224751 tttccagcat gtcaaaatgt ctatttcttt tcttttcttt ctttttgaga
224801 gagagagaca gagagtctcc ctctgtcatc caggctggag tgcagtgaca
224851 caatctcagc tcactgcaac ctccgcctcc tgggcagaag caatcctcct
224901 gccttagcct cccaagtagc tgggactata ggcacttacc accatgccca
224951 gctaattttt gcagttcttt ttttttttt tttgagacgg agtctccctc
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225101 gcctcccgag tagctgggac tacaggcgcc caccaccatg accggctaat
225151 ttttttgtat ttttagtaga aacggggttt cacggtgtta gccaggatgg
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225251 tctttttttg tagagacagg gtttcgccac gtttcccagg ccggtctcaa
225301 actctggggc tcaagcaatc cgcctacctt agcctcccag tgttttgatt
225351 atgggcgtga gccaccaggc ccggcccaaa atgtccgttt cttgcctcag
225401 ctctggaatc agtgattatc caaggacgcc ctggttccct ttagtgacaa
225451 attggattta gaaaccacag tcacagagct ggccacctcc ctacctagga
225501 gccctctccc tcaggtccct cacatcttca tttgatccta ctttttttcc
225551 ccaatccttg actgtcccag cttttccaca agggaacaaa agattaatag
225601 ctaaaggaaa ctcatgatat agtcatgtgt cacctaataa cagagatgtg
225651 ttctgagata tgcatcatta ggagttttcg tcattgtatg aaccccgtca
225701 tgttctcaca caaacctaga ttgtacagca tgctgcatgc ctaggctaat
225751 gctataacct atccctccta ggtcacaaac ctgtacagca tattactgta
225801 ctgaatattg taggcaattg tagcacaatc gtacgtgtat gtctatctaa
225851 acatatctaa atatagaaaa ggtggctggg tgcagtggct catgcctgta
225901 atcccagcac tttgggaggc cgagacgggc ggatcacaag gtcaagaaat
225951 caagaccagc ctggccaaca tggtgaaacc cgtctctact aaaaatacaa
226001 aaattagctg ggcgtgatgg catgcgcctg tagtcccagc tactagggag
226051 gctgaggcag gaggatcact tgaacccagg aggcagaggt tgcagtgagc

FIG. 7 CONT'D

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226101 tgagattgca ccactgcact ccagcctggg taacaagagc aaaattccga
226151 aaaaaaaatt aatttaaaaa accgaaagaa agaaaaggta cggtaaaaat
226201 tcagtgttat aatttcatga gatcactctc ctatatgcgg tccatcattg
226251 actgaaatgt ctttatgagg tgcacgactg taactgaaaa cagttatcac
226301 cttgatacag gtgaagattg agacaaatct cttctttagt ggaacgtgtc
226351 taattccctc acatgaatag cctacactct ttcccttggt tataagggct
226401 ccaaaactac tgagtcccca aaaccaagga ggtagggggt tgagggacat
226451 ttacctttgc ctaatgaagg ttttttttt tttttgagac ggagtcttgc
226501 tctgtcgccc aggctagagt gcagtggcgc gatcttggct cactgcaagc
226551 tctgcctccc gggttcatgc cattctcctg cctcagcctc ccaagtagct
226601 gggattacag gctcccgcca ccatgcctgg ctaatttttt aaatattttt
226651 agtagagacg gggtttcacc gtgttagcca ggatggtctc ggtctcctga
226701 ccacgtgatc tgcccgcctt ggcctcccaa agtgctggga ttacaggcgt
226751 gagccactgc gcccggcctg aagttttata tataatacaa ggagagcgca
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226851 attgtatggt ttctcatcaa gcatttttac ccttcaagtt ttatctataa
226901 gtctagtgta agactggggg atatttctaa gttgtggttt gatgagtccc
226951 tgacttcaaa cccaactggt acatcacaaa ataacaatgc tctgtagtca
227001 ccaaaatctt tagatctacc tgaatggatg tggacctatc tcctagatag
227051 attaggtgga aaacagtatt tattacatta tcatttgtgt aaaagggaaa
227101 aagagcttga atatgcacag aacatgtttg aatctataac agattggtat
227151 agagatagaa aggagactca catttcacca tatacctttt ggttgtagtt
227201 ttggcatttt aataatgtgc acgaatcatc tattcaaaaa atttatttta
227251 aaaaacctga agaaagcact ttagtagaga atcaatactg tctgattgat
227301 tgattgatcg gcctcagctt tccaaggagt tattgtagat ggaaagtgaa
227351 gaagggtatg cttttacagg agtatattta tgtcttaggg aaggcttgaa
227401 agccagaggg gatgacgata aagagagttt gaacagatac ccagaaacaa
227451 ctgcacttga aagaacttgt gaaatgctta agttctctga cacttagaga
227501 attataccct agctgtgata ccattatgag atgtgagagt gtgcttgttt
227551 agaaagcacc ggaacttgac ttcaggttct ggagccagcc aaagagtctc
227601 ctctctctgt ctggaagggt tgtgtcaaat tcatgcacat tctcaacaat
227651 gactgtcttt ttctaatggg ggatggggag aaagggcaaa tattcaaagc
227701 caggcaaagg tgggggcgga gtcaggaggc ttttggactt tgacaccttа
227751 tctctgtttt tgccatctta ctggggagtg gggaacagag aagagcttgg
227801 tttattctca gggaaatgtc tggagactgc cccatggcct caggtcaccc
227851 tgaatttagg atttagttct aataaaattt tattctggga tgcaacctcc
227901 ctctagttgt taagacttct ggttgtccag tctagaatcc atatgaaagc
227951 caagcttacc atattaaagc caagcttacc aatgacttcc aataaaaaga
228001 gcttagaatg gaagaaaaga gataaagaga aaaagagaaa gatgatcttt
228051 agttaaagcc aaatcactga tcacttatgg caggcccttc actttatctc
228101 tcctttcatc caccttccct atcaacagca cttctagtga ggtggcattt
228151 tggagtggga aagacctagg tttgaatccc agctctgcca tattagtgga
228201 ataacctcgg gcaaattaca taaatgctct gaaccaatgt cctctttggt
228251 aatgtgggac actggtggct actttagtct taagttagga tcaagtgaga
228301 gcatttatac aatacaataa gcatttttg agtgcctatc atgtgatagt
228351 gagatagaag accagcagaa cttgctttct ggtcacaatc ccgctgacca
228401 aaacagaatc tagtccagac aagataaagt gaagagcctg gccaaaacca
228451 gcagatggtg acaaaagcaa tccctagctg ccctcattgc tcattagcat
228501 aagacactcc caccagtgcc gtgacaagtt acaaatgcca tgccaacaac
228551 cccgaagtta ccacccttt ctctggcaat gccccagaag tcactgactc
228601 tttcctagaa agctttaaat aacccacccc tcaatttgca ttaaccctcc
228651 ccttaatttt tcaaatagtt gaaagtgaat ataagtgagt ataagtacag
228701 ttgctgacag cccatacctt gctgattcta ggcgcactgc ctgtgagtta
228751 gccctgctcc acaagaagca gtactgttca ggaaaaggtt gctgtctaaa
228801 accactggct tgcccttgaa ttctttcctg ggcaaagcca agaacccttc
228851 tgggctaagc ctcaatcttg gggctcacct gttctgcatc atctggtggc
228901 cacaaaggga tgaagatagt gagtgggagg aagtgaccaa tgtggcgtcg
228951 agacagcaga aatggcagtc atcagcggca agatggcaag acaatagcaa
```

FIG. 7 CONT'D

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229001 ttagcaaaga ggccaaatga taagaaatac ttgagagatg gagaaatggt
229051 gagacagcaa gatggcaaga cagtgaccag tgagatggtg agaggcggca
229101 atcagagaga ggtggtgatg tggcagtcag tcagtgctgt aaggatcaaa
229151 gctgcagaga gctggaacac taaccaaagg ttcttttcag gaccatcatc
229201 tttcctggca gatggttgag ctgagtggat aggtgagtag ccatagtgca
229251 gggattcaaa gctctggctg ggaggctgca ggatcacatg ccaattccct
229301 cgcagcaacc aagcctgccc aagccgggga aacctgggga gcaaaccttc
229351 acctgcactg tacatcagag accagttggc cctattttgg ctcctgtgga
229401 caggtaagta tccctttga ctcatccccc aaatatcagg tgagccagga
229451 aaataaggcc tttggcttag acagtcaatt caaagtctgc catagcatcc
229501 ctaattacat ccctattgcc ccttttctag gtcgtttctc ctctaacacg
229551 attttatttt tctgtcagcc attttatttt atttctcacc ttgaaatata
229601 tgttttcttt gcagtttttg ctttggcttc ctgctaactc tatttgggca
229651 attgtttaag gctgaacact tggttatgag aggtaccctg ttgtgttgac
229701 cctgggatgc cagagtcatg ttgttctgtg gccccaactt ggtctttggc
229751 cgcccccctgg atgctctggg atttttggca ttgggtgtgg ggactctcat
229801 tggccactac tcggttactg tgggttttca gcatttggta ttgttggccg
229851 ccccaggcac tcccgggttt ttggcattgg cattcactag gattgtgggg
229901 taggagccta cctaagggga atcttggtct tgccttttct cattttctac
229951 cctaaagtta tcgtttccca taacagcatt tccttttgtt attgccactt
230001 tatttacact tttcccacta taacttgctt aatgaaaata cttcttttgt
230051 cacatttcat tcactttata agccactttc ataacacgtt gctacctata
230101 cttactcctt ctctgcagga agtggaaatt ggaaaggaaa atagaaaggg
230151 ccccgttgct ttccctctca ctagactcag aagaacttct atgtccagta
230201 gaaatcatcg ttagacatgg agacaatgat aagcatacct gaggactcac
230251 cgttaggatg cctttcaggc tattggagca aattcaattt tggcttaaag
230301 aaaaagaaac tcatttccta ttgcaacacc acttgggtcc aatacaaatg
230351 agaagaccaa gacatttagc ctaaacatgg ttctatgcat tataatgcta
230401 ttttacaatt aacattaaaa agaaggaaaa tgggacgagg tcccttatgt
230451 acaggctttt atggcccttt actgactcaa tgttacttca aggcaccagg
230501 aagccacgcc taagggatcc cctcctagct gcttctctta gaaggcctac
230551 tccctcccca gagcctcctc agtctcccaa tttggagggg ttcctgccag
230601 ttctctaaca caggactcca cccaaggtca tcaggcactc ctccctgtta
230651 ttcagctagc cccagcctaa accctctgct gtcggaaaaa gtagcccaac
230701 cagtatccct agaaatgggg ctccatatca gcccctgaag tcaaagctgt
230751 gtccattgtg ggaggtagtt gatggagatg gggggacact tagaatacac
230801 atgccatttt ctatgtctga tttggctcta tgcaaggaaa aattctgcca
230851 gttttcagag aattcattaa agtttataga agagtttgtt aaattgacca
230901 tgttctttag cttggtatga cttgcaagca ttgttgccca cttgctatgc
230951 catagagaaa aagcagagga aagtgtgtgg ctaagcctct cagttatgaa
231001 aaggttagag atgtaattca gggtaaagat gaaaatctca ctctttctgg
231051 gtagtttggt ggaggaactc aagaaatata ctaatacaga ctcagactgc
231101 ctggaagggc aagctctcct gggtaggcat tttattattc aatttgctct
231151 gacattagga ggaagctaca caaagtagca gtgagacctc aatccgctat
231201 gaaccaagcc ttaaacatgg cctttaaaat ttataacaat agagacaggg
231251 caaaaatgga aaagaccaaa agaaataacc aaaaagaaca attattggtg
231301 atgctgtaag caccccttcaa cctcagggtt acccatcccc agaaagtgtc
231351 tcgacattgg tgtctgggat acctagacaa gagccccaac ttgctagccc
231401 ccaggacaga atcagtatgc ctactataag caaaagggta atcagcaata
231451 agaatgtctt aatcatccct cctgagatga aaaagctccc tgtccatgtt
231501 agaactaacc ttcttccact agccccaaca agctgccttg ctcaagtaag
231551 ccagagcttt gaaaccctgc gctatggctg ctcatctatc cactcagctc
231601 caccatctgc caggaaagat gatggtcctg aaaagaacct ttggatcaaa
231651 tcccggaccc ttgatccaat ggttagcttc ccacagtggc agacaagtag
231701 ccacccaaac attcttcttc cgtgtctctg ctgctgggtg acctctctag
231751 cagctcaggg actctgaggt ctcccccttta gcaatgggct ttgccccttc
231801 ctttccttat ttgatgctac aagatcccct tccctgcctc ttcctgtctt
231851 ccatacctat tggagcaaac gatatttggc caggtagaca ggtcccaatt
```

FIG. 7 CONT'D

231901 ttgtaaataa cagatccagc tgtcttgtat aggtcacttc atttgtgtga
231951 tgtgtgttgt gtctagcatg ctatcaaatt ggttcatagg ctgggcacag
232001 tggctcaggc ctgtaatccc agcattttag gaggctgagg caggtggatt
232051 acctcagatc aggagttcga gaccagcctg gccaacatgg tgaaacctca
232101 cctctactaa aagcacggaa attagctggg tgtggtggcg tgcacctgta
232151 atcccagcta ctctggaggc tgaggcagga gaatcacttg aacctgggag
232201 gcagaggttc cagtgagcag agatcatccc gttgcactcc agcctgggga
232251 acaagagtga aactccatct cggaaacaaa aataagacaa aacaaaacaa
232301 aacaaaacca aaacattggc ttataaataa aagagcactc ataaattaaa
232351 caaataggac taaatttgtt agtttgaagg gaatattgtg acttctaaaa
232401 tttaacttta agctttttac ttagataaaa tactaatttt cataggcttt
232451 agaatggtta aaatggcttt aaatgttgaa ctttttgtgt agtttaaaat
232501 cttaagattg gctgggcatg gtggctaaca cctgtaatcc cagcactttg
232551 ggaggccaac gcaggcagat tgcttgagca ggagtttgag accagcctga
232601 gtaacatgat gaaatcccat ctctacaaaa aatacaaaaa ttagctggat
232651 atggtggcat gcacctgtaa tcccagatac ttgggaggct gacatgggag
232701 gatcgcttga gcccaggaag tggagattgc agtgagctga gactgtacca
232751 ctccacccca gcctgggtga cagtgagacc ctgtctcaaa atcaatcaat
232801 caatcaatca atcaatcaat caatcaatct taaaattata gagtggttct
232851 catctataga atgtcaatat ctgatagttc aggattcttt gctttctaaa
232901 tttatatata atgtaccagg gaagatatat attctttatt gtgaaaaaga
232951 ataacttgtt caattcagaa attattaaaa gggaggttca aaatataaag
233001 gaatctgcga ataaaaaaga gagatatgtg gtgagttatg gatagaagac
233051 ttttttttt tggtggggtg gaatatatat atttttaaat gatcttgtgt
233101 aacgagaaat cttgtgtggt agattcttgt actagaataa agtcactggt
233151 gtttgggagg gaggtgacgt aggatgggtc agagggtcca gacatgtcat
233201 ggacggtctg tgtgggctgt gaggggctca tgaaggggaa tttgtgaggg
233251 gagttaagtg tttgactaag ctggctatga ttgatgggaa attgtttgtg
233301 gtagactttc tagaaaatga tctatgtgcc aagcgcagtg gctgacacct
233351 gtaatgccag tactttggga ggccaaggtg ggcagatcac ctgaggtcag
233401 gagttccaga ccagcctggc caatatggtg aaaccccgta tctactaaaa
233451 acacaaaaat tagctgggcg tggtggtgtg agcctgtaat cccagctact
233501 cgggagactg aggaggagaa tcgcttgaac caggaaggca gaggttcgag
233551 cagtgagcca agatcgtgcc attgcactcc agcctgtgtg acaagagtaa
233601 gactctgtct caagaaaagg aaaagaaaaa aaaaaaaaaa agcctatgtg
233651 ttgaaactgg gttttcttta ggtgttcatt tgctaaatta ccagaacttt
233701 tgcttttcca ttctgtgata tatttctttt gaaagctttt caaatttgtg
233751 taactctctc cttcagcttt ttcatcagct cctgtgactt tttctcctgc
233801 agttctgaca gttgctgtga tctgatgcta aagtgttttc ttagaggtct
233851 gcgggaccag tgtttttcct gaatacagct taattctatg ctcgtggttt
233901 tccttgaata taactttatt tttggctttt agtttttgac tctcttttte
233951 ttttcttttt ttttttttte gagacggagt ctcactttgt caccaggctg
234001 gagtacagtg gcttgatctc ggctcactgc aatctctgac tccctggttc
234051 aagcaattct cctgcctcag cctcccgagt agctgggatt acatgcgcat
234101 gccaccacgc ccggctaatt tttgtatttt tagtagagat ggggtttcac
234151 catgttgatc aggatggtct caatctcctg acctcgtgat ccacccgcct
234201 cggcctccca aagtgctggg attacaggag tgaaccacca cgcctggcca
234251 gtttttgact cttatattgc ttaaaagggc tttgagggct aatgaataca
234301 tgcccacctc cacttctatc tggcctagaa tgtttaattg gctacaagtc
234351 attggactct aagtctgctg gccaaagaga atccctcccc ctgccaaaaa
234401 aatggaaaaa gtaactcagg ccatgacagg aaacagggag tcagctgcct
234451 cactatgcct ttcccttgga atttaggcca ggttcaaaag gtctttaaaa
234501 attttgaaaa taaagtattg gcctttccca cagagaaaaa taaatagctc
234551 ctcggttcaa tcagaagact tagtgttact aaaaacttca aaaaaagatc
234601 ccctgatcat cagttaaaac caaaatggaa gggccccttc aggtattgat
234651 aaatactgtc actgctgtta agcttcagag agtcactagc tgtgtacacc
234701 tgtccaggat taaacctgtg tcttatgagt tccccatggg cataaaagga
234751 gcacaccaca acctacattt atgaacctag aaacttaagg ctgttgtttt

FIG. 7 CONT'D

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234801 gcaagcacat agataaataa caggatgctg tgggtggggg taggagcatt
234851 aatttttctc ttcctcctaa ttgtaatttt cttgtttagc ctccctcgta
234901 aactttgtat cttctagatt ccacataaag atgatgccag cacaaggctt
234951 ccaactcatc cggtctttgg acctggaaaa gaaaaacatc ctgccattgg
235001 gcctcttagg tcaggtatcc agagactttt acactgccaa tactaggcgg
235051 ggtctatgcc cataaaatca gcaagaagta gttacagaag atggaccttc
235101 acccctctgc agccccctta agattaggag gctttggcca gacacagtgg
235151 ctcatgcctg taatcccagc actttgggag gctgaggcag gtggatcaac
235201 tgaggccagg agttcgagac cagcctggcc aagatggcaa aaccccatct
235251 ctactaaaag tacaaaaatc agccgggtgt agtggtgctc gcctgtaatc
235301 ccagctactt gggaggctga ggcaggagaa ttgcttgaac ccaggaggca
235351 gaggttgcag tgagccgaga ttgtaccact gcactccagc ctgggcaaca
235401 agagcaaaac tccatctcaa aaaaaaaaaa aaaaaaaaaa tcaggaagtg
235451 tatctaattt ctaaggggga agtgaggtag gagactgata ggacttgttt
235501 tctggtcaca accctgctga cgaaaatagg atctagttca gacaggataa
235551 tgtgaagaaa ctggccaaaa ccagcagatg gcaacaaaag tgctccctac
235601 ctgccctcct tgcttattag tgtgagacac tcccactagt gccatgacag
235651 tttataaata ccatggcaat gacccagaag ttaccatccc tttccaagaa
235701 gttctaaata acccatctca ttttgcatta acctttcctt aatttgcata
235751 tacttaaaag tgggcataag tgagtataaa tacagtttcc aagtgcccat
235801 atgttgctga ctctgggtgc actgcctatg aattcgccct gctctgcaag
235851 aagcagtacc attcaataaa agattgctgt ctaacaccac cagctcatct
235901 ttgaattttt tcctgggtga ggtcaataat tctccaaggc taagccccag
235951 tctaggggct gtttggtgga tcattgagcc cagcagtttg acaccagcat
236001 ggaccacatg gcgaagcccc atctctacaa aaaaaataca aaaactagcc
236051 aagtgtggtg gtgcatgcct gtagtcccag ctacttggga ggctgaggca
236101 ggaggatcac ctgactacag gagggtcgaa gctgcagtga gccatgatcg
236151 tgccactgca ctccagcctg ggcgacggag tgagatgctg tctcaaaaaa
236201 aaaaaaaaaa aaaaaagtgg ccgggcaggg tggctcaaac ctgtaatccc
236251 aggactttgg gaggctgagg cgggcagatc acctgaggtt agggttcaag
236301 accagcctgg ccaacatgac taaaccccat ctctactaaa agtacaaaaa
236351 ttagccgggc gtggtaacat gtgcctgtaa tctcagctat tcaggaggtt
236401 gaggcaggag aattgcttga acccgggtgg tggaggttgc agtgagccta
236451 tatcgtttca ttgcactcca gcctgggcaa caagagcgag actccatctc
236501 aaaaacaaac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aggaaaagaa
236551 aaaaatggat aagggaatcc ttgtgctaaa gggtgtcaga gacaatctga
236601 gaggtaaatg ctacgctatg gactaacagt aaggggaaaa gaagatggta
236651 aatttgcaga gaagatcaag tttgatcagt ttcctggcct gaaggtagga
236701 caatgacaaa ggctcatttt aggggcttct ggtatacaaa ggtgtagggg
236751 cactacaaaa aagtcattct gacacttgtt gaaatgctat aaggaagact
236801 ttatttaaga ctattgcaat aggagagaga gatcaggctc aactctgaac
236851 acagcttgga caaatggata cttatagtca aggagcagag tgacggggtt
236901 ggtgggtgaa aaattactag gaggagacat caagggtaga gagattcttg
236951 ctaaactgaa ctagcaggat tctcactgaa ggaaagccaa ggacttagac
237001 atcaaaggtg gaggatgagg aacttgctca ggtatcagtg gtgatcagac
237051 cacaaaatgg agggaattct ccctaaactg acttagcaat attcttgttc
237101 atactgggct aggcaggcca aagacaggac aggtgccaag gtcttagtgg
237151 agtctaagtg gagaagaagg ctcagaggag catgagtcag gtttggtcaa
237201 ggagagggtc tttgttggag ggggaaatta aatggtgtgg aggggaattt
237251 tagatggttc aacaaggagg caatgtagtg agtggcagca tgggagaact
237301 gaggctggag aagttctcag cccatgctgt tgcccctgtt ttgccccttc
237351 cctccctctc tcccacagga gcagttgact ggctgcctct tgctgtggtt
237401 cctgtgaaag gcggctttag tttggatctt cagtggggta aggggctctt
237451 gttcagaata gaggcttcca aatatgcatg aacggaagta acacaagcaa
237501 aatgcatggg acacagtagg tgtgcaatgc ctatgggtcc tcttctcttt
237551 ctcccactgc tccctttca gtgatgggcc cagaaaagct atagttctat
237601 accctgtaca catgctcgtc tctcactttg aggaagaaca attcccccaa
237651 acacttttaa aaaaacagta acatctagca ataaattaac aactggcaat
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FIG. 7 CONT'D

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237701 gaactgtttc ctgcaattta aattgtttct gaatgcagtg tcattaggtc
237751 ctggctgtag gctcttaggg actgcacacc tggaaggctg ctgggcagaa
237801 gtgtcataac ccatacccca agctcttcct tctctcaagt gtcacaatcg
237851 ttttgaacta tttggaattt ccacctattc ccccaaattg gcagcctctc
237901 ctgactttta tagcttttga attttgtaca aagtgcatgt gttaactatt
237951 taaattttta tattttcaaa aaacgatgat ctctgttaca gcagctaaag
238001 tggattttcc ccaccccagt aactcaccac atttccctat tttatcttct
238051 tagtagtact tgccagcata ttgtttttat actgtgccca gtctccctcc
238101 actaaaccat aatctcctcc agccaatact ctgacttgtt ctctatgaaa
238151 tctctaatat ctagagtatt tattttcctt ccttttctct tctcttcttt
238201 ctttttttcc tgttagtatc ttatttagat ttgtagattg agatgccttc
238251 atacaatgtt ttagagattt ttagtggttt ttttcctata gcctgaaaga
238301 gtttacataa cagaaattat ctattcataa agcaatgcta ctcaaaatgt
238351 gttctgcagg cactaaagta taaatcaaac atactattta gctcgaatgt
238401 actatttagc tgagttttgt tttttgtttt ttagcaaaga ctttgttgat
238451 gaaggaagca atatactgat ttatgttcca gtgcaagctc cttaactttt
238501 tgcgggctgg tagcaaacag ttctgtaacc agctgagtag cactgcggta
238551 aagggtaaca gaatacagat acaaaaccac cagagactgg tgctttttca
238601 actgttagat ttaaattgcc tttctagtct cttccgtggg cattgatctg
238651 tttagatttt cttcctttac ttggctcaat tttgctaagt tatattttac
238701 tagaaagcta tcaatttcct ctattttcag atacatttct agagttgcac
238751 agaatagttt cttttagttc tctttatctc ttccatatct gttttggatc
238801 ctcaggagta aatagaggaa catgcagtaa aaaaagattg agaaaagatg
238851 caaaaagatt agagtgcaac caggaaaggt cagtattatt ctagtcactg
238901 gagatgcaaa aatatgcaaa ttctcgaggg gcttcatatt ttatctcttt
238951 taattatcct gaaatagttt tattattaat tgctttttga agaagtagat
239001 attgcctatt aaattatcta cttagagact ggtcagagtt tcatgttctt
239051 tttttgttac ttgttttgtt tcaaaatttt ttatttaatt atttttattt
239101 ttattttaca ggtgcccacc accatgccca gctaattttt gtatttttag
239151 tagagacggg gtttcaccat attggtcaga ctggtctcaa actcctgacc
239201 accaggtgat ccacccgcct cagcctccca aagtgctggg attacaggcg
239251 tgagccactg cacccagcct tcattgttat atgttcatta tatcacttat
239301 aatgtattat gtttataaca tataatgttt gtaagtatta ttgataggtt
239351 tggctgtgtc ctcacccaaa tctcatcttg aactgtaggt ctcataattt
239401 ccacatgtca tgggagggag ggggactcag tgggaggtaa ttgaatcacg
239451 ggggcgggtt ttcccatgct gttctagtga tagtgaataa gtctcataag
239501 atctgacggt tttacaaagg gcagttctcc tacacatgct ctcttgcctg
239551 ccaccatgta agacgtgcct ttgcttctcc ttcaccttcc accatgattg
239601 tgaggcctcc ccagccatgt agaacggtga gattaaacct cctttctttt
239651 ataaattacc cagtctgggg tatttcttca tagcagtgtg agaaccgact
239701 aatacaatta tgttcttgat gttcattcaa gtataaaaag tgcatccctt
239751 tgggttctca tcctatttct gccactgact gctaagtgat cctgggcaag
239801 ttcctcaggc tctctgaacc ttataagctg caagattgag aggttgctct
239851 agataacaat agctaaaatt tatcaactgc ttactgtgta ctaaatactg
239901 acctaagtgc tttacatgaa taatttcatt taatctctat gaattaggta
239951 ctattatttc tttcatttta cagatgagga aactgaggcc cagaaaactt
240001 gctgatgttt cctgaaaaaa tagaatctaa gtcaatgctc ttgggaggtg
240051 caattctagg gatgtgggag tgaggggtag ggggagtgag gcagggaaga
240101 tgggaagcaa atgcaaggcg atgagtttcc acactggcta ccactttact
240151 gtgagccatg aagcagcaca cctggtctca tggcaggaat ggcttcttgg
240201 ccttagggaa cactggctgc gtggaaaaac cacacctcag aatgatccat
240251 gggagaggaa aggggagagg gagtttgctg ccatctctcc cctgtctctt
240301 gtctctactg gcccaagttt gtcccatagg gagtcgagaa tgccttcctc
240351 ctgggtggtg tcatgcagcc tctttagcag gcgctgggga agttagttcc
240401 caggccttgt gggttggctg ttcatctgag tctggaagtg gttggaggag
240451 ccataacccc agatagggag caggtgtgtg ggccacacac agtagctgag
240501 gcaaaacagg cagctgagga ggcagataag gctgagagaa gtctgatatt
240551 catggatggg tgtggtgagt agtcattgaa atgcagacaa ctgggctggg
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FIG. 7 CONT'D

```
240601 catggtggcc cacacctgta atcccagcac tttaggaggc cgaggcaagc
240651 ggatcacttg aggtcaagag ttcgcaacca gcctgggcaa catggtgaaa
240701 cctcatctct actaaaaatg caaaaattag cctggcatgg tggcgtgcgc
240751 ctgtaatccc actactcagg aggctgaggc aggaaaatca cttgaaccca
240801 ggaggaggag gctgcagtga gccaagatca agccactgcc ctccagcctg
240851 ggcaacagag caaggctcca tctcaaaaaa aaaaaaaaaa aaaaattgca
240901 gacaactgga ctctagggcc agaccactag caatatgctg cacatctctg
240951 agagccctta ggtatagaaa aaatattatt attatttttt gagacaggat
241001 ctcactttgt tgcccaggcg gagtgcagtg gtacgatcac agctcactgc
241051 agcttcgacc tctgggctca agtggactac aggcatgtac cagcatgcct
241101 ggctgatctt tttaattttt tgtagtgatg gagtcttgct atattttcca
241151 gggtggtctc gaactcctga gttcaagcga tcttcctgtc tcagccttcc
241201 aaagtgttgg aattacaggt gtgagtcact gtgcctgcca gaagaatgtt
241251 tatggtcagg tacatacagg cccagtcctt gttttctcag tgttcaagtc
241301 ttcaataata atatcccctc tgttatcttc ctagtgaaat cctattcctt
241351 tctcaaatcc tatttggata acaatttatc tccaagcctt taagactcaa
241401 tcactccatt ctctcaattg ttttggcacc ttgtgcatat ttctcttctt
241451 gcatacatga tatttattgt agcctatatt agagcaggct gtatgtttac
241501 taacggcagg aaccctattg tgttttcaga tcctgtaacc catgtctgcc
241551 tagagagagc ctttggtatg tgcctgcaga gctgaatgat agacaatttt
241601 acatttgtgg ccaggtgcag tggtttacgc ttataatccc agcgctttgg
241651 gaggctgagg tgggcggatc tcctgaggtc aggagtttga gaccaacctg
241701 gccgacatga caaaacccca tctctactaa aaatacaaag attagccggg
241751 tgttgttgtg ggagcctgta atcccagcta ctggggaggc tgaggtgggg
241801 agaatcactt gaacccagga ggtggaggtt gcggtgagct gaaatcacgt
241851 cactgcactc ctgcctgagt gacagagcga gactctgtct caaaaaaaaa
241901 aaaaaaatta catttgtgta ggtttaaaaa aaaaagttta aattttagaa
241951 cagttttaga tttacagaaa aattgcaaag atagcacaaa gagttcctat
242001 gtgctctgca cccagtgccc gtatgattcg tatctaacat tagtatggca
242051 catttggcac aattcataag ccaatatttg tacattataa ttaattaaag
242101 tccacactaa gtcaggtttt cttggttttt acctaatgtc ctttcttctg
242151 ttccaggatc ccacactaca tttacttgcc atgtctcctg agacccctct
242201 tggctgtgat ggtttctcag actttccttc tgtttaatga tcttgatagt
242251 tttgagtaat gctggttagg cattttgtag ggtgttcttc aattgtgatt
242301 tttctgatgt tcttgttctg atttgactgg ggttgatctg gggagtaaga
242351 ccagatagtt aaagtgccac tggggtcaca tcctatcaag ggtacgtact
242401 gtcaatatca cttaccatga tgatgttgac cttgatcacc tggctgaggt
242451 agtgtctgtc aggtttctcc actgtaaagt tgctcatttt ccccctttcc
242501 atattgtagg ctttggaaga aagtcactgt gtgcagccca cattttagga
242551 atggtggttt atattctatt tcctttaggg tggagtatca acatacattg
242601 tttggtattc ttctgccctg gggattcgtc tatcctttcc catgtattca
242651 gccatttatt tatatcagta tggactcatg gatatttgct ttatactttg
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242751 gagtctcgct ctgtcaccca cgctggagtg cagtggcaca atctcggctc
242801 actgcaacct ctgcctccca gggtcaagcg attctcctgc ctcaacctcc
242851 tgagtagctg ggactacagg tgcatgccac catgcctggc taatttttgt
242901 atttttagaa gagacagggt ttcgccatgt tggccaggca ggtcttgaac
242951 tcctgacctc aggtaatcca cccatcttgg tctcccaaag tgcggggatt
243001 acaggcgtga gtcactgcac ccggcctagt actgctttat tttgttgctc
243051 aaatgttccc agctctggcc attgggagct ctgtcagttg gtttctgtgt
243101 ccctttggca taccccaatc attgtggggg ggtttgggtt tgtttgggtt
243151 ttttaacact ttattacttt ctggcactaa agatgttcca ggctcacctt
243201 gtgtatttcc tgacccagtc ctagagtcag ccatttctcc aataagactt
243251 agttcctttt cgtgaagaat ggtattacaa accaagagct gggctctagg
243301 tgtgtcatta ccactggggt gtcattaatt ccaggccctc tcagctgaca
243351 gagcaggaaa atatatgtgt gtgtaatagt caggaaggtt cctttaatct
243401 tacaaagcac actttgaaaa attggaccaa tttagagttc tctggctgct
243451 cagtctcaat ctcttttgtt ttccttttcc cagtgcctgt tcctttgtgc
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FIG. 7 CONT'D

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243501 aagtccagac cggtttgtcc tcgcatccct tccttgccct tcctctgctc
243551 cacggcctcc tgcagggagc tgatccctga cgtctcctag gttcccaggt
243601 cagctggctg ctggctggac tctggccagg ccagcggtgc accagttgga
243651 ggtgggggca gcacttccag atgcagctcc agggcctgct ggacaggccc
243701 cctgtgattc tgccttcttc taggctgtag tgacatcacc cctgtccttt
243751 gtccctcctg cctggaggtg tcaatgactt ctgactgggg tctccctgcc
243801 cctcatgggc ttctcaactt cttctgtcac atatgtaacc atttctctga
243851 ataaattccc tttgtttaaa acagtgctac ctacttcccc ggtgggcctt
243901 ggacagaact gtcggtaggg agtttcatta ggaagggact ccaggaatgg
243951 cagtggtgtc tgagtaaaag caggatggag ggagagtgag tccaaggcag
244001 tattctcaag ccagtcactg ctgtgggccc taggaagcca ccccactggg
244051 gactctgagt cactggggag aacagccctc agcattgtct gacagcccca
244101 actgctcgag acgtgcccaa aggtgaggaa ctccctagta cttccaggtt
244151 ttcacacaaa tctgaatggc tcaatgggac cccacaggga tccccaggcc
244201 ccgatagatg ctagagattc gacaggaggc tgaggggagg gatggatggg
244251 gtatcagccg aacccactgc cacagcaata actgaagttt aaacaaaatg
244301 aaaaaggatg ggcagggggt gggagacagg cccagaggtg tctgggatgc
244351 tgagctcccc tctgctgggg cctttctcat ggctctcttt tcctctcagt
244401 cttcactctt tctgagcaat ctcttacaca ccccggggtt tcaacaacta
244451 tctacatgat atgggaggat cagagtttgc tttgtgcttt aaaaataaat
244501 ctattgaagc ccctgactgg ctttacttgc agaaattccc tttgcagaaa
244551 agagaggctt ccagacactt tgcctaacta aataagaaaa tggacagttt
244601 atataataat tgaattacat taatgaggtc attctcagca ggtatgtatg
244651 acaaggctgg ggagcaaatg caaccttcta gaaaaaccac agtggtggtc
244701 attttaagtg aagaaacaca ttctttgttt tgttttgttt cgtttttgag
244751 acaggggtgg gtctcactat gttgctcagg ctggtctcga gctcctgagc
244801 tcaagcgatc cgcccacctc agcctcccaa aattctggga ttacaggcgt
244851 gagctgccat gcctggccta agaaatacat ttttttttt ttttttttga
244901 gatggagtct cactctgtca cccaggctgg agtgcagtgg cgggacctcg
244951 gctcactgca actctcgggt taaagtgatt ctcctgcctc agccttctga
245001 gtagctggga ccacaggcgc ctgccagcac gcccggctaa ttttttgtat
245051 ttttagtaga gacggggttt caccatgtta gccaggatgg tctcaatctc
245101 ctgacctcat gatctgccag cctcggcctc ccaaagtgct gtgattacag
245151 gcgtgagcca ccgtgcccgg ccaagaaata cattctttac cacaaacatt
245201 tcaacaaatg caattttctc taacaaatat gcatagtttc aagattacaa
245251 gtcaactgtc cttggaagag aactattgaa attaaactct atgacaagaa
245301 ggctttttgc ccttctaagt accagaaacc caactacatg atgtccaact
245351 acagaaagag tacagactta acttaaatat tatggtaagc aatacataaa
245401 tattcgctaa ccttcccccc tcatctccac gtgcacagtc atcgctttgg
245451 atcctcaaag cggttgtgtt ttggttttct tttttcactc agagtttctc
245501 gttaagtgtc actgaaactt gtggcataag atcgatcaac ggtattaacc
245551 cgaattgaat caaagcagat aaaacagctt gggcaacggc tgttttagcc
245601 ctttaaagat tccaaatctg gccttgttcc ccatcccaaa tggaagctgc
245651 tgacgctgga gactgtggag agaaaagggt ggggcccagc acaggggccc
245701 aaggggttca acaagccaag gtgccaggtg gtggctcagg gactcacggg
245751 gcagacagtg tttgttattt attttaatta atggcctaca cttaaaagga
245801 gtttcataag taaacttctg gcttctctag aaaaaatgga tagctctttc
245851 tttcacccct ggaccggcaa tttcacatgc caatggcagc agccgggcag
245901 tggtggcccc ttagacctca tacacgctca ctctcttttt ggagaggaga
245951 gtcactgtca ctgtcttgtg gccatttcac ttattcatgc ctgggctggc
246001 tcctgcagac attggtggta aagagatcag agggtgtggc caaattccag
246051 agtggctcta agaacagatc aaaggacaca cacatacaca cacacacaca
246101 cacacacaca cacacagctt tgcatctaag ctccatccac agtgaagttc
246151 ccccagttcc tctcaccttg tctcctctca gcctttgctc aagctgtttt
246201 atctgccaga aacacgctcc tctactgtcc cctgcccacc tggtcacgtt
246251 ctattcaacc ttcatgatgt cacctctaca ggaagcctcc cggcccccca
246301 gtgaaggttc agatggatgt cagagagacc caaagtaaca gcaacttaaa
246351 aaaaaggcag acctttaatt ctttttcaag ggagagtcct gcccagtgaa
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FIG. 7 CONT'D

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246401 ggccctccca gtgcctggac tcttctatgt gccgacctat ccgtgaggca
246451 cagcagacac agtgcctagg acccacgaaa atgttttaat ttcatttaga
246501 atcaggagga aaaaaagaat ataatgataa atccagcctg aattattttt
246551 gccgttttac taatacagta gtaaaatata atttaacaga agaaggggcc
246601 cacaaaggca aaggtgctta gggttcccaa aagtcataat gcaggccagg
246651 cacggtggct cacacctata atcccaacac tttgggaggc aatggtgggt
246701 ggatcacttt aggtcaggag ttccagacca gcctgggcaa cacggtgaga
246751 tcccgtctct aatacaatta caaaaattat ctgggtatgg tggcacgcgc
246801 ctataatccc agctgtttag gaggctaagg caggagtatc acttgaacct
246851 gggaggcaaa ggttgcagtg agctgagatc tcatcacagc actccagcct
246901 actgggcgac agagcaagac tccgtctcaa aaagaaagtc atcatgcagc
246951 cctgggtggt tactctcatc tatgtggtcc acgctggctc agcagtacaa
247001 tggagggaga gaacaaggaa ggaggggata ggacatttct ctttaagggt
247051 ttaatttggg agttgcacat actatttttc cactcaaccc attgtctgaa
247101 ccttaatctc atggccacac ccacctatag aggaggctga aaatgctgtc
247151 tttattttgg attgtcgtgt gcccaaataa aaagtgtatc gcaatgtgag
247201 aaggagaggg ccgctattgg gagaactagt tccctctgct aagtgacctt
247251 tctagttgct ttcatggctc caagagggag caggcagaag ctgcaatgtc
247301 cttgatgatc taacttcaga agccacatgc cattgtttcc acaatcctat
247351 tggtgacaca caggccaagc ccatcctgtg taggagggcc ccacgccagg
247401 catgaatata gggaggggag aatcactgaa ggccatctgg tgactttcta
247451 atgtctggga ggcccctgtg aacttcctgt gtgggattca gtgagaccct
247501 ccttgctctt agaagagtgg ccccccctct ttttacttgt gtctattaag
247551 tgcatttcta tgtccttgga gcagacagac cctaagaaag cgatgaaggg
247601 agaaaaagac actattattg gtcccatcgc ctgttagcaa atacaggggt
247651 ctctgtggcc ttgtcttctt ggtagcctgg tgtttcttcc tggtatgtgg
247701 cattccaagc tggcccccac tcatctgcac aacaagagtg agcatcaggc
247751 ctcagggata tggccccaga cagaacaaag tccctgctcc ctggaacttt
247801 ccctcagtaa ggagagacag acaccaaaga aacacagggc gtaccagatg
247851 gtggtgttat aaacataatt aaagctgaat aagtatgtgt gtgctatttt
247901 acagaaggtg tgagggaagg cccctctgca gaggtgacat ttgcaccaag
247951 acctaaatga agagaggaag tgaaccataa gaatatggga ggagggccag
248001 gtgcagtggc tcacgcctgt aatcccagca ctttgggagg ccgaggcagg
248051 tggatcgcct gaggttggga gttcaaggcc agcttggcca acatagggtg
248101 accccatctc tactaaaaat acaaaaaatt cgccaggcat ggtggcatgt
248151 gtctgtagtc atatatatat ttatacatgt agtcatatat atttccttcc
248201 atatggaagg aaaaaagtct gcaggaattt cacagtgaag aaatggacag
248251 gaggactgaa tgcaagatca ggagagagtc tttcaagaca ggactagaac
248301 aagatgggac tagaacgtgt ctatagccaa ggagcaactc gtgattcagg
248351 gaagcagaag agaggtgaaa tccagagacc aatgaaacga aatggcctct
248401 gactagagct gagccccatc tcccattgta ttaatagcag gaggggctg
248451 ggcacggtgg ctcacgcctg taatcctagc actttgggag gccaaggcag
248501 gtggattact tgaggtcagg agttcaagac caccccggcc aacatggtga
248551 aaccctgtct ctactaaaaa tacaaaaatt agccgggtgt gatggtgggc
248601 acccagctac tcaggggct gaggaaggag aattgcctga atcagggaga
248651 caaggttgca gtgagccgag attgtgccac tacactccag cctgggtgac
248701 agagtgagac tctgtctcaa aaaaaaaaaa aagaaataaa taacaggagg
248751 gaaggcagga tgtggatgca gatggaagca ggttggagat gtggtgactg
248801 gaaggcgaag gggtttcgtg tgactgcttc tggtttctca atggagtgtg
248851 aggctcaggg tgatggccac aggggttcag aagatttgag ggggaaagaa
248901 aaagatgaga atgaatgact gtcctgatga tccaaaaaac aaaccactag
248951 ggcagtgctt ctaaacttta attgtggaaa tgaatcatct ggacgcctgg
249001 ggaccttgtt acaatgcaga ttcagattca gtaggtctgg gtggggcctg
249051 gcctcctgca tttgtaacaa actccccagt gatgcctgtg ctgttggtcc
249101 agcaccacgt tttggttagg aagggaagtg ctatggtttg aatgtgtctt
249151 ctccaaaatt catgttaaaa tttaatcccc agtgcaacag tattgaggtg
249201 aggcctacag gaggtggtta agtcatgggg gctcagccct catatggatg
249251 agattcatag ccttataaaa gggctggagg gaactagctg ggtccttttg
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FIG. 7 CONT'D

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249301 cccttctgcc ttctccatgt gaggacacag cattcatccc ctctaaacga
249351 tgcagcaacg agggatggtg atgttggaag cagagacagc tgctttcacc
249401 agacactgaa cttgccgatg ccttgatctt ggacttcgca gccttcagaa
249451 ccgtgagata aattcctatg acttatcaat cacccagtct gtggtatttt
249501 tttatagcag cacaaacaga ctaacacaag aggtggatag gatttgcgag
249551 catggacctt ggaggtttgt ggcctcaatt taaagtgagt acattcaccc
249601 agctggtgtt tttctcttgc tgcttgggca cagagatgga gtaaatgggt
249651 ctaatcaagg ataaagggag agccaaagag atagtaatat ttgaaaggaa
249701 gtgtttttaa tgatgtgcca tgtaatctga gctgggtcag gaatgaagtg
249751 aaaaactaag agatgatgga tgatgatagg ggctgtgaaa ggaaaacaaa
249801 tcttggggcc cccaaatcac taagctaaag gagaaagtca agctgggaac
249851 tgtttagggc aatcctgcct cccattttat tcaaagtcac ccctctgctc
249901 actgagatga atgcatatct gatctaatca gaaactcaaa agaatgcaac
249951 catttgtctc ttatctacct atggcttgga agccctctcc ccactttgag
250001 ttgtgctgcc tttgcttcga gttgtcctgc ctttctgaac caaaccaatg
250051 ttcatcttat gtatgttgat cgatgtctca tgcctcccta aaatgtataa
250101 aaccagtttg tgctcagacc accttaagca catgtcatca ggacctcctg
250151 aggctgtgtc catgtgtgca tccttaactc tggcaaaatt aacttcctaa
250201 attgactgag acctgttcac aaggccaatg aatcatggtt cttcataaga
250251 ttaaataatt gctggtgtgg aagcattaga gccactaaac tggaaagaga
250301 ggacaaggtg gtcaggaagt gaggcgcttg aaagtgagaa taaggggcga
250351 cacggtcatt ggcgatgaca aggtcaagca agtgacctcc agagtaggag
250401 gctcaagatc atttgaggca caaaggtcaa ggaacggaga ggccaaggtg
250451 tcagacggat cactctccaa agagtgacac tagtagatgg tcaaaatgaa
250501 agcagtgagc ccaatgctca agtctgtaag ggacaaggag gaatgaccag
250551 ggtactggca ggtgacagta accaggaggg aggcaggatt ttagtctgat
250601 gacatgaatt tcaagagagc tttgtgcagc atctacaagg cactgggaca
250651 gaagacagac atagtctccc tcctaagtga agtgggttag gcaaggaagg
250701 gttctaggca aggaagttac atgatccagc tagattttga aaagatctct
250751 tggactactg tatagagaat ggattggagg gaggttcggt ggcattagga
250801 ggctattaca gttacttaga ctgaggttgt caaagggtgg accccagacc
250851 agcagcatca gcatcactga gaacttgcta gaaatgtaca ttttggggtc
250901 ccacctcaga tctactgagt cagaaactcg gggtgggggc cctgccattg
250951 gagttttaac aagctccccc agtgattctg atgcaagctg aagtcaaacg
251001 aaaatggtca cagaattatg gcagtcgaga gggagtggat gaagctacag
251051 cttgttaggg gaagaataag gacagggtag caaagtgtag cagggaagga
251101 gtgggaagca ccaggtttct gggaggagga agtggactgt tgggagtttc
251151 ctgtacccca aaggcacggg gaaggctgga ggaggagccg aggggcaggg
251201 caagatcaag agtttggttc tgtccgcagc atggggcaca tgtgttccag
251251 agaagctggc tggaaagtaa cgctgtgggc aagaactata ttccgccgta
251301 gttcccagga gaaatgcaag acatgctcct ggaggaaagc tgcgctgatg
251351 gctctgggac atgtcgtgac aatgacacac agtggctctc tgtggtccag
251401 ttaagcttgc caatattaca cacttgcaat tgagggcatg gtggaaagca
251451 cactgagctt ggaatccaga ggaatcagcc cctggggtta agtcttttcc
251501 caccagtcat ttcacctctg tgagcctgtt tctacatttc tttgttttta
251551 ttttatttta ttacttattt attttgtttc tgatttttt ttttttttt
251601 gagacagagt ctcactctgt tgcccaggct ggagtgcagt ggcatgatct
251651 ccgctcattg caacctctgc ctcctggctt caagcaattc tctgcctcag
251701 cctcctgtgt agctgggatt acaggcacct gccaccctgc ccggctaatt
251751 ttttcgtatt tttagtagag atggggtttc accatcttgg ccaggctgga
251801 cttaaactcc tgaccttgtg atacacccac ctctgcctcc caaagtgctg
251851 ggattacagg cgtgagccac cgcacccagc cgtttctgca tgtcttaaca
251901 gggattatga tatctgcctg aactacttac agggtacact gttagagcca
251951 aatgagccaa tgcaaatcca aatttattga taattctaaa attgtttcaa
252001 tgtaagtgca gcagtattcc aaataatcta ataattattc taatattcta
252051 ttatcaaaac tgctttttt gctggtagct gcccacctgc tatcatgtga
252101 tggcagtaga aagacgacca atctctttaa acacactttc cttcctggtt
252151 atggccttca attcactgta tgaggtcaat cctttgactg aaacttttgc
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FIG. 7 CONT'D

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252201 ctataaaatt gcagtacacc tggaatggta acactacaaa aaatacctac
252251 cttttattta ctgtgtacta cgtgctggtg tttcatatcc actatttcat
252301 atgccttgaa ggagtcttgt gcactagata ttgctatgct cactttatag
252351 atgaggacat tgggctcaga gaccagggga cttacccaaa ttcatagagc
252401 tcgtggaggg cagagccagc acctgactgt ttgtgcctgc ctgtgatgct
252451 gtagtctccc tgctcttgca agcagctttg gatgggcagg gttagggcac
252501 cggtcatcaa gcctgggaaa agggagctta gctggacaag ggaaggatgc
252551 caaaggctgg ggcttaagga tcagattcag ttgaccctac ccaaggcaca
252601 ggaattgttc tatggacttt ctgctctgct cttatgactt ttattcacaa
252651 gcagctttct aatgtctcaa ccttccatgg cacccaatac tatttgctta
252701 gatatttggt ggtgaaatct ttcaacagaa atgatggaag aactaagggc
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252851 gcactttggg aggctgaggc aggcagatca cctgaggtca ggagttcaag
252901 accagcctgg ctaacatggt gaaaccctat gtctactgaa aatacaaaaa
252951 ttagccgggt gtggtggcag gcacctataa tcccagctac ttgggaggct
253001 gaggcaggag aattgcttga acctggaagg cagagcttgc agtgagccag
253051 gatcatgcca ctgtagtcca gcctgagtaa cagagtgaga ctcggtctca
253101 aaaaagcaaa acaaaacaaa agaacaaatg cacagagggg aggggaagga
253151 ggctgccaca gccctggggt ctcttttcca ggggtatttt ttttttttt
253201 ttttttgga gacggggtct cgctctgtct cccaggctgg agtgcagtgg
253251 cgcaatttcg gctcactgca cagccgcctc ctgggttcac gcgattctcc
253301 tgcctcagcc tcccgagtag ctgatactac aggcccggcc cccacccccg
253351 gctaattttg tttttgtatt tttagtagaa acgggtttcc ccgtgttagc
253401 caggacggtc tcgatcttct gatctcatga tccatccgcc tcagcctccc
253451 aaagtgctgg gattacaggc gtgagccacc gcgcccggcc caggggtctt
253501 aatacagttc attttgcaca cgaacagcat tatgccttgt gaactttggt
253551 gcaggcggga gagcgattag aggagtttca agactggtag tcgatgatac
253601 cagcatgtga catgagagat cggccgagcc aggaaggagc ccatgttcct
253651 tatctcatat acacagaaac caagggcctt gtccccaggc ccaggattgt
253701 ttagcacaac agaatcccag cctccccatg tgttactcaa tcgctttaat
253751 cctcttaaaa agaattgccg gccgggcgcg gtggctcacg cctgtaatcc
253801 cagcactttg ggaggccgag gcgggtggat cacgaggtga ggagatcgag
253851 agcatcctgg ctaatggtga aacccccttct ctactaaaaa tacaaaaaat
253901 tagctgggtg tggtggcggg cgcctataga gcaagactct gtcgaaaaaa
253951 aaaaaaaaaa aaaaaaaaag ggttttctga tcgtgctctt ggtaccagtt
254001 ctcctgagag tgagcttcac tgtgctggat cacaaatgtc cggtggaaag
254051 acatctagct ggggccatct ctccacagcc acagcacaga gccttgcatg
254101 agagggaggg agggagggat ggatgggtga ttgccggaag aagatgcaga
254151 atatcccctg gactgcctcc aaatacaagt tcagtgatat agaacttcaa
254201 attggttagt ttttctggca tgaaaggcta tgtcttgggg gaacacctct
254251 cccactgccc cgcagtgtag ataccagcag ccgagtacat gtagttacca
254301 ctgtttttgt tttttttat gggtcctggc tccttcaatg gagaggcagt
254351 aagcaattaa aacccgcttc taaaccatcc taagtactcc tttggagtgg
254401 ctgcaaaaat cgatcatcct cacggataca aaggggggaga aaagaaaaac
254451 aaaaggaatt actttaacat cttcattttc agactaggtt agggcagtaa
254501 aaaagatgac cagtggaggc aaacactggt ttagggctgt ggcagcggca
254551 gtggggttcc ggagagagaa gggagggtaa cagaggctct tctgatcctc
254601 cttgcttctg gggtctcttg ctgggcctct gagtaggtct gcaagtaggg
254651 ctgggcatcg gggctcattt tgaccacaag tgtttgctgg ttttggagtc
254701 aggcagacat gtgtcactgc ctggatttaa ttcccatagc tgtgtgaccc
254751 tcggccgttt gcttaatgtc tctgagcctt aatttactca cctgggagga
254801 acaataggac tgttcagagt aagtgaagta gcacactggg cgtcagggca
254851 cgttcggggc cgcgccggca cgcagagaac ctcgcccgct cggcattact
254901 gtctggaaac ggcttgcggg gacggtggag gataacaggg ggcgagcacc
254951 gcccgcagcc ggagtagccc tcgcgttttt tccttgacag cgcggccgag
255001 cgccgctgcg ggttgtggag actgtccgcc ctctagtggt cggcttcaaa
255051 agttgcttca aagacaaggc tgaatgaaaa gcgttggggc gccctaagcc
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FIG. 7 CONT'D

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255101 gatgcactgc atggaaaggg ggctaccttt ccctttccct ttactagagc
255151 ggacaaaggc tgttccatct tttttgggag ccatagaggg gatccggttg
255201 cactagcctg catcctcagg ctgctgaact gaccacggtg ggctaaactg
255251 gaaaagtttc tttgggcagg aaagactcag atttaacaaa catttactga
255301 gcacctacta cgttcctatc tctgtgcagg atgctttcac ttactttacc
255351 catttaaacc tctcagtaag accgggcacg gtggctcacg cctgtaatcc
255401 cagcactttg ggaggctgag gagggaggac cgcttgagtt caggagttca
255451 agaccaacta ggcaacagtg agacccctct ctacaaaaat taaaaagtta
255501 gctgggcatg gtggcacacg cctgtggccc catgtggccc cagctactag
255551 ggatgctgaa gtgggaggat tgcttgagcc caggagattt gaggctgcag
255601 tgagccacga ttgtgccatt gcactccaac ctgggcaaca gagcgagact
255651 gtttcaaaaa aacaaaaaca aaaacaaaaa acctctcggt aacctgtgag
255701 tgagagttta aatattgttt ttctgataag atggtgaagc actctcagga
255751 aagttattgc acacagtgga atcatggcta cgtggctacc tcaggatttg
255801 tattagtaca cttagggctg ctgtaatgac ctaaacatgg gtggcttatg
255851 gcccatccta ataacctcac tttaattgga ttacctctgt aaagattctg
255901 ctctaaataa ggtcacattc tgaggtgtag gggttagaac ctctacatat
255951 aaaatttcag gaaagtaatt caactcataa caggattttt tttaatttct
256001 ttttttaga gatgaggtct cgctatgttg cccaggctga tcttgaactc
256051 ctgagctcaa gtgatcctcc cacctcggcc ctcaaacatg ctaggattac
256101 aggcattagc cactgcacct ggccctataa caggatttaa cccataactc
256151 ctgatcccaa gcctgatggt tacctgtata ttcaagcagt gcttcttaaa
256201 cgtggatgta tattggattt cctggagaat tttaaaaaat atattgatgg
256251 gccaggcgtg gtggctcatg cctgtaatcc cagcactttg ggaggccgag
256301 gcgggtggat cacctgaggt taggagttcg agaccagcct ggccaacata
256351 gtgaaacccc ttctctacta aaaatacaaa aattagccag gtgtggtgcc
256401 acacgcctgt aatcccacct actcaggagg ctgaggcatg agaattgctt
256451 gagctcagga ggtggaggtt gcaatgatct gagatggtgc cactgaactg
256501 cagcctgggc gatacagtga gactccgtct caaaaaaaaa aaaaaaagtg
256551 tgtatgtata tatggttttg agttcacctc aagagattac gatttaattg
256601 gcacatagtt gacatagttg tgccaattaa atgtgtatag acactggatt
256651 aaaaaaaaaa aactcctcag gtggttctaa ggagaggtca agattagaac
256701 cattgactta gagcaccttc ccatcaccat ttgataggct ccacctcaga
256751 ggaaggataa gccctctcct tgcttcgctg ccagggaaag gaggcccaat
256801 ttgtctttag ttctgcaatc ttggctccat ttcggtttct atttttctta
256851 ttctttttt ttttttttg agatggagtc tcgctctttt gcccaggccg
256901 gagtgcagtg gcatgatctt ggctcactgc aacctctgcc tcctgggtta
256951 aagtgagtct tctgcctcag cctcctgagc agctgggatt acaggcgcct
257001 gccaccacac ctggctaatt tttgtatttt tagtagacat gggtttcact
257051 atattgacca ggctggtctc aaactcctga cctcgtgatc cgcctgcctc
257101 agccccacaa agtgctggga ttacaggcgt gagccaccac aacaggccta
257151 tttttcttat tcttcaagca catctgctct tcacacatgt cagactcaca
257201 gcctagtaca tgacacacat taggccctta acaaatatct gaagaagaaa
257251 aggagggaga agaatcacaa gggaagaagt gcaaagggat gggattggaa
257301 taggggaact cttgaaaaag tgatgtttct ggaaaaggag gatttcatgg
257351 tacccactgg gggagaatat tagtgcaaat agtgcccaat gatggataat
257401 catccaggga tttgccttcc agtgatacca cataagggca tcaaatcaca
257451 ttcacaacct taaatttaat agttgtgcat gaggtgagga cgaattacct
257501 tggggtatca gttccccttc ccaccaaacc cccagagctg gcacatgaca
257551 gtccaacaag gtctcctccg aatgctgagt gccctggaag gcagagtgaa
257601 gctctgaccc cattgtgttg tgaggtggag agtaaatgac agtggtttcc
257651 ttgtgccctg gcttgtttct ccccccttggg cttcatccat tctcaccctc
257701 agagctaact ggggctgact gggaatgagc taattaggac tggcctttcc
257751 ctatatgtgt tccccagaaa aggagcatat accttcagga aaacatgaat
257801 tcacaggtca aagtagcaga tttcagaatc acaactatgt gaaatgaaac
257851 atagcatttt agattacaga atccaactat atatataaaa acagttgcat
257901 agataatgtg atattggcct aataaatata caaaaagaga taaaagaaga
257951 taatgacaat gtagataaga acaagaaaac ataaaaaagc aatattagat
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FIG. 7 CONT'D

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258001 aagtaaaata tcatagttga agtgaacaca tcacatggat aaacaacaaa
258051 atggatagag ctgcaaaact aattgtcaac ttggaagacc aggcggagga
258101 aatctttcag aagagataag aaaataacaa agacgtataa aatataaaga
258151 aaaaactagg ttatgtggaa gacagaagta ctaacatcta ggtaataaga
258201 attctagaaa gaagaaaaat gaacagaaag aaatgtttga agaaaaatga
258251 gataatcttc cataactgta aaaagatgaa agaaagataa aaaaggttat
258301 agaaaaaaga taagaaaaaa tccacaccag aacattttat agtaaaatta
258351 agaatttcaa ggctggacat ggtggctcac acctttaatc ccagcacttt
258401 gggaggctga ggcaggagga tcacttgagc ccaggagttc aagaccagca
258451 taggcaacaa agtgagatcc catctctaca aaaagtttta aaaattaggc
258501 atggtgatgc atgcctgtag tctcagctac tcaaaaggct gaggtgggag
258551 gatcatttga gcccaggagg gtggggctgc agtaaactgt gatttcacca
258601 ctgcattcca gcctgggtga cagaacaaga catcatctca aacaaacaaa
258651 caaaaaaacc caacaacaac aaaaaaaaga attcaaggaa aattctaaaa
258701 gattataaag agaaagagaa catcacaaaa agaggactga agtcagattg
258751 acatcagatt ttttttttt tttgagacag agtctcactc tgtcacccag
258801 gctggagttc agtggcacaa tctctgctca ctgcaacctc cacttgccag
258851 gttcaagcaa ttctcctgtc tcagcctcct gagcagctgg gactacaggc
258901 acctgccacc atgcctggct aatttttttt tgtatttta gtttttacag
258951 ggtttcacca tattggtcag ggtggtcttg aactgctggc ctcaggtgat
259001 ctgcccacct tggcctccca aagtgctggg attacaggcg tgagccacca
259051 ggcccggcct gacatcagat tttttaacag caacaactga tgtaagaaaa
259101 cagtggaatg agctgggcat agtggctcac acctgtaatc ccagctactc
259151 cagagggtga gatgggaaga ttgcttgaga ctaggagttt gagaccagcc
259201 tgagcaacat agtgagaccc catctctaaa aaaatatttt aaattagccg
259251 ggcacaatag tgcactccta taggcctagc ttactcagga tgctcaggtg
259301 ggaggatctc ttgagcccag gagtttgcgg ctgtagagag ctatgattat
259351 agtattgcat tccagcctgg gcaatagcat gagactccat ttctaaaaaa
259401 aaaaaataag agaaagaaaa agggaaaaaa aaaaagaaaa aagaaaagaa
259451 aaaaatggtg gaggaatggt atggtattct caaaataata aaggcaaaga
259501 aaccatcctc aattttattt atttatttat ttatttattt atttatttat
259551 ttatttattt ttgagacagt gtctcgctct gttgccaggc tggagtgcag
259601 cggcacgatc ttggctcact gcaacctctg cctcttgggt ttaagcaatt
259651 ctgctgcctc agcctcctga gtagctgaga ctacaggtgt gcaccaccac
259701 gaccagctga tttttgtatt tttagtagag acagggtttc actatattga
259751 ctagaatggt cttgatctct tgacttcgtg atcctcccac ctcggcctcc
259801 caaagtgctg ggattacagg tgtgagccac tgcgcctggc ctatttattt
259851 ttttgagata agagtctcgc tctgttgccc aggctggagc ctggtggtgc
259901 aatctccact cactgcaacc tccacctcct gagttcaagc aattctcctg
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260151 tatatccagt tggccattca aagataaggg catgataaaa aaaaatatta
260201 tcaggcacag aagttctcag aagatttacc acacaaaggc tatgctgaaa
260251 actattttag atgaaaggct taaataaagg gagagtaaat ctagtagata
260301 ctgccagaga tatgtaaagt aaagatgacc aagtacaccg gtaaaatttc
260351 tttgacttaa aagaatagcc aagactaaag aaaaagagaa ctcatagaca
260401 caataatctg gcatcaaagt gtagataata acatgatgtg gattgggggc
260451 acagagatga agagatgagt gtataaagtt ttgttcttat gggggaagag
260501 atagttacca atttaaagaa atggttaata atatatatag aaaaagtgag
260551 tcagactgaa aaaaaataaa gtggtagaaa caggtccgaa taaataatta
260601 caataaatat aaatgaacta aactcatcag ttaaagacaa agatggaaaa
260651 atgtgatata acaaaaattc aggtatgtgc tattaacaag agataaaact
260701 aaagcataag gaattgcaaa gactctaagt aaatgaataa aaaagatatc
260751 agtaaaatac taatcaaaat aaagctggtt tatctacagc aatattagat
260801 aaaatggact taaaggcaaa aagatacata gcatgtatgc atttaataaa
260851 gcaaaaggtg gcccagggtg atggctcacc cctgtcatcc cagcactctg
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FIG. 7 CONT'D

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260901 ggaggttgag gcaggtagat cacttgagtt caggagtttg agaccagcct
260951 gggcaacatg gcgagaaccc catctctgaa aaaaaaaaaa aatgcaaaac
261001 ttagccaggt gtagtggtgc atgcctgtag tcccagctac ttggaaggct
261051 aacatgagag gatcatctga gcctgggaa gttgcagtga gccatgatca
261101 tgccactgca ctccagttgg tgataaaaga aaaagattga taaatgttgc
261151 tttgttagag aaagtaaaaa gttatatata gaagatattc aaaacacata
261201 aaactggcaa aggactggta tcataaagaa cttctgcaaa tcagtaaaag
261251 aaaaaacaca taagcagccc aataggaaaa tgggccaaaa aaagaactgt
261301 tttcacagaa gagaaaacac atgatcaata aacatatgaa gagatgttta
261351 acataattag taattgggaa gtataaattg agactacagt ccgggtgtgg
261401 tggctcacac ctataatccc agcactttgg gaggcctagg tgggcggatc
261451 acgaggtcag gagattgaga ccatcctggc taacatggtg aaaccccgat
261501 tctactaaaa atacaaaaaa attagctggg tgtggtggca cgcacctgta
261551 gtcccagcta ctcaggaggc tgaggcagga gaatggtgtg aacccgggag
261601 gcggagcttg cagtgagctg aggtggcgcc actgcactcc agcctgggca
261651 acagagcgag attccgtctc aaaaaaaaaa aaaaaaaaaa ttgaggctac
261701 aatggcacac aattttatac tcattcatct ggtaaaaatt tgaatggtct
261751 gataacacca aatcttatca atgctggtga gaatgtaaaa ttgtataact
261801 actttggaaa agtttgacat tttctcctaa atttgggcat tcatatacta
261851 ttatgggttg aattttgtcc cctagaataa aatgttaaaa ttctaactcc
261901 tggaaccttc aatgtgatct tatttgaact ttgcagatgt gagtagctag
261951 gttataatga tgtcatactg ggccctaaat tcaataggac tggcatcctt
262001 ataagaaaag aagaggccag gcacgggtct catgcctgta atcttagcac
262051 ttcgggaggc tgaggtgggt ggatcacctg aggttaggag ttcaagacca
262101 gcctggccaa catggtgaaa ccccatctct actaaaaata caaaaatttg
262151 ccaggtgtgg tggcggacgc ctgtaatccc agctacttgg gaggctgagg
262201 caggagaatt gcttgaaact gggaggcgga ggttgcagtg agctgagatt
262251 gcaccattgc actccagcct gggggacaag agtgagactt catctcaaaa
262301 aaaaaaaaaa gaagaagagg agagacagag acagaaacac acagaggaga
262351 agaccatgta aagacagaga tagaaattgg agtgatgcat ctacaagcca
262401 cggggtgtcc agggatgctg gcaaccatca gaagccgaga gagacatggg
262451 acagattttc cctcagaggc tcccataggg aaccagccct gaggacactt
262501 actgtgagat aacacatttc tgtttttttg aggcacccag tttatggtaa
262551 tttgttagag cagctctatg aaactaatac acatactcaa tgacccaaca
262601 attctactcc taggtataga cccaacataa accatttcat gtgtacaagt
262651 gactgcataa ggaagttcac aggatttcag ttcacaacag caaaaacctg
262701 caaagaacct aaaagcctaa ctataaaaga cagaataaat aaattgtagt
262751 aaatccacgc aatggaatgt tattcagcag tcaacatgaa tgaactatag
262801 caatgagggg gtctatctgc agaccctgac ccaaacgatg gatgaatgaa
262851 gtacactgac acacagatat tctgctatgc cagtccagct gagtgtctgg
262901 gccacttaca gactccaagc agagtgctgt aaacagtcac gaccatggcc
262951 ctgaccaact agtgagactc gcatttattt agtaaagatg aattgacaaa
263001 ggcttgagtc aacaccacca gagggtaatt gacattgtgg acttcctgta
263051 gaaagtaatt aagcaccggt ggtagatcaa aggttagtct taaacaacct
263101 agctagatac actactctgc cttcttcctt acccacttga agcttttac
263151 tcaaggtaag gattaggttg ccttcagcca ttgtcttatc ctgagacttc
263201 tgtaaaaacc ttcaggcctt ccaagaaagt ttgtgtttat ttttataact
263251 atctttaata tttttcccac cagcctgatt gaactcccac ataacaacac
263301 acaaaaatat gaggaatctt aacaatataa taataataaa tgaatctaaa
263351 gagtttacat attctgcaat gcatttttaa taaaatttat gaccaagata
263401 atagttcctt tttatgaatg caaatacgtg caattcaact atatgaaatg
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263551 tagacaaagg cagagggaca cgatgggaaa agcaaccata tggttagatg
263601 taggttgttg tcaaggtctt agtttttgct tgagatggtg ggttcatgag
263651 tatttatcta tgtctacagc tatgtttata tgtatattaa cataacaata
263701 tttaatggag gaggccactt aaggaccaca gaggaaagta tgccataaat
263751 aggattagaa ctaattcttt ttttttttg tcttgagaca gagtttcact
```

FIG. 7 CONT'D

263801 cttgttgccc aggctggagt gcaatgccgc gatcttggct cactgtaacc
263851 tccgcctcct gggttcaagt gattctcctg cctcagcctc ccaagtagct
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264101 ctggggctaa acatccccca aattgttggg ctttcccaga tttgtccatg
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264251 ccaatctaga ccaaacatgc agctctggat tgttcaggat ttagtgtgcc
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264351 aagttcattg agttcaagta gaatcagctc aatgggtggg aaaaagaaaa
264401 aagaatcagt tcctataaaa aaggacagca tagttgctag aaccctctag
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264751 caagctccgc ctcctgggtt cacgccattc tcctgcctca gcctcccgag
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265001 tactatctgc ttttgaaatg atggagctac ctttcagttt taaaaacaat
265051 atatttcagg catctcaagt aatccacaat ctggaggcaa aagtcaagac
265101 tgagttgaca gagcacaaat ctgtttcatt tgactacatt aaagaggttt
265151 gcattctttc aagggcttac tagcgagttg ttcagaagca gtactgacac
265201 gggggcctgg gattgttgag ggatgcttat gcacagagag gaaggtttgc
265251 taatccagga gcactgaatc atcatgatgt aaacttgcag gacttcatgg
265301 cttcagtgat acatcattga tctttaattc cagtccacag aacttttttt
265351 tatggtaagg aaaaggatat gggaagaaaa aagtattata agcatgtttc
265401 tcatatttct tccctctttt accctataaa taaaagagca aaggtattac
265451 tgagcaaatg ttctcttgaa aaacttgatt tcttcttatg cttggaaatt
265501 ttgctataga gatagtcatt gctactgttt acagtagaca ttccaaccct
265551 gaaaactaaa ctctgaagta tttactatgc ttagataaat cacatatttg
265601 tcctcatgag tacagcctgt tcaggtttgt acataccatt gcgtaattcc
265651 ctaagaactc tttccaattt aaaaggatga ctttggacac ctttgtggaa
265701 gttgatagga aagatttttg ctctttaaaa tacttgttaa ataggccagt
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265901 gcagaatcct caaaagaaga tacacaaata aatgcagctg aggaacctgg
265951 agacttccct ggtttctgtc ccttgtgaga cttcaaatca taaaataccc
266001 taatatcttt ctgtaatctt ctgtcatgtt ctaaaatgtc taaaatattg
266051 aaacagtcct tattatcaga aaaaagtaat catgaacaga gcccagaata
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266151 cctccaaaca atgtcccatg agaaaaccca gaagacatct ccctcactaa
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266601 gtcaattcac agagccaaag ctccttgatt aaagaggagg ctgggagcca
266651 ggcacagtgg cccatgccat cccagtgagt caggaggctg aagcaagagg

FIG. 7 CONT'D

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266701 attgattgct tgaagccagg agtttgacct cagaccctac gaaaaaatta
266751 atctaaaatg tcggggcgcg gtggcccatg cctctaatcc gagcactttg
266801 ggaggcacag gtgggcagat cacaaggtca ggagtttaag accagcctgg
266851 ccaacatggt gaaaccctgt ctctctaaaa atacaaaaat tagctgggga
266901 tggtggcatg tgcatgtaat cccagccact tgggaggctg aggcaggata
266951 attgcttgaa ctgggacccg ggaggcggag gttgcagtga gccaagattg
267001 caccactgca ctccagcctg ggctacagag ggagacacca tctcaaaaaa
267051 aaaaaaaaaa aaaaaaaatc taaaatggat catagatcta aatgtaaacc
267101 tagaattata aatctactag aaaaaatata ggacaaaatc tgtgggaccc
267151 tggcataagc aaagttttct taagtagaac acaaaagaag atataaaaga
267201 aatagatggg gcttggcatg gtggctaaca tgtgtaatcc cagcactttg
267251 ggaggccaag gtgggctgac cacctgaggt caggaattcg agaccagcct
267301 ggccaacatg gtgaaacccc atctctacta aaaaaaaatt agccgggcat
267351 ggtggcacat gcctgtaatt ccagctactc aggaggctga ggcaggagaa
267401 ttgcctgaag ctgggaggtg gaggttgcag tgagccgaga tcacaccact
267451 gaactccagc ctgggccaca gaagaaaatt ccatctaaaa aaaaaaaaaa
267501 gaaaaaaaag aaaaagaaat aggtaatcag ttgggcttca tcaacattta
267551 aaacatttct ctttgaaagt cagttaagaa aatgaaagtc agctaggtgt
267601 ggtggcttac gcctataatc ccagcacttt ggaaggccaa ggcaggagga
267651 tcacttgagc tcaggatttc gagaccatcc tacgcaacag agcaagaccc
267701 cacctctaga aaaaatttta aaaattagcc aggcagggtt gtgcgtgcct
267751 atagtcgtag ctatttggaa ggctgaggtg ggaggatcac ttgagcaaaa
267801 tcaaaactga ttttcattaa atctcaaagt aatctgttga ctgaaagaaa
267851 ccaaacaaag atatatattg tattatttca cttatatgaa attcttgaaa
267901 ataaaaacta acttatgtag ctagactgca gatcagtggt tgcctgggga
267951 caggttaaaa agtgcaatga actgcagaca ggtatgagaa aaccttcaat
268001 ggcaatggaa atgttcagca tcttgtttgt ggagatggtt tcatagttac
268051 atatgtttac caaaacttat caaatagtga acttcaaata tatgcagttt
268101 attattcaaa attatacttc aataaagttg tgaaaatggg agcggggaag
268151 caacaaatac tggtgtgagt caacagcatg aaccatatca ccttttctca
268201 ttttccagaa gtatgctgag ttccttggtc agccaaaata accacctct
268251 cgcccatatg agaggatctt ccttgtccat tttcccccat agtacctgtc
268301 atttttttt tttctgctgc tataacaaag gaccacagat tgggtcactc
268351 ataaagaaaa gaagtttagg ccaggcacag tggctcacac ctgtaatccc
268401 agcactctgg gaggccgagg aaggattgct tgagcccaga agttcaagac
268451 cagcctgggc aacatgatga gaccctgtct ctacaaaaaa tacaaaaatt
268501 agctgggcat ggtggtgtgt gcccatagtc tcagctactt gggaggctga
268551 ggagggagga ttgcttgagc cagggaggtt gaggctgcag tgagctgtga
268601 ttgtgccact gtaccccaac ctgggcaaca aagcaagacc ccatctgaaa
268651 gagaaagaga gagagagggg ataaaaaaga gaaagaaaga aaagaaaaga
268701 aaagaaaaga aaagcttact tggtgttgcg ggaagtcagg gaccctgaat
268751 ggagagactg actggagcta cggcagagga acataaattg tggagatttc
268801 ttcttaatat ggacatttat cagttcccaa ataatactat tataatttct
268851 tatgtctgtc tttaatctct ttaaacttta atctcttaat cctgttatct
268901 tgctcactgc aagctctgcc tcctgggttc acgccattct cctgcctcag
268951 cctcccgagt agctgggact acaggtgctt gccaccatgc ccagctaatt
269001 tttttctttt tgtattttta gtagagacgg ggtttcactg tgttagccag
269051 gatggtcttg atctcccggc ctcatgatcc acctgcctcg gccttctgaa
269101 gtgctgggat tataggcatg agccacagcg cccggcctga tcagaacatt
269151 ttttaatgaa aggatctaga aagcaacttg gaagtgtaaa tagtcacctt
269201 cattttctct aacttgatca agactagtgg gtccatggcc ctgtgttagt
269251 tcatgcattc atctcagacc caaatgaaag tttcaactcc caaaatgcag
269301 ttccttagat gctcgtctgg acgtgatgac gtgcccgcca tataagaagg
269351 tgcaatcata ggtatcacag gtagccagat agaagacatt tttttctccc
269401 aaaattattc cttggagtgg ggagtgatat gggggaagag ctcccatctt
269451 aaggggcaca cactgagttg cttatgctac ttccttgttc aaaatgaagt
269501 aactgcctta atctaaaaaa agaaaagaat atttacaaca ctgaaaatga
269551 atgaactacg atttatgtat agcatggatg aatttcataa acattggaca
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FIG. 7 CONT'D

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269601 aaagaatcca gacacaaaat agtggttgcc tttgggcaat atagaagggt
269651 gcaagtggaa gtagcctcaa gaagttttct ggggtgctgg taaggttcta
269701 ttttctaaac tatgtggtga ttaaatatgt gtattcactg tgtggtaatt
269751 aatcaaactg tttacttttt ttttttttga gactgagtct cgctctatcg
269801 ccaggctgga gtgcagtggc ttgatgtggg ctcactgcaa cctctgcctc
269851 ctgggttcaa gtgattctcc tgcctcagcc tcctgagtag ctgggattac
269901 aggcgtacgc caccacaccc agctaatttt tttgtatttt tagtagagac
269951 ggggtttcac catgttggcc aggatggtat caatctcttg accctgtgat
270001 ccaccagcct cgggctctca aaatgctggg attacaggcg tgagccactg
270051 cgcccggcca acttttaaaa aaaaatttag gtaaaaccca cataacatgt
270101 aattgactat cagccatttt aaagtggaca attcagtggg atttagtgta
270151 ttcacaacgt tgtgcaacca ccacctctgt ctagtcccaa gatattttcc
270201 tcaccccaaa agggaacccc acccataccc atcaagcaat tgctcctcat
270251 tcttctgagc tgttactttt ctacactttt ctacaagcat gttttacttc
270301 aatttaaact ttagcccatg aaatctaggc aagacgagga ggagaatgaa
270351 gtcatatagg agctgatgaa tgtcaagcca tggtggggtg ggccactggg
270401 ttgaagattt tgaaaaggtt gaagaagtat ggtagtggac gcacttgagt
270451 aagtgaattg aaaggaaaga ggtagtggtc agagggtagg atgcttaaat
270501 aaagatttca caaatgcgtt catttctgtt gatcccaagg aagtgaccgt
270551 gtgagtgtgt agctgaggtg gaatggtgaa aaagatcatt gaggacacat
270601 ctgttaaaga cctaagaagc cagagcattg aatggttcaa ctacatggcg
270651 ttaggtggtt ccaaccaatc aatgctgagg tcacaaaaat gggtaaaaat
270701 gacatggcag gagttgggga ggaggggaaa agcaggaagc taagtgcaag
270751 tctctcctgc atggaggggc atcgccaaga agtagctcac agcttcaagg
270801 aggaggtcaa gggagttaga tgacctgacc ttcagaagag ctgaggattt
270851 tggaggaggg aataggaatt ggaaactgca actgcaggcc atgaggacac
270901 tgcctaataa tgccacagtg gccttgggga cagccatgtt tcaggtaggg
270951 caggagaaga gatggaggat gtgggagagt ttaagatcac agagaggagc
271001 ttctgagaac acagcgaggt gtgggagagg cagtgcttgc atcatattgg
271051 aggacagaca tggcaacaca aagacaggta ggttgggggt gactggaaaa
271101 caggatggag gctggactgg attcagcctg aagatacact cagggtgagg
271151 gtggcaacca gacccgacga cgtgtgtcct ggcaatttct ctccaagaaa
271201 ccactagtga tgaagcagtg ctttaggtgc ttgggggttg agcaccttcc
271251 tgatatgtag tgttaacagc ttataaatgg ctatgtgtga ctttttttc
271301 ttctgatcaa cgctggtcct taatcaccat gttggattac ctcctgctat
271351 ggtttgagtg ctagtcccct gcaaaactca tgttaaaatt tatttgccat
271401 tataacagta tcaagaggta gaacttttaa gaagtgataa gactatgaag
271451 gctccatctt catgagtgga ttgatgttgt tataaaaggg agagtttgac
271501 cctcttttgt cctctcttgc ccttctgcct tttgtcatgt gatgatgcaa
271551 caagaaggcc ctcaccagat gccagcactt tgacactgga cttctcagcc
271601 tccagaactg tgagctaata agttcctgtt tattgtaaat gacccagtct
271651 cacatgttgt tatagcagca caaaaatgga ctgagacacc ttaagaggga
271701 gatacatgct gctgtggtgg atatattaga gattaattta gaaagattat
271751 taaatcactg aagacctttt aaaaattgat tttctttggc caggagcggt
271801 ggctcacacc tataatccca gcactttggg aggccaaggt gggtggatca
271851 cgaggtcagg agatcgagag catcctggct aacacagtga aaccctgtct
271901 ctactaaaaa tacaaaaaat tagctgggtg tggtggtgag tgcctgtagt
271951 cccagctact tgggaggctg aggcaggaga atggcgtgag cctaggaggc
272001 ggagcttgca gtgagctgag gtagcaccac tgcactccag cctgggtgac
272051 agagcgagac tctgtatcaa aaataaaata aaataaaata aattttctca
272101 actacaaaga tagtgagatc acaattatta tcatggtcct taagattttt
272151 ttgacattga aaagtacttt gtaaagcata tatgtgataa aacacttgaa
272201 ttcagactac ataaagaaca ctcaaaactc aacagtaaga gaacaacaac
272251 ctaataatgg ggaaaaaatt tgaacaaaca ctccaccaaa gaagatacac
272301 aaatggcaaa caagtacatg aaaaaatctc aacgtcatca gtcattggga
272351 aaatgcaaac tgaaaccaca cacagaaact gtgaaaatta aaaagactga
272401 ccatgattag ctatggcagg gacatggaag aactgggact ctcatacact
272451 tctggtgtaa atattaaatg gttaaatgtt ggaaaacagt ttggcagttt
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FIG. 7 CONT'D

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272501 ggtaagagct aaatgtacac ctactgcatg atccagccct tccactccta
272551 gtatttatcc tgagaaatga aaacatacgt ccacacaaag acttgtgtgc
272601 caatgttcat agcagcttta tttgtaacat aactaaactg ggaatagccc
272651 aaatatccat taacaggtga ataaacaaat tgcgatacat ccatgcaatg
272701 aaatactact cagcagtgaa aaggaatgaa tggttgatac ataccacaac
272751 atgggtgaat ctcaaaatag ttatgtagag tgaaaacagc cagatcccct
272801 ccattaaaaa gaagtatata cagtatgatt ttatttatat aaaattctag
272851 aagattagat ttaatctgta gtgacgaaga gacaaaggag gtgggataga
272901 aagaggcaga gacgggggtt accaaggggc aggaggaaag tttttggggt
272951 gagatgggta tgttttgtct tgagtgtggt gatggtttca tgatttatac
273001 atatgtcaga acttatcaaa ggtccggcat ggtgactcaa gcctgtaaac
273051 ctggggcttt gggaggcaga agcagcagga ttacttgagg ccaggagttt
273101 aaggctgcca tgggctatga ctgtgccact tcactccagc ctggataaca
273151 gagtgagact ctgtctctaa aattattttg ccaggcatgg tggctcatac
273201 ctgtgatccc aacacttggg gggctgaggc agaaggattg cttgaggcta
273251 ggagttcaag accagcctag gtatcaaagc aagaccccat ctcaacaaaa
273301 agtttaaaaa attagccagg tgtggtggca cacatttata gtcccagcta
273351 ctctggaggt gggaggattg cttgagccca gaagttcaat gctgcagtga
273401 gctgtaatag ggccgctgca cttcggccca ggtgacagat tgagaccctc
273451 tctctctctc tctctctctc tctctctctc acacacacac acacacctcc
273501 acacatacac acaattggga tgatagtagt aactacgtca gaggcttgtg
273551 gtgagaacag aaagcattca gaatagtctc tggcacgtat agacagtcaa
273601 taaatgttag ctaattttag aaaaatattt ctggcaaaat atacataaca
273651 taaaacttac cattttatat gtggtaaaat atcatttcaa ccattttaag
273701 tgtataatgc agtggcatta atacattcac gatgttgtcc aatcatcaca
273751 actacctatt tccagaactg tttcatcttc ccaaactgaa acttcaaagc
273801 cattagacac taacttccca ttgtccctcc tcccagcccc tggcaacctc
273851 tattctactt ttgtctttat gaatttcact accctaggca cctcatataa
273901 atggaatcat acaatatgtg ttcttttgag tctggtttat ttcacttagc
273951 gtatgtcttc aaggttcatc caggttgttg tgtgaattag agtttccttc
274001 ctttttcagg ctgaataaaa ttccttgtat gtagacacca cactttgttt
274051 attcattcat cagttgatgg acattaaggt tgcttccacc ttttgagtat
274101 tgtgaataat gctactatga acatgggtgt acaaatatcc ctttaagccc
274151 ctgctttcaa ttctttgggg gtatatactt agtgaaattg ctgggttata
274201 tagtaattct atttattttt ttgagatgga gttttgctct gttgctcaag
274251 ctggagtgca gtggcatgat cttggctcac tgcaacctct gcctcccagg
274301 ttcacacaat tctcctacct cagccttcca agtagctggg atttcaggag
274351 tgcaccacca cgcccagcca ctttttgtat ttttagtaga gacggggttt
274401 ctccatgttg gccaggctgg tctcgaactc ccaacctcag atgatctgcc
274451 tgcctcagca tcccaaagtg ttgggattac aggcatgagc caccacacct
274501 ggccggtaat tctatttta actcttttat ggaactgcca aactgtttcc
274551 aaagtggcta tactacactc ccacaacaac acacagggat tccagcttct
274601 cggagtcctg gccattcctt gttattttcc aacttttga taatagcctt
274651 cctaatgggt atgaagtaga aaaaaaaatt ccatttttc caacagatgc
274701 tgcaacctgg ccgttggccg ataccttttg tttggccttg aatagtttta
274751 tacgtaggag ccaatacttt gaaaccagca tattttacag ggagagagag
274801 agagagtgag caagcaggag ctggcttctt ttggaaaatc atatggaaac
274851 tctgagccca cattcttgaa cctgtgaatg agaggtagtt gcccttgagg
274901 tgggggcaag ggccacgtgc ttccctccgg acacacatgg aaattgtaca
274951 ggatactggg gaagtgaaga gggacgtgct cagctcagct cagctcagca
275001 ctggctgtcc cgcacacctg cacttgaggg ttgggttggg gtccgggcag
275051 tgtctgacct ggtggcctcc caccctcccc acttccccca actcacagga
275101 ctaagccaat gcgcgtgccc tctgcctcat tgtttatcgt gtctccctgc
275151 cctcatgggt ctttgagttt gagacactct gtgcaagaac taagcctgtg
275201 acaagagcgc ttctgtcgac tactctgtca ttagcaaggg tagaggccac
275251 agggaatagt tcattagttc cttcactttc atcctcccct gcaccaacac
275301 aatctatcct gcaattaagg gaaagaaacc cagggaaggg accttggtgg
275351 cctccatgga aagcccttgt cagccagtgg agatgggaca ttgagttgca
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FIG. 7 CONT'D

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275401 atctagagtg actggagtga tagtagtgag acataataat aacaggaaga
275451 catagcaaga cattgtctct acaaaaaaaa aaacaaaaca aaaaaacaaa
275501 aaaaactggg tgatgttgac ttgatcacca gttgattatt tcttacttct
275551 tggacccaac atatattgag cacctgccat gtaccaagca cttggctagg
275601 ctctgggaac acagcatggt tcctgctctg ttccaggagg atttgggagc
275651 tcttgagaca ctgagcttgg ttgagtcatt attttattca tcatgaaatc
275701 actagaaaaa gatggaaact tgaactgcaa acattgcttg gatttatatt
275751 ctaaggcact ggttctcaaa cctgaatggg cttcagaatg acctggtggg
275801 cttgttaaga cataggatgc tgccacctcc caaccccacc accaatacag
275851 tttctggttg agtagctctg gttcagggcc taataactga catttctttt
275901 tttcttttct tttttctttt ttttttttt tgaggcaggg tctccctctg
275951 ttgcccaggc tgagtacagt agtgcaatca tggctcactg caaccttgaa
276001 ctcccaggtt ttattgatcc tcccacctca gcctcccagg tagctgggat
276051 tacaggtgtg agccaccaca cctggcctga taattggcac ttctaacaag
276101 ttatcaggtg atgctgatgc tgctggtcca gggacacact ttgagatcca
276151 ctgttccacg aaaattatgc cagggctggt ctaagaatat tccctttcct
276201 tcatttgttc tccttaacca atcatcctga cccatacggc agccattgct
276251 gttagatgtt actggaagat tgaaatgact ggctgtctcc atcgcaaacc
276301 tgaataattg tagggctaga aatgagctat ccctttggct gggctgcggc
276351 ttggggaagt aattacctca gaataacgaa gcagtcactt ccagagtcat
276401 tacttctgca tgcagagatg gttcaagaat ccttggagaa accctatcaa
276451 gtcctggcct acttgaagtc agtattgagg ctttccctgg cagtgaaact
276501 actgaggcca agattgcttt cccaagctgg aaaaaacggc atcccagatg
276551 accaccctgt tcctgcagac acacatctgg gcttctagcc actgggggca
276601 ccagaggctc accgttttaa ctttttctga gcaaccaagc tgctctcagc
276651 ttgttgattc aagaacactc aacctgaaaa gtctacaggc tcttatttaa
276701 aatttgtccc aatcaagaaa caagtattat tattttgtgt attcctgaag
276751 tctatgctag aaatggagga gaatgggagg aacccgcaat caactgtcca
276801 ttgtgggtgt agattagtat ctgcagccac atgggtgatt tttttttta
276851 cttgcagtta gcatttgtcc taatttgaga gaaatcagga ccttcatggt
276901 ggcataatca taaacaacgt tttacttaaa gcagtggttc tcagcgttga
276951 ttgaacattg gaatcaccta gctttataaa ggattgaaac tgatagccaa
277001 agctgggacg agttaagcaa caaaattaat aaaatagtat tggacccaac
277051 atataaataa atatcaatga gttcatacta acataaatat acaattaaat
277101 taattaatta tttaatttgt ggtgggagaa ttcctaataa tgtgcacaag
277151 aattccaaat aatgtatgta gatactccac cctcaaggag ctagagcaca
277201 actccctata actaaagtgt gagtagcaaa cagtgactct cttccaaaga
277251 ttacagtatg gaaaggggag aaaagtaact ttccaatgga gacatcttag
277301 ccaggtgttc aagtcagcat cagtagtggt gaatcatgtt gattgtatgt
277351 actcttgaca tgatgtgatg acaatggcac tttacctctg tgctcttcct
277401 cccaaaagcc catggccctg tctaatcatg agacatcaga cagatcccaa
277451 ccgagggata ttctacaaaa tattcgacca atactcctca aaaatttcaa
277501 gaccatcaaa aacaagaaaa gcctaagaaa ctgtcacagc caagaagggc
277551 ctaaggagac atgatggcta aatgtcatgt gggttcttgg atgggacctt
277601 ggaacagaaa aagaatgtta ggaaaaaact aaagtagtct gaataaagta
277651 tggactttag ttaatagtaa tgtctcaaca ttgattaatt gtgacaaatt
277701 tgcgatgcta atgtgagatg ttaataattg ggggaaatgg gtgtggagta
277751 tatgggaaac tctctgtacc atctttgcaa tttctctata tatctaaagc
277801 tattctaaaa tttaaaagtt ttctcagcgg ctgtttagct taatcggtta
277851 aagcatggtg ctgataaaat tttaaagttt attataaaga aaaaacattg
277901 atccatggaa tccacccccg gtcccctcag gggttcaaat ttaactagtc
277951 cagaatttgg ccttggcttt gggctattat aggcagccag ggttaagaac
278001 cataccttca gtgttaatca aagccgtctg aaaagttagc atattcttgc
278051 cttatccctt tttctcacac acctcaaact attcttttgg ttccatgaaa
278101 aaaatgttgt tttataattt tctttctttc ttttttttt tttttgagat
278151 ggaatcttgc tctgttgccc aggctggagt acagtggtgc aatcttggct
278201 cactgcaact tccacctcct gggttcaagc gtttctccta cctcagcctc
278251 ctgagtagct gggattacag gcatgtgcca tcacgcctgg ctgatttttg
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FIG. 7 CONT'D

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278301 tatttttagt agacacgggg tttcgccatg ttggccaggc tggtctcgaa
278351 cttctgacct caagtgatgc acccaccttg gcctcccaaa gtgatgagat
278401 tacaggcgaa agccactacg cctggcctgt gttattattt tcttgaatag
278451 cgttatgggt tgacttttga gtctcccaca aagatatgtt ggagtcctaa
278501 cccccaattc cttaaaatgt gacctcattt ggagataggg gctttgtaga
278551 tgatcaagtt aaatgaggtc cttagggtaa gccataatcc aatgtgaaaa
278601 gtgtccttat aaaaaggtga aatttgatac agagacagac agacatgtgt
278651 ccaggggaga caatgtaaag acagggacaa atcatctaca ccatcaggga
278701 gagaggcctg gaccagaccc ttctctcaca gccctcagga agggcctgtc
278751 gacaccttga tttcgtacgt ctagctctgg gaatgtgaca ataaatttct
278801 gttgtttgag ccactcaatt tgttacacca ttcccttcaa gactaataca
278851 tatagtattt gcattcttct ggaatatgtt atggcttcat aaacatacat
278901 aaatatagac atgatttcaa gggatcaaat tatgcataat aacattatag
278951 tatcaatttt cctttcgtat gatgcagtcc tttgtggaag gacatgtgaa
279001 tggtttctct aaactgtgac ctcctcaagg gcagctctgc atctccatgg
279051 ccagcattat gtaacactgt ggttccagcc tcaggagcag aagcagggaa
279101 gggtggtggc ttggagctct ggtgatggaa ggagggctcc cttctgtatg
279151 tgcaagccca gggctttttt ggtgggaagc atggtctcaa agggagtgga
279201 gtgaccacct ggagaaataa gagatggact gttacatatt gcagattgac
279251 aaagaaggcc atactggttt tatgtaattt tctctctctt tccacaatta
279301 atatacagct gtttttggca acagctttat tgatatctaa tttacatacc
279351 atatatttta cttgcttaac gactacaatt tggccaggtg tggtggctca
279401 cgcctgtaat cccagcactt tggaagcaga ggtgggcgga tcgcttgagc
279451 cgaggagctc cagaccagcc tgggcagcat ggcaaaactg tctctacaaa
279501 aaatataaaa attagccaaa tatggtggtg gtgtgcacat gtagtcccag
279551 ctacttgaga ggctgaggtg gcaggatcac ttaaacccag aaggtcgagg
279601 ctatggtaag gtgtaatcat accattgcac tttagcctag gcaacagagt
279651 gagaccctgt ctcaaaaaaa aaaaaaaaaa agaaaaagaa aaagaaaaaa
279701 gagcacaatt ccatggtttt tagtattaat atattcacag agttgtgcaa
279751 ccatcaccac aattttagaa tatttgcatc acagcagaaa gaaatccata
279801 cccatttcca atcacctctc atttccaatc tccctagccc tgggaaacca
279851 ctaatttttt ttttttttt ttttttttga gatggagtct cactctgtcg
279901 cccaggctgg agtgcagtgg caccatcttg gctcactgaa acctccatct
279951 cctgggctcc agtgattctg ctgtctcagc ctccctagta gctgggatta
280001 caggcatgca ccaccacacc aggctaattt gtttgtattt ttagtagaga
280051 tggggtttca ccatgttggc caggctggtc tcaaactcct gacctcaagt
280101 gatccacctg ccttggcccc tcaaagtgcc gggattacag gtgggagaca
280151 ctgcacccgg ccagaaacaa ctaatctatt atttgtttct atagatttgt
280201 ctgtttggga catttcatgt aactagaatc atacagaatg tggttctttg
280251 cgattggctt ctttcaggca gcatgatgtt ttcaaggtcc atccatgtgg
280301 tagcaggtat cagtgcttca tttctttta ctgccaaaaa atattaaatt
280351 gacttgtata caccacactt tatttatcca ttcacctttg aattgtttca
280401 aagttttgac tatcatgaat aatgttgtca tgtacatttc atatacaagt
280451 ttctgtgtgg acatatgttt ttatttctct tgggtgcata cttaggagta
280501 gaattgctgg ctcatatgtt aactctttgt taacatacag aaactgtcag
280551 actgtgtttt caaaacagtg caccattttg tattcctacc attagtgtat
280601 gagggttcta ctttttccat atcctcacca acaattgtta ttatctgcct
280651 ttttgattat aaccaacgta gtgagtgtga agtggtattt cattgtggtt
280701 ttgatttgtg tttctctgat ggctaattct ataacatttt ataatcagaa
280751 taaaataagt tctattctaa aaaatagcaa cgacagcaat tcttctttag
280801 gtaagacatt gtctgtgttc cagttttctc tgacaatctg tgacccagta
280851 gtctcacaga cagtcctttt ggataaacat agaaatttac ccctctggtc
280901 ttaaacttat atttgtttta tctgagttcc ttcttcagga aaggacaccc
280951 aggactctca aaaactatca aagaactggc tgtctgcggt ggctcatgcc
281001 tgtaatccca gcactttggg aggccaaggc gggcgaatca cgaggtcagg
281051 agatcgagac catcctcgcc aacacagtga aaccccatct ctactaaaaa
281101 tacaaagaat tatctgggct tggtggcaga cacctgtagt cccagctact
281151 caggaggctg aggcaggaga atgtcatgaa cccgggaggc agagcttgca
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FIG. 7 CONT'D

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281201 gtgagccgag atcacgccac tgcactccag cctgggtgac agagtgagac
281251 tccatctcaa aaaaaaaaaa aaaaagtttc aaagaactga aactcaccag
281301 atgatcccca catccagaaa gtgagatgat ctcatgcgtc attaatcatg
281351 attgctttct tactcctccc tagttcctgt tttcccacac attgctaaat
281401 ttcttccctg ccatataaac ctctaatttt aattggtcag ggaaatggat
281451 ttgagactga cctcccatct ccttggctgt agcacccgat taaagccttc
281501 ttccttggca atactcatca tctcagtcat tggctttctg tagggggagc
281551 agcaggacct aaactaaacc ctgctgtttc ggtaacagat tttggttccc
281601 tgaccaggaa cacattgctc atggtttggc tgctgcaggc caggaatctc
281651 agaagccatc ctaagcagct gcccacccaa ttttgtctgg aggtgagttt
281701 tggtctccct ctggccctgc tgctgacccc aactgtgttc ctgattgcct
281751 agaaagagca tcctttgaaa tttgacatct gcatccacat gggatagtgt
281801 cctttgtggg tcctgatagc aggatctgct cctctcaatt tgggaaatat
281851 ttatagaaat ttccatttgc aggttgaaca agcccaactg acttgagaga
281901 agcaccctga ctgtttcagt gtagacattc ttgggggctt gtttgtaatt
281951 gtgtgttttg tgtgtgtgtg tgtgtgtgtg tgtgtgtgta tgtgtgtgtg
282001 tccaggcaag tgagtgtctt gcaggtacca cacagcagga ttggatcctc
282051 tcaatttgaa aaatttcaaa ggaattttat ttgcaggttg atcaagccca
282101 accaatagag agaggaagca ccccaaatgt ttcagcttgg acactcttgg
282151 ggcttgttta ttgctgtagc atttgaattg tgttttggtg attgtgtgtg
282201 tgccatggga aatcagaatt caataaactg aaattctttt gtaatactgt
282251 ttgaccccaa tattgtttgg aatctggagt ttgctgttga atgggaaagt
282301 gggatggagt tctgtgtatc caggcttttg tgctgctgtt ctaagcagag
282351 ttgggcctgg ttatttattt atttatttt gagatggagt ctcgctgtgt
282401 tacccaggct ggagtgcagt agtgtgatct cagctcactg caacctccac
282451 ttcatgagtt caagtgattc tcctgcctca gcctcctgag tagctgggat
282501 tacagttgcg ctccaccaca cctggcttat ttttttttt tttgagacgg
282551 agtctcgctc tgtcgcccag gctggagtgc agtggcgcaa tctcagctca
282601 ctgcaagctc cgcctcctgg gttcacacca ttcttctgcc tcagcctccc
282651 gagtagctgg gactacaggc gcctgccacc atgcctggct aatttttgt
282701 attttcagta gagacggggt ttcactgtgt tagccaggat ggtctcgaac
282751 tcctgacctc aagtgatcca cccgcctcgg cctcccaaag tgctgggatt
282801 acaggcgtga gccactgtgc ccggcctaca cctggcttat ttttgtattt
282851 ttagtagaga tggggtttca ccatgttggt caggctagtc tcaaactcct
282901 gacctcgtga tccactcatc tcagcctccc acagtgctgg gaatacaggt
282951 gtgagccacc acgcccagcc ttgggcctgg ttatcatgcg atgttctccc
283001 atggtgctgt ttggcttcag tgttctttgg agtctggaga ggtttggcct
283051 ttaaaaaaca aattgccatg gaaactgctt tacccacaat tttggttcac
283101 agccttcact ggattgccta tccagtcaaa caaagtgtag ccacataaac
283151 tggtgatttg tattgctatc ttatggctac agttcaaagg caaaggctat
283201 tgtatctttg tttatatatg tgtgtataca tgtctatata tgtttatgta
283251 tgtacgttat atgttgtgtc taccaaattg gcttataaat acaaaaaact
283301 catatattaa gtccaaagtc tttttcaagt tcacaagact tacataaacc
283351 tttaataaag aagctggctt taaaattact gataaaataa aagtagaagg
283401 gtcttcagaa ttgtcagcat acatttttgt ctaggtttta tatttgtctc
283451 tgctagatgt tttgaggtgt cagggtttgg cacagaaggt tataaaactg
283501 aacccagctg gaataaacaa aataatcttc gtttgtgtgc cttctttgac
283551 aaaagagatc aatttaatgt tgttagctga atcttctgag ttattggcaa
283601 aaaatactta tgtatttaac tttaagtttc ttacttagat cctggctatt
283651 taaaaaaatg gttagctgga tgcggtggct tacacttgta atcctagcac
283701 tttgggaggc tgaggtgggc agatcacgag gtcaggagtt cgagaccagc
283751 ctggccaaca cagtgaagcc ccatctttaa aaaaaaatac aaaaattagc
283801 tgggcatggt ggcagtggcc tgtaatccca gatacttggg aggctgaggc
283851 aggagaatca cttaaaccca ggaggtggag gttgcacttc agcctgggtg
283901 acagagctag actctatctc aaaaaaataa aaataaaaaa taaaaaatgg
283951 aaattacttt gattgatgac tagttgtgtc ttatatctca gttttcagaa
284001 gtaatctaga tgaacttaaa aaatgaaatg attgagtaca tgtaaatggg
284051 atacatgtta taggtaaaca ttttgtataa tttaaaatct taaaattatt
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FIG. 7 CONT'D

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284101 tttgatgctt attggatatc tgattcattt ccaattaata aatggttatg
284151 atatgggaaa aaataatttt acaaattgtg gattagttct catctatcaa
284201 atgctgatat ctgataagca gctcaggatt tcctacttcc taggtttttt
284251 cactaaaatt taaggttact aagaataaga attctagtta atatataatt
284301 ctgtatataa agtgtgccaa aaaagatgtg tttttattga gaaaaagaat
284351 cattttgtct ggttcagaag ttatctaaag gttaattcaa attatgggtt
284401 tgaaaatgtt atttatgaaa caaggtagaa agtaaccagt aagtacagga
284451 gagagatgtg aacaaagtta tggatatgaa gatgtatttt tggtataggt
284501 tctaaagaaa agattccaaa gaaaatagaa taattatgta tgaaaaagga
284551 tcttgtatgg caaatttttg tcctaaagta aaatgactgg ttatttaaaa
284601 aaaaaaacaa aaaaacaaaa cagaaagaaa aagggaaaat gtagaacaaa
284651 acagaaagtc caagcatgtc acagatggtc tgtgtaagtc atacgttgtc
284701 tgtgtgtctc tcttcatgca aatattcttt aaaacctgat agaaaattgg
284751 agaaatttgg ctaattaaca ttgcttatag ttaaatcttg tagtcttgat
284801 gaaggtaaaa taagaaatat aggaaatatt gtaaagaaat acattggtag
284851 tttggcaatt ttaaaaaata tagttaagca tgaagccaga tttagcgtag
284901 aaccacatct cacatacatg cttgcattga ttcacactac atttgctgtt
284951 ctgcagatag ggctagcact aaagtataat actggtcatg tactgagaat
285001 gaatttctgt tctttgttat ttttttttc tgtgagacgg agtctcactc
285051 tgtcacctag gctggagtgc agtggcaaga tctcagatca ctgcaacctc
285101 tgcctctgtg attcatgtga ttctcctgcc tcagcatccc aagtagctgg
285151 gattatagga gcacaccacc atgcctggct aatttttgta ttttcagtag
285201 agatggggtt ttaccatgtt ggctaggctg gtctcaaatg cctgcctggg
285251 cctcccaaag tgctgggatt acaggcgtca gccactgcac ctgacctaaa
285301 gtgaatttcc taattgcaca aaatgtatgg tagtattggt ggccttaaag
285351 acattaaatt gcatatcagg aagaaaatat tcgtcatgcg attttttttt
285401 ttttttttt ttttggctct gagtaacact gtagcctcca aggtaaactg
285451 agtataagaa aaattttggg ttggtttcct gtttatttct tttgcttcta
285501 atttttattt gctgtttgtt tgcttttggg ttttacttat acatacatat
285551 atataaaatg attgactttt taaaattcta gtggaaggct tttatttggt
285601 tctatgaaca atcattttgt ttcctatgca tttccagcaa ttcaccattt
285651 gccctgttta tcctaagcta cctttgtcaa gcctccaaaa attgatagag
285701 gatactagcc atttaaaatt tgaggccagt ccagcacagc acagcgcggc
285751 ccgcaggagc ctggcctgaa catgtgccca ccagacctcc aaacttgagc
285801 caccatctct gcccatccct agggagccta agcccctgca gcacccctcc
285851 cacctgtctc cagccatggg tgatgttgat gctgctgttt tggagacaac
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285951 acagaaaatc gattcccagg caagatgggc gaataggaac agctctggtc
286001 tgcagttccc aacgagacca acatggaagg tgggtgattc ctgcatttcc
286051 aactgaggta ctcagctcat ctcactggga ctggttagaa cgtgggagca
286101 gcgcatggag ggcaagcaga atcagggtga ggtatttcct cacccagaaa
286151 gtgcaagggg ttggggaact ccctcccata gccaagggaa gctgtgagtg
286201 agggatggtg ttacttggcc cagatactat gcttttccca ctctcttcac
286251 aactcacaga ccaggagatt cccttgggta cctacaccac cagggccctg
286301 ggtttcaagc acaaaactgg gtggccattt gggcagacac tgagctagct
286351 gcaggagttt tgtttcgtat cccaatggtg tgtggaatgc cagtgagaca
286401 gaactgttca ctcccctgaa gaggggggctg aagccaggaa gctgagtggt
286451 cttgctcagc ggatctcacc ctcacagagc ccaacaagct aagatccact
286501 ggcttgaaat tcttgctgcc agcacagcag tctgaagtcg acctgggatg
286551 ctcgagcttg gtgggggtag ggatgtccac cattattgaa gctcgagtag
286601 gtggttttcc cctcacagtg taaacaaagc ctccaggaag tttggactgg
286651 gcagagccca ccacaatgcc acaaagtcac tgtagccaga ctgcctctat
286701 agattcctca tctctgggca gggcatctct gaaagaaatg ccgcagcctt
286751 agtcaggggc ttatagataa aatccccatc tccctgggac agagcacctg
286801 ggggaagggg cagctgtgcg tgcagcttca gcagacttaa atgttcctgc
286851 ctgccagctc tgaaaaaagc agcagatcac ttgacacagt gctcaagctc
286901 ctgctgaggg acagactgcc tcctcaagtg agtccctgac ccccgtgctt
286951 cttgatgggg ggacacctcc cagcaggggt tgagagacac ctcatacagg
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FIG. 7 CONT'D

287001 agagctctgg ctgccatctg gcaggtgccc ctctgggaca aagcttccag
287051 aggcagaagc aggcagcaat ctttgctgtt ttgcagcctc cgctggtgat
287101 acccaggcaa acagggtctg gagtggacct ccggcaaact ccaaaaaacc
287151 tgcagaagag gggcctgact gttagaagga aaactaataa agagaaagca
287201 atagcatcaa catcaacaaa aaggatgacc acacaaaaac cccatccaaa
287251 ggtcaccaac atcaaagacg aaaggtagat aaatccgtga agataaggaa
287301 aaaccagtgc aaaaagactg aaaattccaa aaaccagaat gtctcttctc
287351 cttcaaagga tcacaacttc tcaccagcaa gggaacaaaa gtggatggag
287401 aatgagtctg aggaagtgac agaagtaggc ttcagaaggt gggtaataac
287451 aaactcctct gagctaaagg agcatgttct aacccaatgc taagaacctt
287501 gctaggaagc taagaacctt gataaaaggt tacaggaact actaactaga
287551 ataatcaatt tatgggctag gcacagtggc tcacgcctgt aattctagca
287601 cttagggagg ctgaggtggg tggatcatga ggtcaggagt tcgagatcag
287651 cctaaccaac acgatgaaac cctgtcccta ctaaaaatac aaaaattagc
287701 tgggtgtggt ggcacgtgcc tgtagtccca cctactcagg aggctgaggc
287751 aggagaattg cttgaaccca ggaggcggag gttgcagtga accaagatct
287801 tgccactgca ctccagcctg tgtgacagag caagactcca tctcaaaaaa
287851 ataaataaat aaaaatagaa taaccagttt agagaagaac ataaatgacc
287901 tgatggagct gaaaaacaca gcatgagaac ttcgtgaagc atacacaagt
287951 atcaatagcc aaatcgatca agcagaagaa aggatatcag agattgaaga
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288201 aagacaggcc aatgttcaaa ttgaggaaat acagagaaca ccacaaagat
288251 actccttgag aagagcaacc ccaagacaca taattgtcag attcaccaag
288301 gttgaaatga aggaaaaaat gttaagggca gccagagaga aaggttgggt
288351 tacacacaaa gggaagccca tcagactaat agtggatctc tctgcagaaa
288401 ccctagaagt gagaagagag tgagggccaa cactgaacat ttttaaagaa
288451 aagaattttc aacccagaat ttcatatcca gccaaactaa gcttcataag
288501 tgaaggagaa ataaaatcct ttacagagaa gcaaatgctg agggatttta
288551 tcaccaccag gcctgcctca caagagctcc tgaaggaagc acgaaatatg
288601 gaaaggaaaa accagtacca gccactccaa aaacatacca aaatgtaaag
288651 gccatcaaca ctgtgaagaa actgcatcaa ctaatgggca aaataacaag
288701 ctggcaacat aatgacagga tcaaattcac acaaaacaat attaacctta
288751 aatgtaaact ggctaaatgc cccaattaaa agacacagac tgacaaattg
288801 gataaagagt caagacctat caatgtgctg tattcaggag acccatctca
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289001 aagaagggca ttacataacg gtaaagggat caatgcaaca agaagagcta
289051 actatcctaa atatgtatgc acccaataca ggagcaccca gattcataaa
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289201 aaaattaaca aggatattca ggacttgaac tcagctctgg accaagcaga
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289451 ctcaaaactg cacaaataca tggaaactga acaagctgct cctgaatgac
289501 tactgggtat ataatgaaat taaggcagaa ataaataagt tctttgaaac
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289651 gaaggatcta aaatggacac cctaacatca caatgaaaag aactagagaa
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289751 tcagagcaga actgaaggag atagagacac aaaaaaccct tcaaaaaatc
289801 gatgaatcca ggaactggtt ttttgaaaag attaacaaaa tagatagacc
289851 gctagccaga ctaataaaga agaaaacaga gaagaatcaa atagacacaa

FIG. 7 CONT'D

289901 taaaaactga taaaggggat gtcaccactg atcccacaga aatacaaact
289951 accgtcaaag aatactataa acacctctat gcaaataaac tagaaaatct
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290051 aagaagttga atccctgaat agactaataa caagttctga aattgaggct
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290351 atgaaatact gccaaactga atccagcagc acattaaaaa gcttatccac
290401 cacaatgaag tcggcttcat ccctgggatg caagcctggt tcaacatata
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291201 gccattgact ttcttcacag aattagaaaa atctacttta aatttcatat
291251 ggaatcaaac agagcccata aaggcaaggc aatcctaagc aaaaagaaca
291301 aagctggagg catcatgcta cctgacttca aactatgcta caaggctaca
291351 ggaaccaaaa cagcatggta ctggtaccaa aacggatata tagaccaatg
291401 gaacagaaca gaggcctcaa aaataacact acacatctac actcatctga
291451 tctttgacaa acctgacaaa aacaagcaat ggggaaagga ttccctattt
291501 aataaatggt atcgggaaaa ctggctagcc atatgcagaa aactgaaaca
291551 ccttatacaa aaattaactc gagatggatt aaatatttaa acataagacc
291601 taaaaccata aaagccctag aagaaaacct aggcaatacc attcaggaca
291651 tgggcaaaga cttcatgact aaaacgccaa aagcaatggg aacaaaagcc
291701 aaaactgaca aatgggatct aattaaacta aagagcttct gcacagcaaa
291751 ataaactatc atcagagtga acaggcaacc tacagaatgg gagaaaagtt
291801 ttgcaatcta tccatctgac aaagggctaa tatacagaat ctacaaggaa
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291901 tgaaggatat gaacagacac ttttcaaaag aagacattta ggcagccaac
291951 aaacgtgaaa aaaagctcat aatcactggt cattagagaa acgcaaatca
292001 aaatcacaat gagataccat ctcacgccag ttagaatggc gatcattaaa
292051 aagtcaggaa acaacagatg ctggaaagga tgtggagaaa tgggaacgct
292101 tttacactgt tggtgggagt gtaaactagt tcagccattg tggaagatgg
292151 tgtggtgatt cctcaaggat ctagaaccag aaataccatt tgaaccagca
292201 atcccattac tgggtatata cccaaaggat tataaatcat tctattataa
292251 agacacatgc acacatatgt ttattgcagc actattcaaa atagcaaaga
292301 cttggaaccc acccaaatgc ccatcaatga tagactggat aaagaaaacg
292351 tggcacatac acaccatgga atactttgca gccataatga gttcatgtcc
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292451 acaggaacag aaaaccaaac accgcatgtt ctcattcata agtgggagtc
292501 gaacagtaag aacatatagg gacagggagg agattttcac acactggggc
292551 ctgttggggg atgggggggca aggggagggg aatatcacac actggggcct
292601 gttggggcat gggggggcaag gggagggaaa gcattagggg aaatacctaa
292651 tgtagatgat gggttgatgg gtatagcaag ccaccacggc acatgtatac
292701 ctatgtaaca aacctgcata ttctgcacat gtatcccaga atttaaagta
292751 taaaaacatt tttttgattg gctttgctga tgatcttgag atctatgaga

FIG. 7 CONT'D

292801 gccttaagtt tcttggcaaa taaataaata aataaaagac atttttttata
292851 aggtttgaac agatagtaca tttattttgt tgtttgaaaa gataggtgag
292901 aattaaaatg tttaaatggt gtttatttcc aaggtgattc ttttcattat
292951 tattactatt attattatta ttattagaga tattgtcttg cttagtctcc
293001 caggctgaac tggactgcag tggtgcaatc tcagctcatt gcgacttgcc
293051 ctctcaggtt caatcgattc tcgtgcctca gcctcttgag tagctgggat
293101 tacaggcgtg caccaccatg ccctctaatt tttttatttt tagtagggac
293151 gaggttttgc catgttggcc aggctggtct tgaactcctg acctcaaatg
293201 gtccacctgc tttggcctcc caaagtgctg agattacacg catgagccac
293251 catgtccagc ctatttccaa ggtaattcaa tgaaatcaat aatttgagtt
293301 ggtttcagat ctttttcttt aatgaggaaa aactgtgata tgggtacaaa
293351 attttaatgc tcaggaaaaa ttggccttgt ccttacggaa attatattga
293401 ttgagatttc tttcaaacta ctttaattgt gtttactatt attaacatta
293451 agtgccgggc gcggtggctc acgcctgtaa tcccagcact ttgggaggcc
293501 gaggtgggtg gatcacctga ggtcaggagt tcgagaccag cctgaccaaa
293551 atggcccgtc tctactaaaa acacaaaaat tagctgggcg tggtagcaga
293601 cgcctgcaat cccagctact caggaggccg aggcaggaga gtcacttgga
293651 cccgggaggt ggaggttgca gtgaggcgag attgcgccat tgcactccag
293701 cctgggtgac agagccatac tccatctcag aaaaaaaaaa aaagacacag
293751 ggccagaaat taaaactact caatccctct aggctgaggg actactgcag
293801 aagaggtagg cacatgagat tgtaatggcc ggttttgagg gataagatta
293851 gttcagggcc aggtgccatg gctcatgcct caatcccagc actttgggag
293901 gctgaggtgg gtggatcaca aggtcaggag atcaatacca tcctggctaa
293951 caccatgaaa ccccatctct actaaaaata caaaaaaatt agccgggcgt
294001 ggtggcaggc acctgtggtc ccagctactc gggaggctga ggcaggagaa
294051 tggcatgaat ctgggaggca gagcttgcag tgagccaaga tcatgccact
294101 gcactccagc ctgggtgaca gagcgagact ctgtctcaaa aaaaaaaaaa
294151 agaaagatta tttcagtttt tctataaatt aaacattaac accaaaacca
294201 cactgatgca aggccagcat ctgggacttc ctggagcatt aatctgctcc
294251 ttaatagaaa attgtaaaag attataaaaa gtttatggaa atcttacctt
294301 atggtcaaac tgattacaat tggatagatt tgtttataag gttttattaa
294351 aattagtttt aacattaata atataccata taaaggtaaa atttggtttc
294401 ccttgaacaa aatgttcatg taagagataa gagatttttg agtaaaacta
294451 cagaaaaaga gagggttctt tccctcctag ttggcttcat gctgttttta
294501 ttagggctta ttgtttggga agctgagtct cctcactatc aaagggtaac
294551 ctgttttgta ttatcatttt tgctaaacga atggctattt tatagtgacc
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294651 ctttccaatg gcaaaatttc aagctctaaa ttcagtcttt ttgacctcaa
294701 agtaacttttt ttgggtataa gtttccctga cgtccaagag agacatatta
294751 ggtttatttg gcttatttgt tatgttagaa ttatgcagga agcattgtca
294801 atctgaggtg gtgttcagct tcctttgggt tttatttatt tatttattta
294851 ttatttattt tttagatggg tcttgctctg ttgcccaggc tggagtgcag
294901 tggcacaatc tcagctcact gcagcctctg cctcccagat tcaagtgatt
294951 tttgtgcctc aggcttccaa gtagctggga ttacaggcat gtatcaccat
295001 gcccagctaa tttttgtatt tttagtggag ataaggtttc gccatgttgg
295051 ccaggctggt cttgaactcc tgacctcagg tgatccacct gccttggcct
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295151 tatatgttgt cacagtaatt attattatga tgttaacttg tatgccacag
295201 gaataacaaa ataccctagt taactgtgcc tttaactatg gctgtcttaa
295251 aacttttgtc atccacaatt gtagttttgc tttgatcctt ctcaaaaagt
295301 gacttataat cagctacagt ccagggcttt cttctttggg gaagtttatg
295351 aaaaattcaa cctctcaaat gcaggtttct tataactttg tagactgtgc
295401 cattggatta gagagaaaac ttccagggca ctaattgaaa tgctgatatg
295451 ttcataaaga ttgctaactc aatatgaagc ataccagaag ttgattgcat
295501 ggactgaatt aatggagact gaaataattt tttatggttt ttttgtttga
295551 aatattgctg attctttttg ttttgttttt cagagtctgg agaatttttt
295601 tctttggagc tttttattgc ctctgagtat actttaagta tattgaatac
295651 agtatgcttt cctcaaacag aatttgaggc atagttctct ctatgcctaa

FIG. 7 CONT'D

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295701 tttatccaga atttgtaaat tatttgtgaa tattcttaat tcatggcaat
295751 gtgtttgctt gcataagttc aataagaatc tattttattt tatactgcga
295801 cacagatgga tgaactggct attttcccag gtctttgact gaaatggcct
295851 tgtgagaggt tccagcaagg ccaatttagg agagcctatg tggacagcaa
295901 ttcttgctgc actttgtggg gtaatcaagc cacgtttatg ggattgcagc
295951 ttatttcgca ggtaggtttg tcttgctgag atttgtcttt ggtggaagta
296001 ggggactgga aaaagaaaga ttgtttcaga agaaaaggat agtattagat
296051 taacctttga ttcctggggg gccacagagt cacccatggt atgaggctgc
296101 ccaggatgcc cctcatcaat atcaagcagc cagaatgatc aacaagattc
296151 cccatgaatg aggaattgat atttatgtat atactatatt attcttttt
296201 taagatgggg tctcactcta tcacccaggc tggaatgctg tggtgccatc
296251 ttggctcagt gtaacctctg cctcctggtc caagtgattc tcctgcctca
296301 gccccctgag tagctgggac tacaggtgtg caccaccatg cctgactaat
296351 tttgtgtttt taatagagtt gtggtttcag tatattggcc aggctggtct
296401 tgaaatcctg acctcaagtg atctggctgc ctcagcctcc caaagtgctg
296451 ggattacaat cgtgagtcac cgcacccagc ctatttaaaa aaaaaaaaac
296501 caagaaactg taaaccattt aaatttagca gtggagggtt ttataccaac
296551 tttagtgaca ctaaatgtta gtaagttctg ataacccact atcattggac
296601 caaactgtac tataattttt gtcattattt tagagtgtac tgttagaagt
296651 taaccgtaaa acagcctcag gcaggtcctt caggaggtgt ccaaaaaagg
296701 gcattgttat cacaggaggt gacagctcca tgcctgttat tgcccctgaa
296751 gaccctccag tgggacaaga tgtggagatg gaagacagtg atattgatga
296801 tcctgaccct gtgtaggctg aggctaatgt gtgtgtctat gtcttggttt
296851 tttaacaaaa aactattaaa acgtaaaaac aagaaaaatt taatagaaaa
296901 aagcttataa aataaggata caaagaagac atttttgtac agctgtacaa
296951 tatgtttgtg ttgtaagtga agtgttatta caaaaaagta aaaaagatta
297001 aaaaagttta aacatttata aagttaaaaa gttacagtaa gctaaggtta
297051 atttattatt gaagaaaaca actttaatta attagtgtag cttaagcgtg
297101 cagtgcttgt gaagtctgca gtagtgtata gtagtgccct aggccttcac
297151 attcactcac cacttactaa ctcacccaca gcaatttcca atcttgcaag
297201 ctccatttat ttatggtaag tactctatac aagcagatct tttaaaaaac
297251 attttatact atatttttac agtatctttt ctatgggcct gtaaggcctg
297301 tgggttctcg cgtcccccag ctccccccgc agccggctcc tcagtggtcc
297351 gctccggttg ccaggtgcgg attctgttcc taactgaagg ctgagtgttc
297401 ttcgccatta actgtggccc cgacaggcct gggttactgc ggccaccgcc
297451 acagcagcct tggcgctatg gaggagcccg gggctacccc tcagccttac
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297601 tatgtgcagc tgtccttgga tttgttgctg ttccctttt cttgtggaga
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297701 tgctgtagcg ctttctggac taattgaaga aaaatgtaga ctacttgaaa
297751 aatttagcct tgttcaaaaa gagtatgaag gctatgaagc agagtcacct
297801 ttagaggatg ccagctttga gaaggaggca acagaagcac aaagtttgga
297851 ggcaaactgt gaaaagctga acaggtccaa ttctgaactg gagcatgaaa
297901 tactctgtct agaaaaggag ttaaaagaag ataaatctaa acattctgaa
297951 caagatgagg tgatggcgga tatttccaaa aggatacagt ctctagaaga
298001 tgagtcaaaa tccctaaaat cactgctagc tgaagccaaa atgaccttca
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298101 ttgaatgaaa attctcaact tcaggaaagc cagaaacagc ttttgcaaga
298151 agctgaagta tggaaagaac aagtgagtga acttaataaa cagaaaataa
298201 catttgaaga ctccaaagta cacgcagaac aagttctaaa tgataaagaa
298251 aatcacatcg agactctgac tgaacgcttg ctaaagatca aagatcgggc
298301 tgctatgctg gaagaagaca taacagatga tgaaaacttg gaattagaaa
298351 tgaacagtga atcggaagat ggtgcttact tagataatcc tccaaaagga
298401 gctttgaaga aactgattca tactgctaag ttaaatgctt ctttaacaac
298451 cttagaagga gtaagaaacc aaatctatat tcagttatct gaagttgata
298501 aaaccaagga agagcttaga gagcatatta aaaatcttca gacggaacaa
298551 gcatctttgc agtcagaaaa cacatatttt gaaagtgaga atcagaagct
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FIG. 7 CONT'D

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298601 tcaacagaaa cttaaggtaa tgactgaatt atatcaagaa aatgaaatga
298651 aactctacag gaaattaata gtagaggaaa ataaccggct agagaaagag
298701 aaattttcta aagtagacga aatgatcagc catgccactg aggagctgga
298751 gacctacaga aagcgagcca aatatcttga agaagaactt gagagaacta
298801 ttcattttta tcaagggaag attatatacc atgagaaaaa agcacatgat
298851 aattgtttgg cagcacagac cgctgaaaga aacctcaatg atttaaggaa
298901 agaaaatgct cacaacagac aaaaattaat tgaaacagac tttaaaatta
298951 aatttttaga aaaagatcct tatgcacttg atgttccaaa cacagcattt
299001 ggcagagagc attcctcata tggtccctca ccattgggtc ggccttcatc
299051 tgaaacgaga gcttttctct atcctccaac tttgtcggag ggtccactca
299101 gactctcacc tttccctcca gggggaggag gaagaggccc aagaggccca
299151 gggaatcctc tggaccacca gattaccagt gaaagaggag aatcaagctg
299201 taataggttt actgatcctc acaaggctcc ttctgacact gggcccctgt
299251 cacctccgtg ggaacaggac cgtaggatga tgtttcctcc accaggacaa
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299401 cttctttgga taaaatggat gggtcagtgc attcagaaat ggaattcagt
299451 ggaaatgata ccaaagataa tcttggtaat ttaaatgtgc ctgattcatc
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299551 ttgctccaat cagaggtccg ttgtttccag tggatacgag gggcccgttc
299601 atgagaagag gacctccttt ccctccacct cctccaggaa ccatgtttgg
299651 agcttctcca gattattttc caccaaggga tgtcccaggt ccaccacgtg
299701 ctccatttgc aatgagaaat gtctgtccac tgaggggttt tcctccttac
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299901 aagtcatttt gactattctc attttcagtt gaagtaactg ttgttacttc
299951 agtgattaca cttttgctca tattcaaact taatggaatt ataattctca
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300051 attatttcca tatcatttta ttctagatag tataactatt ttaatttgtt
300101 taactaatcc actattatat aaacaacagt gggagattta tagatgtaat
300151 cttgcaggtg gggaggcttt acatttgaaa ggccatggca ttatgccaag
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300251 attaaataaa ttttacttga ttaaaaaata tatataggtt gcattattct
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300401 cactgaatag ggaggcagta tggtcagcga gaaggcagga gtgatggaaa
300451 aacatgggca agagccttta cagtggcttc catgggaagg aatgagtgag
300501 gcaaggtgag cagggttaag gttagctatt ataatttgag taatttcagc
300551 aggctctggg tataagggct gtccctagtt gtctggtacc tggccctggg
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300901 atgtcaaagg ccattcaaga cagcagaagc cacaaggcca cgtaaagctt
300951 cagtaatatc taaaagaaga tattaagagt aatatctccc ctagatatta
301001 caaatcatat tatcaaagaa tgtacacccc cgtgatattg gagaaatacc
301051 tcccttagaa attacaaaga atttcatcac aaggtgtacc ctcactgtga
301101 tattaggagt aatatctccc ttatatatta tgaataatat cattacgggg
301151 tgtataccca ctgtgatatt aggaataata tctcccttag atattatgaa
301201 agggaccaag aaaccttcta tttcattgtt tgctgtgcct agcatccatt
301251 ctgtagatca ctccgttgtt caagtggctg ctgaggctgt agccattacc
301301 ttctcatttt ggtcataaga agatggaagc taggaagaaa gtacacatcc
301351 aacccttaa agatagttcc tggaaattac acatatcaca tctgctcaca
301401 tcctgtgggc cagaagaaat aaataacata gtatatctag ctgcaagtga
301451 ggctgaaaaa tatcattatt ccctataacc acgtggtcag ctaaaaacaa
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FIG. 7 CONT'D

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301501 aaaattgcat tactaaagaa gagtaaaaca gaacagatat tgaaagataa
301551 caagcagtct ctgacgcagc atctaagaat aattattcct tttcctgata
301601 tcctgagcac taagatctag ctcaaagttc agccttcact ttgacagcca
301651 ttagagaaag taaatgcact tcataaacta gggaaatgag aattaatgaa
301701 tctcagggtt cccctccgcc ctttttttgg agacggattc tcattctgtc
301751 acccatgctg gagtgcagtg gagctgcgat cttggctcct gaaacctcca
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301901 acagggtttc actgtgttgg ccaggctggt ctcgaactcc tgacctcaag
301951 tgatctggcc accttggcct cccaaagtgc tgggattaca ggggattaca
302001 gggggagcca ccacacccgg cctttttttc cctttgtaaa aaccctcttc
302051 attaatacta agagtgttct tgaaagctac agagaaataa atctcccttt
302101 cagtgaattg ataaggccct ggttatttcc tctttacttc acaagatttt
302151 ttttttttt gagaccggat tttgctctgt tgcccagact ggagtgcagt
302201 gggacaatca ttgctcactg cagccttgac atcctggact caagcagtcc
302251 tcctgcctca gcctccccag tagctggaat gacaggcaca gtccacaaca
302301 cctggctaat ttttaatgtt taatttttg ttgttgttat agatacaggg
302351 tctcaccacg ttgtccaggc tagtctcaaa ctcctgggct caagacatcc
302401 tcccacctca gcctcccaaa ctgctgggat tagaggcttg agtcatcatg
302451 cctggcgcac ttcacaagat ttaagacatt gtctcagatt ctcaacatct
302501 cctggacctt ggccacagcc tcctatttgt tttcttgtct ctgctctctc
302551 cctactccaa accattgcct acccttccgc tggagttact aaatctgcct
302601 atgtaaaact ctcctttggt tcctagagga taaaggatta cttccttagc
302651 ctacatatga gaccctccac tgtgggtccc agcctccttt caccccctgcc
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302751 cttcctctgc ctggaatgtg cgtctcttta ggttgagact atcctgttta
302801 tctctgaaaa actggttcta ttcctccccc atcccaagaa agaacaggta
302851 attgttccct ctgctatgtt cccattacac tttctttgta gagtcacact
302901 gtaatgatct cttcacagat ctcttgtcct gatcactctg taagctcctc
302951 agaggcaaag aacatcatgt cttaccaagt tacctacata ccaagggctg
303001 tctggtgcct gacgcaaaca gaacagaatg aagtagaggc tcagcaaaag
303051 ctagtggtcg gccaggagtg gtggcccatg tctgtaatct cagcactgtg
303101 gaaggtcaag gtgggtggat cacctgaggt caggagttcg agaacagcct
303151 ggtcagcatg gtgaaacccc acgtctacta aaaatacaaa aattagctag
303201 gcgtggtgtt gggtgtatgt aataccagct cctcgggagg ctgaggcagg
303251 agaattgcct gaacccagaa ggtggaggtt gcagtgatcc tagatctcat
303301 cactgcactc cagcctgggt gacaaggtga aattccatct caaaaaaaaa
303351 aaaaaaaaaa aaagctggtg gtcagatcga tggaaacaaa ttcatgaaaa
303401 tgtttccttc aacctgagaa agctgattaa taaaagaaaa acatgtaaaa
303451 taaaataaaa tgtttctgtc tggcaatgat cagaatcata tttgcttttc
303501 ttttcttttc ttttttttt ttttttgagt ttctctcttg tcgcccaggc
303551 tgatgtgcaa tggtgcaatc tcggctcact gccacctccg cctcccggag
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303751 ctccaaaaat gctgggatta cagacatgag ccactgcgcc tggtgcatat
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303951 ggggagaaat gggtggctca gccactagaa ccaactaaga agaccacaat
304001 tattaaaatt ttaattattt atttagaaac agggtcttgc tatgttgcct
304051 gtgctggagt gcggtggcta ttcacaggca tgatcatagc tcactaagcc
304101 tcaaactcct gggttcaagc catcctccag cctcagcctc tcaagtagct
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304201 tagagctatc ttctagtggt acatctgcag ttttaccttt agtaacagtg
304251 ccacattctt cttcattcta gaccactgca ttctgagcca tcagtataaa
304301 catttatttc cctgaatgag atgaagccaa agacctactg ccttaataat
304351 ggacagacag tggaacagag catgaaatag ctgtttgtcc tgaaaagggt
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FIG. 7 CONT'D

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304401 ttttttttt tttaggaaac agcagagact gtaaagatgc tgaagcctct
304451 gtccctcttc cctggagacc aacaaccttc atttccagtc tcagttcctg
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304551 ctatgaatca gggaggaaaa tgaacagtgg tactgattga gggaagcttt
304601 cttgaggttt tctgtttcct tatgaagtat ctggatgaca agcttccctt
304651 caatgcattc tcaggggctt ggtctttacc cagagcagag gctgagaaaa
304701 ttattaagat ttctgaagca gtctgtccca ccctaacaca tcacaaatgc
304751 gagcatttga agaacaagag ccacatgcag ttatttattt atttatttat
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304951 caccacaatg ctcgactaat tttttgtaga gacaaggttt ttccctgttg
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305051 tcccagagtc gggggattac aggcttctgc acccagccgc cttctctttt
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305201 aaacactggt gttactatgg tttatttagt ttgctggatt ccaacaccaa
305251 atgagagagg tattctattg tagaaaaaca gaaatcctat tggatataaa
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305351 ttaagagtat gtgggctagg tgtggtggct cacacctgta atcccagcat
305401 gttggaggcc gaggcaggtg gatcacctga ggttgggagt tggagaccag
305451 cctgacgaac atggagaaac ctcgtctcta aaaatacaaa attagccggg
305501 cgtggtgacc catacctgta ttcccagcta ctctggaggc tgaggcagga
305551 gaatcacttg aaccctggag gaggaggttg cagtgagcca agattgcaca
305601 ttgcactcca gcctgggtaa caagagcaaa actccatctc aaaaaaaaaa
305651 aaaaaagatt atatgaagtt taaaacttca tacctttaag taagattata
305701 atgttcttat aacatattag ccagctgaag cggctcacac ctatatccca
305751 acactttgga aggctgaggc aggaggatcg cttgagccca ggagttggag
305801 aatagactga gcagcaacat agggagacac acactctata atctttttt
305851 ttttttttg agatggactt tcactcttgt tgcccaggct ggagtgcaac
305901 ggcgtgatct cggctcaccg caaactccac ccccggattc aagtgattct
305951 ccagcctcac actcacaagt agctgggatt acaggtgccc gccacaatgc
306001 ctggcttttt gtatttttgt atgttttttt ttttttgag acagagtctg
306051 gctctgtcac ccaagctaga gtgcagtggc atgagcttgg ctcactgcaa
306101 cctccgcctc ctgggttcaa gcgatgcttc tgcctcggcc tcttgagtag
306151 ctgggattac aggcatgcgc caccacaccc agctaacttt ttagtagaga
306201 cggggtttca ccatgttgat caggctggtc ttgaactcct gacctcgaga
306251 tccactcccc tcggcctccc aaagcgctgg aattacaggc gtgggccaat
306301 gcgcccagcc cacattttgt atttttagta gagacagggt ttcaccatgt
306351 tggcccggct ggtctcgaac tcctgacctc aattgatcca caccacttgg
306401 cctcccaaag ggctgggatt gcaggcgtga gctaacatgt accaactaca
306451 aaattgtttt ttttacttgt taggtgtggt ggtgagcccc tcctgtgcat
306501 acaccctgtg atatattatt cgtaatatct aaaagatttt actcctaata
306551 tcacagtggg tgtataccag tgatattatt cataatatct aagggagatg
306601 atactactcc taatatcaca gtgggtgtac accctgtgat attattcata
306651 atatctaaaa gaagatatta ctcctattat cactgtgggt gtacactctg
306701 tgatatgatt cataatatct aaaagaagat attgctccta ataccacggt
306751 gagtgtacac actgcgatac tatttgtaat atctaaaaga agatattatt
306801 tgtaatacct agaagaagac attgctttta ataccacggt aggtgtacac
306851 cctgtgatac tatttgtaat atctaaaaga tattatttat aatacctaga
306901 agtagacatt actcctaata tcacagtggg tgtatactct gtgatattat
306951 tcatagtagc taagggagct attactccta atttcacagt ggctgtacac
307001 cctgtgatat tttttataat atacaaggga aatattactc tagcatcaca
307051 gtgggtgtac accctacgat gtacacccta tgatgtttct ttttttttt
307101 ttttttgag actgagtctc actctgtcac ccaggctggt gtgcagtggt
307151 gtgatctcag ctcactgcaa tctccgcctc ccaggttcat gccattctcc
307201 tgcctcagcc tcccgagtag ctgggactac aggtgcctgc caccacgcct
307251 ggctaatttt tttgtatttt tagtagagac agggtttcac cgtgttagct
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FIG. 7 CONT'D

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307301 aggatggtct caatctccca acttcgtgat ccgcctgcct tggcccccca
307351 aagtgctggg attaaggtgt gagccactgt gcccggccta agtgtgatat
307401 ttcttttaat gtcacagtgg gtggacagtc tgtgatatta ttcgtaatat
307451 ctaagggaga tacaacttct aatgtcacag tgggtgtaca ccctgtgata
307501 ttattcgcaa tatccaaggg agatattact cctaatgtca tagtaggtgt
307551 acacccttta atatttttag gaatattcaa gttagatatt attcgtaatg
307601 tcacagtggg tgtacaccct gtgatattat tcataatatc caagggagat
307651 attaggacta atatcacagt ggttgtacac cctgtgatat tttcaaaata
307701 tccaagggag atgttactcc taatatcaca gtgcatttat accctgtgat
307751 cttattctta atatccaaga ttgatattac tcctaatatc acagtgtggg
307801 tacacccagt gatattattc ataatatcca aggggatat tactgctaat
307851 atcacagtgg gtgtacaccc tgtgatatta ttgctaatat ctatgggaga
307901 tattactcct tttatcacag tgtgtgtgta taccctgtgt gtacatcctg
307951 tgatattatt cgtaatacct aaaagatatt gctaaaagca ctccttgtgg
308001 tttgcgcatg ttgagatgaa aatgagatgg aggtcatgat ctttttaagg
308051 gtggaaaagc atgaacacaa agtatcattt cataaagcca attgcagcat
308101 ctctgtccat ggggcttcag gggaagagat gaaacctttg ttgagattct
308151 accatgtggg tcaggcaggg acacagagtt atttatggga cagcccttgt
308201 cttagttggt gagaggagga aaaaggagca aaaacctgaa aggggatgtg
308251 cagggccagg atgcgagtgg gggtcgcatt ccagtaatag ctaagtctgg
308301 gcaaggggga ggaccaggct gtgagatggt ggtggatgga ggggtacaag
308351 gggaatggct ctgaaggatg tattggtaga tgtaaaagaa ggtgtccagg
308401 ggtctggcct tgctggagga cttcggggga tggtagcagc agcataaata
308451 acatagaagc atcaaatagg agactaagac ttcaaaagtc aatcaagaag
308501 tacagagggg aaagtgcaat ttagggctag atcatggaat gaggagatgg
308551 gccaaatgct ggggatgggg ggatatcatt gtagaaaggg ctgagatggc
308601 tttggaggga gttcccctaa cccaaaggtt ctctaaagaa agtgggagtg
308651 atttaaaata cacttgaagg aaactataaa actgcctgag aaataaaaga
308701 agacccaaga tttcaaaaaa tcctgggtca gatgtggtgg ctcacctctg
308751 tatcctagca ctttgggagg ctgaggaggg acgatcgctt gagcccagga
308801 gttcgagacc aacctgggca acagagtaag acccctcctc cctgtgaaaa
308851 aatacaaaaa tgtgtctggg cgtggtggca actgcctgtg gtcccagcta
308901 ctcaggaggc tgaagtggga gaatcacctg agcctgggag gttgaggctg
308951 cagtgagctg agattgtgcc actgcactcc agcctgggtg acaaagtgag
309001 aacctgtctc aaaaaagata acagaagatt gggtgcggtg gtgtgtgcct
309051 gtagttccag ctacttggga agagagctga gtggggagaa ttgcttgagc
309101 ccaagagttc atggctgtag tgtgctatga tggtgcctat gaatagccta
309151 ctgcactcca gcctgggcaa catagtgaga cctccatcta tacagaataa
309201 aagataggag aagggtaggc ctagaaatgc cgcatagtgg aacagttaat
309251 aagagtctct gttggaggcc acctgggttt gaatttttat tctgccactt
309301 ctgccatctg aactgggaca gtttctccat ctataaaatg ggggtgattg
309351 ttcccatctt ataaagtcat ttgaatatta aatgagccaa tgtgtgtgag
309401 gttcttaaaa caacgtctgg catgtagtta atgctcaatt ttattttctt
309451 ttgtggtctc tttgaaatgc agaagcaagt tacagtatta tgcctataac
309501 taacattcag ttattttcct tcctacattc attagataag tatttgacaa
309551 agtgttgcac agccccttgt tctaagaaaa agagttcttg gattatgtgt
309601 tgtggtgatg ttgcacgtat acactctctc ttggttagca gactggcttt
309651 tggaagtccc acagtaaata caggtaactg ttgacctcct gagctagtgt
309701 tctataaaac acactttgag gaaacactgt gttgtataaa tctagatcag
309751 agaaaaggtt aaacgacaga tcatctcaaa atctcaaata ggtctctttt
309801 tttttctttt ttaagagtcc tcgtctcact gtcatccagg ctggagtgca
309851 gtggtgtcat gaccacagct cactgcatgc agcctctaac tcctagggtc
309901 aagcgaccct cctgcctcag ccttctgagt agctaggact ataggcatcc
309951 aacatcatgc ccaagtactt ttttgtaaat ttttttttt tgagacacag
310001 tctcgctctg tcgcccaggc tggagtgcag tggcgccatc tcagctcact
310051 gcaagatctg cctcctgggt tcacgccatt ctcctgcctc agcctcctga
310101 gtagctggga ctacaggcgc ccaccaccac gccaggctaa ttttttgta
310151 ttttttagaa gagacggggt ttcaccgtgt tagccaggat ggtcttgatc
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FIG. 7 CONT'D

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310201 tcctgacctc gtgatccgcc cgcctccgcc tcccaaagtg ttgggattac
310251 aggcctgagc cactgcgccc ggccaatttt ttgtacattt tttaagagat
310301 gggatttcgc tatgttgccc aggctggtct caaactcctg gcctcaagtg
310351 atcctcctgc ctcaatcttc agagttgctg ggattaacag gtgtgagcca
310401 tcatgcctgg ctctattcaa atgggccata tttttatagc cattaaaata
310451 gattcaagta aaacattagt atttggagat tagatgtatt gtttatttca
310501 agacacatct atcaactgaa ttagtagtta ttttgaacaa tcaacattta
310551 atgatgattg cagcaattac tcaaataatt aaagcaaaag tagaattttc
310601 gcaataatta ctgaagcaac tgtgcttgac tagagctgcc ttttgtgggc
310651 tttaagtctt tatggttccc ttttttttt ttttttttt ttctgagaca
310701 gagtcttgct ggagtgcagt ggtgcaatct cggctcactg caacctccac
310751 ctcccgggtt caagcgatgc ccctgcctca gcctccagag caggctggga
310801 ctacaggcgt gcaccaccac gcctgactaa ttttttgtat ttttagtag
310851 aggtggggtt tcacgatgtt ggccaggatg gtctcaatct cctgaccttg
310901 tgatccaccc aactcggcct cccaaagtac tggaattaca ggcgtgagcc
310951 accacgcccg gctgtaacaa gccttttcta aatatcaatt tagttggaga
311001 aatagtttag gaaaaaattc aagagtgcca actacaaaag atagatgtag
311051 taaacttcat tagtttcaag aattgtgaat attaagagcc ttggtgtggc
311101 cgggcgcggt ggctgacacc tgtaatccca gcgctttggg aggctgaggc
311151 aggtggatcg caaggtcagg agattgagac catcctggct aacatggtga
311201 aaccctgtgt ctactaaaaa tacaaaaatt tagccgggtg tggtggcggg
311251 cgcctgtagt cccagctact cgggaggctg aggcaggaga atggcatgaa
311301 cccgggaggc ggggcttgca gtgagccgag attgtgccac tgcactccag
311351 cctgggcgac tgatcaagac tctgtctcaa aaaaaaaaaa aaacaaaaac
311401 aaacaaacaa acaaaaccca gagccttggt gtatgtagtc caatctaatt
311451 acaggaatag aacacaaaca caaaaaaaac aaatgttttc tcactatctg
311501 cccttagggc cacacctcct tgtctccatg taaccaggga tgatggtggg
311551 tgaataatta actgctgttt attggtgcta atgaagaaca gtcacataaa
311601 taatacaggc tcttagactc caggtcagta ttcccatcct ggtcacccca
311651 gtgccaggta ccagacaaat agggacacaa ccactatgtc ccagagcctg
311701 agaaattatt taagcaagtg aatcctaaat tggcttacct tgtcttgcct
311751 gtggaaacca caacaaagac tcgtggccat gctttctcct cgcctctctg
311801 cctcttgatg gatcccagcg cttgctcgtg gcattgcatg gtgtggcatg
311851 ccccagctct tggaaactgt gagttacaaa ctacttttc aagggcagtc
311901 atctcctgat ctgttagctt caccatatgc tatagcttga atgtgatccc
311951 cacagttcat gtgctggaaa cttgatcctt tgtggtagtg ttgggagttg
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312101 tccctttcac catgtgatga tgctttccac catgggatga cacagcaaga
312151 aggccctcag caaatgctgg catctttatc ttggacttcc cagcctccag
312201 acatgtgaga tacaaacttc catatattat atattacctc atctgtggta
312251 ttgtgttcta gcagcccaaa atggactaag acatgatacc tgaataagaa
312301 taaaccctac atttttaaaa acagcctgtt agaacaattc aagggaccgg
312351 aagtttgcat tatgttgcaa ggcaacagtt tcagcagtga actgatggca
312401 aagttcttta ccatcttaag ctgaaaatgg cttcccggta catttcaata
312451 attctcagcc tccagggcaa tagagaatga atctattcat gtttttcaag
312501 caatgaacta tcagatatct gaatacataa cggtctttcc tcagatacct
312551 ttacaagaag cacacacatc aatctatgga tttctttgaa catttttcc
312601 actcttattc ctataataat tagcattttg caagtcattt tgacttcagt
312651 tacccagtga attgagtgtt ttcttccaac attctcaggt ttttcaaaga
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312751 atagccttca ctggtttatc agtgtctttt ttttttttt ttttttttt
312801 ttgtgagaca gagtttcgct ctgtcagccc agactggagt gtagtggcac
312851 catctcggct cactgcaagc tccgcctcct gggttcacac cattctcctg
312901 cctcagcctc tcgagtagct gggactacag gcacccgccc ccacgcccgg
312951 ctaatttttt tgtattttta gtagagatgg ggtttcaccg tgttagccag
313001 gatggtctcg atctcctgac ctcgtgatcc acctgccttg gcctcccaaa
313051 gtgctgggat tacaggcgtg agccaccgtg cccggccatc agtgtctttc
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FIG. 7 CONT'D

313101 ttaaaatgtg gtgtatgcca ggctcggaga ctcacacatg taatcccagc
313151 actttgggag gccaaggtgg gtggatcact tgaggccggg agtttgagtc
313201 cagtctggcc aacatggtga aaccccgcct ctactaaaaa tacaaaaaaa
313251 taaaattagc tgggtatggt ggtgcatgcc tgtaatccca gctactccgg
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313351 accgagatca aaccactgca ctccagcctg ggagacagag tgagactcca
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313451 cacacagggc ttcactggca ctattccctt cccgatctag agactgggta
313501 tattctattg cttggcatgc cattgacaaa catgtctggg tccttccttc
313551 taaataaatc accatgaaac agattgtatc ctataactaa gcaattatac
313601 agttgctttt ttttttttt ttgagacgga gttttgctct tgttgcccag
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313751 gtgtgccacc acgcctggct aattttgtat ttttagtaga gacagggttt
313801 ctccatgttg gtcaagctga tctcgaactc ccgacctcag gtgatttgcc
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313901 ggccactacc gtagcttttt gaatttttag ttatggatgt aaaattcacc
313951 atcgttaagt atacaggcct cattacagca tgcttctttc cttttactta
314001 aaaaaagttt taaaactcaa gaacccccaa attttttttt tgtcctgctc
314051 tgttgcctag gctggagtgc aggggtgcca tcatggctta gtgcagtttt
314101 gaccaccagg gttcaagtga ctcttccacc tcagcctccc gagtagctgg
314151 aactacagat gtgttccacc atgcccagct aattaaaaaa catttttttt
314201 ttttttttgta gagacagggt gcagcgatgt tgcccaggct ggtcttgaac
314251 tcctgggctc ctgcctcggc ctcccaaagt gctgggttta caggtgtgag
314301 ctaatacatg ttaactgtag aaaaatgatc agataaatat gaaagagcta
314351 gttctctgta ttcttattcc caagatataa tattttggta tacattactt
314401 catacgtttt cctctgcgta aagctctagt ttttttaatg gataaaatta
314451 cacatacaaa tgttttaaca acttgctttt ctcaattatt aatatatatt
314501 ggatagtcta gagccatact taagaatgaa ttacaattat cagcagagtt
314551 ccttgagggc agggactatc ttttttttt ttgaggcaga gtcttggtct
314601 gtcgcccagg ctgttgtgca gtggtgcaat cttggctcac tgcatgactc
314651 actgcaagct ccacctccca ggttcacacc attctcctgc ctcagcctcc
314701 tgagtagctg ggactacagg cacatgccac catgcctggc taaatttttt
314751 tttggttttt ttttttttgt atttttagta gagatgggat ttcactgtgt
314801 tcgccaggat ggtcttgatc ttctgacctc gtgatcctcc cgcctcggcc
314851 tcccaaagtg ctgcgattac aggcgtgagc caccgtgccc agccttaggg
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315001 aattcctgtt gcctagtgat atcagagtca tcatgacatc ttagtgtaac
315051 atgttactca tgtttgtggc gatgctggta taaacaaacc tactgcactg
315101 ccagtcatat aaaagtataa acacacagtt atgtatagta cataatactt
315151 gataatgata gtacataatt atgttactga tttatgtata tactctatta
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315251 ggcgctatct cggctcactg caacccctgc ctcccggttc aagtgattct
315301 tctgcatcag tctcctgagt agctgggatt ataggtgcgt gccaccaggc
315351 ccgactaatt tttgtatttt tagtagagat gtggtttcag catattggcc
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315551 actttagtga cactaaatgt taataagttc tgataaccca ctaccattgg
315601 accaacctgt actataattt tttgtcatta gagtgtactc ctacttacat
315651 atatataaaa agttaattgt aaaacagcat caggcaggtc cttcaggagg
315701 tgtccaaaag agggcgttgt tactataggc ggcgacagct ccatgcctgt
315751 tatcgccccct gaagaccttc cagtgggaca agatgtggag gtggaaggca
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315851 tatgtcttgg tttttaataa aaaagtatta aagagtaaaa aataaaaaaa
315901 ttaaaagaag cttataaaat aaggatataa agaaaatatt tttgtacagc
315951 tatacaatgt gtttgtgttg taaatgaagc gttaatacaa aagaataaaa

FIG. 7 CONT'D

316001 acgttaaaaa agtttaaact ttttttttt ttttttttt tgagagtgag
316051 tctctctctg ttgccaggct ggagtgcagt ggcgcgatct cagctcactg
316101 caacctctgc cttccaggtt caagcaattc ttctgcctca acctcctgag
316151 tagctgggac tacaggtgcc tgccaccatg ctcggctaat ttttttgtat
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317051 tcactattta ctttaataat ttggtcccaa atattttaaa agagcaagtt
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317201 aacagtgtct ccctgccagg ttgcattaat aatgcaaatt aatataagta
317251 gtagttgatt atattccatt tacgagtact atgcttggtt atgcctgcat
317301 atagaaaaat tccagtttgg attacagatt cttttctcac aactctttca
317351 gtgttattgt attatctaaa ataaattatt gatttaatgt ctcttaccac
317401 gttcaagatt tcacttacat ctccagctat gcttttggtc actatctaga
317451 cttacattaa gtaaacataa agtaaaaaga tgtgagcaaa acaccatgca
317501 tttgtctttg ttaatgattt agaaaagcct taattcaaat tataatttta
317551 taccattttt aacccataat agtttgtaat ccaagttaca acatagccca
317601 gtaattttgc ctgatgagcc aaaggcagtt aaaaaccaaa ttctttttct
317651 ggtttttaat atgtaaactg attgttcata aaattttcat cgtttcacat
317701 atttaaccta tctcccaaag tttaaatcac taaaataaca tggaaaatat
317751 atcattgatt aattttcagt ctgagtatga aaaactaccc tagtatggac
317801 aaatggactt ttgcaataag cagaatcaag acagtgaaca atgcctcgtt
317851 gagccaggaa aaaatgcaag tctttgcatg ttaaaataca agaatgtttt
317901 atgtcctatc tacatttata tttatctatc attatatatt taaggtatgg
317951 gtattatact gtattagtat cattctattg gcttaacaaa aggttttatt
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318051 agtcttgctc tgtcgtccag gctggagtgc agtggcgcca tcttggctca
318101 ctgcaagctc cgcctcccag gttcacgcca ttcttctgcc tcagcctccc
318151 aagtagctgg gactacaggc gcccgccacc acgcccagct attttttttg
318201 tatttttta gtagagacgg ggtttcacca tgttagccag atggtctcga
318251 tctcatgacc tcatgatccg cccgcctcgg cctcccaaag tgctgggatt
318301 acaggtgtga gccaccacgc ccggcccaat gtacttttta aaatagactt
318351 tatttattta ttgagatgga gtctcactct gtcacccagg ctggagtgca
318401 gtggcacaat ctcagctcac tgcaatctgt gcctctcggt ttcaagtgat
318451 tctcgtgcct cagcctcccg agcagctggg atacaggtgc ctgccacctc
318501 tcctggctaa tttttgtatt ttttagtaga gatggggttt tgctatgttg
318551 gccaggctgg tctcaaactc ctgacctcag gtgatccacc cgcctcggcc
318601 tcccaaagtg ttgggattac aggcgtgagc caccacttcc ggtcaactta
318651 gtttttaga acagtttgta tttatagaaa aagagaagac agcattgagt
318701 tcccatatat aaactctcct agtttctcct gttaacatct tacgttagta
318751 tggttcattt gttacaattc atgaatgata taatgataca ttattaacta
318801 aagttcatgg tttattcaga tttccttagt tttcacctaa tgttcttctg
318851 ctccagcatc ctatccagtt accacattac acttgtcatg tcctcttaag

FIG. 7 CONT'D

318901 ctcctcctgg gtgtggcagt ttccctgact ttccatgttt tggtgaccct
318951 gaaagttttg agtagcatca ttaagtgttt cataggatgc ccctctgaat
319001 ttgtctgatt tctcatgatt agactaaggt tatgggttgt ggaaggacgg
319051 ccagctcaat gtaattttct taagataaat ttgatatgta tggagataaa
319101 aacacaccta gatttcacca aactgttgtc atggacataa acttcagtat
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319251 cagtggctca tgcttgtaat cccagcactc tgggggggccg aggctggcgg
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320101 agcctggaca acatggtgaa accccatctc tactaaaaat acaaaaatta
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320251 cgtgccactg cactctagcc tgggtgacaa ggtgagactc tgtctcaaaa
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320401 ttattttaat ttttttgag acagagtctc actctgttgc ctaggctgga
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320501 gccattctcc tgcctcagcc tccagagtag ctagaactac aggcgcccgc
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320801 agacttggag aggagaaaat aggatgagca gcaaaactac aatttggatc
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320901 ttgataaagg agggaaatgt atgcatcctt gccatgctca tttgaaaaca
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321051 aagaggattc acttatctct gaactgaaat aatcacgggt gatgtgaatt
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322051 aaagaaagaa aataaattag aagcaaatac tttaatttca atgaatacat
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322751 attattgata tatgctacag cataaatgaa tcttcaaata attgtgctga
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324201 caatctcctg acctcgtgat ccgcctgcct cagcctccca aagtgctggg
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324301 cacacttctt cagtgttatg cagtcttttt ctttctacag gctgagtgta
324351 agaagagaca aaatgaatga ttggattgat caaggattag ggatggaaga
324401 caaaagagta aagggattta agttttatgt ttatctttga taggatcagg
324451 ctattaaaac acttggttta attggactga tttatgagtt caatttatga
324501 aatataattt agtatctata accttagtac attacaaata atgctgaata
324551 aaagaaacag tttagagcat taaacttatt tgctacagtt aacttgtata
324601 actgtcactc tactgatatt tattttattt ctcaggctaa cctatttcaa
324651 atatcaagct aaatttccat ttactcaagt aaataaagga attgctttta

FIG. 7 CONT'D

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324701 ggcttaccca atatgcaaca ctaaattgag ttttaaaaca cacatttaca
324751 tgcaaggaca cagaaggtaa aatgactgaa aagtaatttt aggagaaaag
324801 aaggctaatg aaaaccttaa actaaaaggt aatcacaagc tttggctatt
324851 atcatattat tatttatatt tgttattgta taattctgac atcccagttt
324901 gtcatcattg atactgctat ttttatttta gtattttaat tttattttgc
324951 ttttgagaca gggtcttact ctggtgccaa ggctggagtg cagcggcacg
325001 atgatcactg ctcacaggag acttgacctc cccggctcaa gagatcctct
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325601 ttttttgtgg agactaagtc ttgctctgtc gcccaggctg gagtgcaatg
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325701 cctgtctcag cctcccatgt aactgggatt acaggagtgc gctaccacgt
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325801 caggctggtc tcaaactcct gacatcaagt gatccaccgg cttcggcctc
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325951 ttacaaaacc aaaggcagaa aaatcatata cctgtttact taaagttgat
326001 aatacaaaat aggctggaca cggtggctca tgcctataat ctcagcactt
326051 tgggaggccg aggtgggcag atcacttgag ctcaggagtt cgagatcagc
326101 ctggccaaca tggtgaaacc ccatctctag taaaaatata aaagttggcc
326151 aggtgctcac acctataatc ccagcacttt ggaaggccga ggcgggcaga
326201 acagaaggtc aagagatcaa gaccatcctg gccaacatgg tgaaacccca
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327301 taattatgtt tcctggccat gcaatcattc ccaatgactt gcagaaaaag
327351 ttttctaaat tcagtaaagc tttttgaaac tttctaaaac ataaaactac
327401 atgttgaaaa agggagtacg gttattgcat atttaagtgt aatcattgta
327451 tttagcaagt ttattttaat acatggggaa cagaaactat ccttaatcct
327501 gcaaagtggg attgtaatat cctaccgact acaatccata taaaaaggtc
327551 cttatggctg ggcacggtga cttatacctg taatcccagc actttgggag
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FIG. 7 CONT'D

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327601 gttgaggtgg gtggatcatc tgaggtcagg agtttaagac cagcctggcc
327651 aacatggtga aaccccatct ctactaaaaa tacaaaaagt agccaggcgt
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327751 tcgcttgaac ccaggaggcg gaggctgcag tgagctgaga tcgtgtcact
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327851 ataaataaaa taaaaaggtc cttattaaca atgtgtccag atttctagat
327901 gatagctata aaagtaacat acacgctgat atggtttggc tgtgtcccca
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328101 gctttcccca acttcgctca atcttctcct tcctattgcc atgtgaagaa
328151 ggatgtgttt gcttcccctt ccgccatgat tgtaagtttc ctgaggcctc
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328301 acaccaaaca agttaatatg tatgtaataa tacattagaa atatttttgc
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328401 atgcatgttt tttccattca agtatacatt taattcgaca tggtcataag
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328601 ctgagctaaa aaaatgagta gtgattatga ggggggataa agtcaggtaa
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328951 catctcttta ctctggtttc aaatgtgtca agtgtattat caaggaaaag
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329051 aaaaatagta gctcaaatga tttaaaaaac aatgtaataa aattactcgg
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329151 taaaataatt attttataat tatataaata aaatatttat ttgtataaat
329201 ataaattatt tatataaata aataaaaggc tagaaaagac ttagcccatg
329251 ttataaacca atagtgctac tattctaggc agttcatatt tactcattta
329301 atcctcacaa caagacagta ttactatccc cattttacag atgaagctaa
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330401 gttggccacc gcgcccagcc tcaaacaagc aagttttaaa cccaagcctg
330451 cagtagcaaa atcccagtac caaagaagtg aggaaagatg tgagaagtcc
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FIG. 7 CONT'D

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332151 cccagctact agagaggctg agacgggaga atcgcttgaa tccaggaggt
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332251 agagtgagac tccatctcaa taaataaatg cttagaagtg tttgttattg
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332351 atgcatgtta gaatgaaatt tgtacttttc agaattatat gtataaggag
332401 aaagtaggcc gggcacggtg gctcacgcct gtaatcccag cactttggga
332451 ggccgaggtg ggcagatcat gaggtcagga gttggagacc atcctggcta
332501 acacagtgaa aacccgtctc tagtaaaaaa tgaaaaaaat tagccagtcg
332551 tggtggcggg cgcctgtagt cccagctact caggaggctg aggcaggagt
332601 atggcgtgaa cccaggaggt gtagcttgca gtgagccaag atagcgccac
332651 tgcactccag cctgggtgac agagcgagtg gccatctgaa aacaaaaaaa
332701 aaaaaaagga gaaagtgagc ataaactgtt tcatgtatgt ctttctagtt
332751 ctgtagcagg ccgtgctgta ctgggtgatt atcatatgaa tataatcata
332801 taatcatttg gttagatgtt cacagcttat ttttcttgat ttctcctcag
332851 agaatggtac atgacttaaa ttctaaacac atgagaatgc ttttcctgtc
332901 ttataatcca ttctacttat tgcatgccac tgttaacaat ttggtaaaat
332951 ttgttctcca gtgtttgaac tagttaaaat agcagggtaa tgtttttctt
333001 ttcttggctc tgcatgtatt tcatagtttt agttctcctt ttatgagaat
333051 gagctcatat gaaaactcga agtctaattt aacaacactg acagactaaa
333101 agtggcattc ttcagtctgt cacactgtgc tatcagacat tacaatgaac
333151 gaaatgagat aggaaggcag gtagaagttt cagttcatca acaaagaaaa
333201 acatttgtta ctgattatcc tttcttatgt ttgaatttca tcttttaggg
333251 taaacaggtt gacagcatca acttgacttc aagattctct ttcaagaaat
333301 taccatttga ataaggatgt tccatattat gggcatctgg caatgatcta
333351 caaatacaga accaactatt caaaaagcat gggaaaaagc agatttttt

FIG. 7 CONT'D

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333401 aatggcttat gcctttcatc tccttttttt ctttagtcaa ttctggaaaa
333451 aaaacttcca acaattaaaa acttacagtt gttcatattt tttaaattgc
333501 aaaaaagaga agaaagatca ggccgtaatt aaaaatctta atttccacac
333551 ctttcttcat tctttctaaa atactgtacc ttttcataat taattaacct
333601 ggatttctct tatcttttca tcttattaga atccttctct cattattcat
333651 agattccttt caacttgata tcagaattga gaacccaagg ttcagtgtac
333701 aagggcacct cggctgaagg agactctagg actctgttct aaatcaatgg
333751 cctgacctct ggatagggag gggttttgga taatgcagtg tggaaggaag
333801 tatctggaaa agacagaaag aaatctttgg attacatttt caatgtgcta
333851 gctttgtaaa gagttaaata tagccagtta ggagtaaaaa cagaaaagtc
333901 ttaataacgt gtaactttta ctatcctctg ctttctaaaa aaaaaacttt
333951 tctacgatca agctttagga ttttgagttc cgttctctga agagtttaat
334001 taggttaagt ttaatgaaga tgaacatttc tgataaaatg ctgtaattct
334051 cttaatagaa tttcataaca aattaagaaa tacatgtgtg gctaggcgcg
334101 gtggctcatg cctgtaatcc cagcactttg ggaggccgag gcaggtggat
334151 cacttgaggt caggagttcg agatcagcct ggccaacatg gcgaaacccc
334201 gtctctacta aaaataaaaa aaatcagcca ggcctggtgg tgtgcgcctg
334251 taatcctagc tactcgggag gctgaggccg gagaatagct tgaacctggg
334301 aggcagaggt tgcagtgagc caagatcatg ccactgcact acagcctagg
334351 tgacagagcg agactctaag aaaaaaaaaa aaaacaagaa gaagaaataa
334401 atgtgaacat tttccctaag agatatccag ccttaaaaat aactagtatt
334451 ttctaatata agcttcagca aacttttaga attgtgggcc aagttttctc
334501 taatgtgaga gaaacaggaa tgtgtgatca gcagacagcc tgtcattaat
334551 tctccagagt agaaataagg gttcacactg attttcccag ccagtggcag
334601 ctctaaaaag gaggggcag ttgagtaggg tgcaacatct acaccaagtg
334651 ctctcctgga aaatgcacca tctcattaga tccaatccca ctgctttgga
334701 attcaaacca caaactccca gacaaagctg tagatactaa aagcagttca
334751 aatttagtca tttacagtgg aaagcaactc catgagggaa ctcaccacca
334801 catctccttc ctgcggaaga ctgtttgctg gcagcctatt tttctcttca
334851 ttgttgtggt aaagggctcc atcatttctc atcaccagac tgtgcatatc
334901 tcggccaaga ggaatctgat tcaagttaac cttctgagtt gcaacaccaa
334951 taccccagat tcctaaaaat ataacagttt aaatgccctc aaaatctgaa
335001 gactacaacc atcgagttat tttaaaaggg agtataaact ttttaaagga
335051 agtgctgtat taacactaaa ttgttttcta ttactctttt taaaaaatct
335101 tcttttagaa gtagtttgca ccagcctggg caacatgccc aaaccccgtc
335151 tctacaaaaa atacaaaaat tagttgggca tgggagcatg tgcctgtaac
335201 cccagctact caggaggctg aggtgggagg attgttggag ccagggaagt
335251 tgaggttgca gtgatccatg atcattccac tgcactccag cctgagcgac
335301 aaagccagac cctgtctcaa taaataaaat aaaataaaag tagtttgcaa
335351 actatactat gttctccaca gatgtagtac agcctaggag ataagagagt
335401 gggccctgga acagtgcaaa tgaggattaa atcttgactc tgctacatca
335451 tcttgcgcaa attacctaac ctctctttgt tcccttatct gtgaactgag
335501 gattctaaca gtactcacct tgcaaggtaa tgaaaagata caacaagata
335551 atccaagtaa agcacttgaa cagtgtaagt actccacagc atgagaaagt
335601 aaagcacaca gtaagtattc agaaaatgct agctgtcatc atcatcatta
335651 ttattatctc aaaaagattt tttaaaagct acacattgaa tttaaatggc
335701 ctggagttca atttcaagct ctccctttga aaagtgggaa tgtactgtct
335751 tcagttttta catctacaat gagtgacaaa caatatatac cataagcaat
335801 atcatggaga ggagaaatta acaataaggt gtaaaatcat tttcttaccc
335851 agtattttaa gccaccacac ccagctaatt tttcttttct ttgtagagat
335901 ggggttgtgc tatgtttgcc caggctggtc tcaaactcct ggccttgagc
335951 aaccctcctg cctcagtctc ccaaagcgct ggaattacag gtgtaagcca
336001 ccatgcccca ttgaaaatca ttatttaaaa ctaatttaga gctaggcacg
336051 gtggcttgag cctgtagttt cagctactgg gaaggctgcg gcaggagtac
336101 tgcttcagcc tagaagctca aggctgcact gagctataat catgccactg
336151 cactccagcc tgggtgacag agcaagaccc catctataaa taaataaata
336201 agtaaaaata atttagaaaa taagccctag ggggaaattt tatatcattc
336251 aaggctggcc aagtaatagt aagattcatt tactccactc tcattttcct
```

FIG. 7 CONT'D

336301 attctctacc cacattactg atgcagtatt tcactagaag tttatttaca
336351 ataaagcttg ttttgttttt gtttttgtat ttgttttttt gagacagagt
336401 cttgtactgt tgcccaggct ggagcgcagt ggcacgatct cggctcactg
336451 taacctcttc ttcctgggtt caagcgattc tcctgcctca gcctcccgag
336501 tagctgggat tacaggcgcc caccaccacg cctgactaat tttttgtact
336551 tttagtagaa acggggtttc actatgttga ccaggctggt ctcaaatgcc
336601 tgacctcgtg atccaccccc tcggcctccc aaagtgctgg gttacaggcg
336651 tgagccacca cgcccagcca ctttttttt ttttgagacg gagtctcact
336701 ctgttgccca ggctgcagtg cagtggcata atctcagctc actgcagcct
336751 ctgtcttccg ggttcaggca attctcctgc cttagcctcc cgagtaactg
336801 ggactacagg tgcccaccac gatgcctgga tgatttttgt atctttagta
336851 gagatggggt ttcgccatgt tggccaggct ggtcttgaac tcctgacctc
336901 aggtgatctg cccacctcgg cctcccaaag tgttgggatt acaggtgtga
336951 gccactatgc ccgatcactt tacagtaaag cttttatttt aaaagttttc
337001 ccatatacaa tacaggcaca gttaactaac ctattataat cacatagaat
337051 tgctttacag ttcaagaaac tccataaatt ttaaaaagag aaatatagac
337101 tgcagacttc tatctgaatt ctgaatttga tgactgcttc aaaacactga
337151 atcagggtat cttaataact gagttaagag aaaaactctg gctcatgcct
337201 gtaatcccaa cactttggga ggccgacgag ggcagatcac aagatcagga
337251 gtttgagatc agcctgacca acatggtgaa acctctgtct ctactgaaaa
337301 tataaaaatt agctgggcat ggtggtgcat gcctgtaatc ccagctactc
337351 aagaggctga ggcaagagaa ttgcttgaac ccgggaggcg gaggttgccg
337401 tgagtcaaga ccgcgccact gcactccagc ctgggtgaca gagcaagact
337451 ccatctcaaa aaagaaaaaa aaaaagaaaa actcagaatc aacagattga
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337551 cttatatgct tgaccaaaca agagggttca tccggatccc attaaaaata
337601 ctagtgcctt atatttatgc agcatgtctt gtcttaaaac actttcatac
337651 atagagttcc tgtgaggcag aatgggcagc tcctgtaata cccatttat
337701 agatgagaaa actgaaccta atttaactaa attaactaat ttacccagga
337751 tcacacaaca agaggtggaa gacccagatc ttctaagagt ttggtgcttt
337801 tatattacct tctgaatctt ttttatgtgt tacaaattac tcttaatatt
337851 tagaacaatt aggactttta atagtaaagt accattatac caacctgtgg
337901 actggatttt gaattcaaaa tagcttttgt tttgatgtaa aggtgcgctg
337951 gctaaacaac ctcctgttcc acatattctt cttccattct ttacaataac
338001 aacatctgtt cctaaacaaa aaatgcagac actatgtaaa gttttgtatt
338051 ttcttttctt ttcttttctt ttttgagacg gagtcttgct ctgtcaccca
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338201 tgtgcaccac cacacctggc taaatttttа tatttttagt agagatgggg
338251 gtttcaccat attggtcagg ctggtcttga attcctgacc tcgtgatccg
338301 cccaccttgg cctcccaaag ttctgggatt acaggcgtga agcaccgcgc
338351 ctggccaagt tttctatttt caatccaaca atcaggatta atttgttcag
338401 ttctaactca gtccacaaaa aatagggaca ctgtaagtac tttgaaatat
338451 agctgaatta ttttaaatat ttaattcact attttttcct aagagaacat
338501 ttataagtaa tattcatttg tatgtataag ttttaattaa gcatgctggg
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338601 agactgcttg agtgcaggaa gtcgagacca gcctgggcaa ccttgcaaaa
338651 ccccatctct ataaaaaata caaaaattag ctggtgtggt ggcacaagcc
338701 tgtagtccca gctacttggg aggccgaggt gggaggatca cttgagcctg
338751 ggaggcagag gttgcagtga actgagattg caccactgca ctctagcctg
338801 ggcgagagaa gtaagtttta attaagcagt ttcaagtaaa ctgcaataac
338851 tctgaattat attgaacgtt caaaacactt ttaaggtaga aatagactaa
338901 ctcttttaat ttttagccag gaaaccaatt tgatgatttc ataaatttct
338951 taatttaaac caaaacataa acacaagaga ctttagtaaa ttggtagttt
339001 tcaattctat tcaaatgaat taaaacaatt tactaaaagc cacctgaatg
339051 cctactaaat acaagctact atacttgtgc attagtcatg taagaactga
339101 agagtacagg gaatatgaaa aagaacacac atctatgttg aaatacctga
339151 cagtgacaaa ctgctaactt taggatctta aaatgtttat taagatagct

FIG. 7 CONT'D

339201 acttcaatca cattgcaaat atgtaaacaa ggttttaaca ttcttacatg
339251 cactttattc tcgtagaaaa ttttttagat gaaacgacat ctatagatga
339301 gagtgagaaa gagagacact gtctcctgat gtgatcctag taccaatttg
339351 atttaggaaa atgtctatca gagaatatac ataattctaa catgtaagaa
339401 tacacagaat tacataattc taatatgtaa gaaatagccc atacaccaat
339451 gcataactcc ccatacttgt ggccactacc accactttgc tggcaataac
339501 tgtaccagcc aagcagatct gaatattcga actgtatggg actcttccag
339551 aaggggttaa ataaaattag gtcatagtaa caaaaggttg aattaacagt
339601 taaacaaaat tatttggtac aaatacataa aagaaatgca aaattttcag
339651 attctaacac aattctaaac tggttaagag atgctctccc ttaaacaagg
339701 caaaactgag atcctattgt atgattacta aaaattcatt aacatctttt
339751 tttttctaat taaaaaagtt aacccccaaa ttctgggaaa gtacctttat
339801 aaataatttg catctggcta ctccatatac ctccagtaat ttcaactgga
339851 gagcatcctc cttgatggca aagaccatgc agtgcttggc attgagcagc
339901 tgctcatcaa ataactgata aaggttgaat taatatgctg tgctaagcac
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340001 ctggagatca aaacagttcc aagaaagctg actcaatctc tgcttcaggt
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340101 gccacagtaa ctgagtcaag aactgctaca tgacctaatc aactacaatc
340151 agaatctcag gacttttgca gagcacaatg ggatataaca ctcttggcca
340201 ggcgaggtgg ctaacacctg taatcccagc tctttgggag gctgaggcag
340251 gcagattact tgaggtcagg agttcaagac cagcctggcc aacatggtga
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340451 cctgggcgac agagcgagat tccctctcaa aaaaaaaaaa aagaaaaaaa
340501 aagaaagaaa gaatattcag ggtgtttatg agtcattagg gaatcatttt
340551 aagcttatcc catttctctt aagtacacag acggttttag aatctgtact
340601 tttaatgatt ggtgctgctt agacggtcaa ggcaaatttg agtacagcca
340651 gaatgccaca taaacatagc cacagaggat gttttaagaa acataaattt
340701 ccaaatgagc ggtgtcccct tcaaagtagc tgccttggaa gtcatttgtt
340751 tctaaaatgt cgattcacaa ttaaaagcca aagatatggc atcaatgata
340801 atacttacaa aaattatgcc atagaaaatt ccaaaagagg aattccaaag
340851 tggttttaag taatacaaca tcactaaaat aagtgacaac cctcggagaa
340901 tcacttgaag tatacagaca attttgttaa aaaaaaaaaa gcaatcacat
340951 tttttaggtt atttaatata ataatctttc acaccaccaa atccatgtgt
341001 ttctattttc aagtcaagat caattcatgc ttgaaacatg ttcttctaac
341051 tcaacaaccc ttttctttca ttttattcag gttctcaaat caggctcctc
341101 tgtgattgaa taatttaagt ttatagaaag acaggctaag aaaaaacttc
341151 ctggccgggc gtggtggctc acccctataa tcccagcact ttgggaggct
341201 gagaggcagg cagatcacga ggtcagttcg agaccagcct gaccaacatg
341251 gtgaaactct gtctctacta aaaatacaaa aattagccgg gcttgatggt
341301 gggcgcctgt aatcccagct actcaagagg ctgaggcaga agaattgctt
341351 gaacccggga ggcggaggtt gcagtgagtg gagattgtgc cacagcactc
341401 cagcctgggc aacaatagtg aaactccgtc tcaaaaaaaa aaaaaaaaaa
341451 aaaagaaaag aagaagaaaa aacttccatg cagttagaaa atttggagat
341501 gacattactc tatttcatcc agttagtagc tgacagttgc tggacagctt
341551 tggagaaata aaacacagtg gaatgagtat atctgaccag ctcttcctag
341601 aggaaacaga tgacagagaa aaggaatgct ccaaagagga gactgcagta
341651 attcaagagt ctaacagtaa agataggaag aagtgctgca gttgatcatg
341701 agttccagga attatgtatg gttgtccttc actatattct cagcacttat
341751 aacaatgcct gccacctgat aattgcttaa taaatatcac ttcagtaaat
341801 gagtaactga aatggaaata ttttctgagg aaaactatag aatttgaact
341851 ccatcgtcta taaataatga tggataaaaa ataatttaaa gattacttat
341901 gtattaaggt tctgtactac atttgggaga tctgagaatt aaaagtaaat
341951 acacacatac aaggtgatta tatagttatc acatttagta tgtgttatac
342001 aaaaatacag tgggcagagt gtttccagaa ttataaggaa actgggcgag
342051 agagttttat cataaatatt aagaagtgcc tttttatttc aatgcactgt

FIG. 7 CONT'D

342101 cctttaaaca atcagaaacg tgtaaaaaat caaaagtgca gaagtacagt
342151 tagaataaaa taatccacaa aaagacagta ctctaactga aataattata
342201 ttgggaaatc tctccttcta gaaccacatt ccagaagcat gaaactacct
342251 gggaaaagtc taagaaataa taaggtggtg aaagaggcta tgatgggaga
342301 ggaagaatgt tagataaatt atatggattt ggaattaaaa ggataaagca
342351 agatgcaaag gagcaaagtg ctattttatt tttcaacagt tagacctgtt
342401 gggaagaggc cagtcagatg aaattacagt acctctcaca atgactaagg
342451 agtcgggcaa tgggaggttt tagttgaaat ggcaagttct gacctgaggt
342501 gcgacttcag acttctgcag tctgccttgt ttcgacttta ggaggtgaga
342551 ggaaaattac ttccaataat ataggattca acctataaat gatggggctc
342601 aagagacagg accgacagtc agggcaggag gaggagcaag accggaccta
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343151 cccccgccgc tcagctccgt ctcctgcccc cgcccgaggt ccggacttgt
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343351 acgggtgggg ctagtggcgc gcggaggcgt ggcagggggc gtggcgttgc
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343601 agaagcgaat cagtttgggg gaaggggagc taatggaaat gacttccgag
343651 ttttccctcc gcgggcccag gttgagcagg ctttgccacc acggagagcc
343701 ccagtctccc tgccgtggct ggtttccctc acatgctaaa tagactcacg
343751 tgggccccag gagtaatgcc tgttagtgac tgcactgtgg atgttcaccg
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343951 tccccctgtc tggtgcactg agggttccga ggaatgtgac gggaacccag
344001 gaggctgcgg gaagtctgct gggtcccgag ggaagccttc ggctcctacc
344051 gtccgctact ttctgcttcc acacgggagg ctgtcacctg tcatctcctt
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344151 gcagtggctc acgcctgtaa tcccagcact ttgggaggct gaggtgggcg
344201 gatcacctga ggtcaggagt tcaagaccag gatggccaac atggtgaaac
344251 cccgtctcta ctaaaaatac aaaaattagc tgggtgcggt ggtgcacgcc
344301 tgtaatccca gccactcagg aggttgtggc acgagaatcg cttaaacccg
344351 ggaggcggag gttacagtga gcctagatcg cgccactgcc ctccagcctg
344401 ggcaacagag actctgtctc caaaaaaaaa aaaaaaaaaa aaaagatacc
344451 gcttggcatc tggaaatgtc tgggacgacc tctagaatta acctagctca
344501 aacctctgtt cccagatcag tttcatcctg aaggcttccc tagggatgga
344551 tcatcaagtc ctgggaaact ggacataaaa tgcccactac ttaaataatg
344601 atttcccata cgtaactttt agtgacccga gttataaatg ttttttaagg
344651 aggatttcta tctatgcaat gaggggaatt tttcaggttc ctggttctct
344701 ttctataaat ggtgttttca ttacaatact aagggaaagt tttgtacgtt
344751 gaaattaagt taccatagaa tttaataacc aaggtgatta ttaaactgat
344801 tgagggttgg tcttttcccc cattgcgtat gcagtacttt cttggtaatc
344851 atttcacaca agaaattttc ttttatgaca aaccttcatc gttatgctgg
344901 gaattaagtg ctttgatttt ttttttttt ttttttttta accccaggga
344951 agtgctgggg gcggggcagg gggtgagaat tttaacagaa tattggagag

FIG. 7 CONT'D

345001 acaaaatttt tctaccgttc atatatatat atctagttga attatttcaa
345051 gatttcaagg tcagtattgt ccccatttta taggtgaaga aataggccta
345101 gaggtactaa actttacaac ttcaggtgag caggagataa acaggtagga
345151 ttcaaggctt accagtctga ttcctgttag aagaaaaact tcagctgaac
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345251 atcacagcag attcagagag actccaggga tgcctcgtgg tcagaacaaa
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345351 agaaacagct gcattggtta caggggggcg tttgccttat ttgaacacag
345401 tttgaacaat cagcagtgta tgactggttg aagtatggcc gctgggattg
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345501 agcttgtctg cctattaacc taggttacag ttcgtacaca aggactcaaa
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345601 gcctctcaaa ttctttctct tataattaat gctataatcc tcttaaacat
345651 gctctcagtt caaaatgcag atttgccctt ttttgtgtgt ttcatttatc
345701 tccacattgg atataagctg ccataatgca tgtatagaca aaatataata
345751 gaattagttg ttataaagta aaaattttgt tcagaaatat tattaaaaga
345801 agtacatgta ttatatatgt aataaacatt taggccattc aagtcagtca
345851 catcttcaat gaaaagccag acactaaatg gccgtgaatt ggacattact
345901 atagagaggc agaagggcca tagtctttcc tagctggaaa agtaatttgc
345951 tggggcgctg cccggtgcac tttgccccca tcctagcaac tcgagtgtgc
346001 tcagcagaat gaagttagca aaactggtta gctcctgaaa cagacttccc
346051 tgtcttggca gattaacacc atccatgagc tcacttttcc ttctaatatc
346101 tgggattcta atatccattc attattactt tcaaaggaat tatcctctct
346151 ttttgaaaag cacaacgtta aagatgtttt gacactcttt cacagctatc
346201 gctttaaata acaatcacaa ataaagccaa aaatagtttc tcaaggtcat
346251 ttatctaagt cataagcaat aagaaagaat gactacttca aaaaaagagt
346301 ctgtctgctt ccaagacatg ccaggaactc gagaactgag aacaataatg
346351 taaagcttgt gtttcagagt tgagattagc attatgctta agattttctt
346401 taatgttttt tatgccagct ggacgtcttc tgttagtgaa tttcccattc
346451 tgtactgggt catacgaaat gagtttttaa aaactcatta atcagttatt
346501 aaacaaaaca tttttcctta gactaatcca aaccacattt gtgatctttt
346551 taaaaatcag aaacattaac aaaaactcat ttttctaaaa actgacatat
346601 ttctggagcc ttgaccaatt cattattata attttgagta actaatagtg
346651 attgacattt atgtagtgct tattattgcc aggcactgtt ctaagtgttt
346701 tttaaaaata aactaattta gtctttgtaa caaccatgtg agggaaaaac
346751 tatcctccac tttacagatg aggaagctga agaaaaaata agaaatgtac
346801 tcaaaagttg cacagtcaat gaaggatgaa gctaaattca aacagacatt
346851 ctggctctag ggtctgtgtt cttaaccact ctgcaaactg cctcctaggg
346901 tgttacattt aaaaatacat tcctaggtct ggtgcggtgg ttcacgcctg
346951 taatcccagc actttgggag gccgagggat atggactgcc tgagctcagg
347001 agttcgaaac cagcctgggc aacatggtga aaccctgtct ctactaaaaa
347051 caaacaaaaa aattagccgg gcatggcagt gtgtgcctgt aatcccagct
347101 acttgggagg ctgaggcagg agaatcgctt gaacccagag gcggaggttg
347151 cagtgaacca agatcgtgcc attgcactcc agcctgggtg acagagcaag
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347251 aatttgtatt tgtctccttc tatccccttt cctcagagac tgacatttaa
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347351 agttatatta cctagattga acaaccaaaa ataaataagg aaaataacgt
347401 caaccttgta actgcaacag actgccatta gttggttctc ttagcggtgc
347451 ctttgaatat taatattttg caggtttgtc cttaacaggc tgtctctacc
347501 ggaaaaaaaa aacgatattt agtacttttt ttcttctttt tctttttttg
347551 agacagggtc tcactctgtt gcccagactg gagtgcagtg gcaccaccac
347601 gcctggctaa ttttttgtgt tttttataga gatggggttt caccatgttg
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347701 tcccgaagcg ctgggattat aggcatgagc caccctgcct ggcctgttta
347751 gtacttttttt ttttttttg agacagagtc ttactcttgt cgcccaggct
347801 ggagtgcaat ggtgcgatct cagttcactg cagcctctgt ctcctgggat
347851 caatcgattc ttctgcctca gcctcctgag tagctgggat taccgacgcc

FIG. 7 CONT'D

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347901 cgccaccaca accagctaat ttttgtattt ttagtagaaa cgcactttgg
347951 gaggctgagg agggcgaatc acctgaagtc aggagtttga gaccagcctg
348001 gtcaacatag tacttttaat tgctaagaca ggtaaaccag gttggagact
348051 tggaaaatgc agagacttgg cattaggaag aaaaagaagc tggggtaaaa
348101 taaaggaatt tgaaaaaggt acaaaagaaa taaaaataga acaatttttt
348151 taatatttaa aatgaagaaa aagcaatagc aagtgctaca taaaaaaggt
348201 ctcagagaat agaaaatgtg atttaccaaa aactttcaac ctagaactgt
348251 accttattct gcttaccttc catggaaaat aaagcagact gtcataaacc
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348351 gcaagtaccc tagtgtattt ctaagtactt ttccttgcca atttagattc
348401 taagtactac tgtggcaata attagcgaaa atagatactg aggatacaaa
348451 agggagacaa agcaaaggtc aaaaccaaag tagtttttg cattttcaaa
348501 agaaataaag gaagatgagg acaagtaaag ttcgtccttg gatctatgct
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348751 gaagtacagt aggggtcaag gagcaagaag tcaccatctc cagattataa
348801 agtgaaaaag tactcgacat ttgcagaaag gaccagacag aagaaaaaaa
348851 cacttctggg tatatataat atctgcaacc aaacaaaatt ataaatattt
348901 tgttgaaatt gtgagaaaga ccctaaaata tttctagtaa caaggaaggt
348951 cacatggatt attaaaatgt acccaacatt actaatttag gatagataca
349001 atgccattta gtctctataa ttttatttt gtgaatgtaa aaatatttat
349051 aaagtttttc aaaaggctcc acctatagtg acaatccctt caaacctatt
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349301 cgtgggacta cttaaaattg ttggtgaaag tttatgaaac tctggattgt
349351 tcgaaaaatg ctcaaaacaa aaaacaacaa aaaaaagaaa caaccctatg
349401 agagttgggt atgatagtac atgtgtgtag tcccaggtac ttggaaggct
349451 gaggtgggag aatcacttga gcccaagggt tcaaagctgt agtgagctat
349501 gatggcacct gtgaatagcc actgcactcc agcctaggca gtgtggcaag
349551 accccatttg taaaacaaga acaaaaacgt gaaataactt tgaaatacca
349601 agagttagtg agaagaagct ccagggatat gtttatggcc aagagaactt
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349701 tttcttattt ttagctattc caaactttta accaaatcct tttttttga
349751 gacagagtct cactctgtcg cccaggttgg agtgcagtgg cgcgattcgg
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349901 ttttttttcta tttttagtag acacggggtt tcaccgtgtt agccaggatg
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350101 tcttacatct aatgcagata tcagtccaca tcaaacattt aatacattct
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350601 gcctcccaaa gtgctgggat cacaggcgtg agccaacaca cccggtcaag
350651 taaatacatt ctaattacac ctcatttcat ccacaaccca gaaagtagta
350701 tgtaaactga attcttagaa aaacatttcc acgttaaatg cactagggca
350751 ggttgccgta taaaggaatt ctataaacaa ttttttttttt aagagatagg
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FIG. 7 CONT'D

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350801 gtctcacttt gtcacccagg ctggagtgca gtggtacagt cataactcac
350851 tgcaactttg aactcctgga ctcaagctgt catcctgcct cagcctccca
350901 agtagctggg actaaggtgc ctgccaccac gcctggctaa ttttttaaat
350951 tttttgtaga gatgggggg tctcattttg ttgcctaggc tggtctttaa
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351101 tttattgaga tataattcac atatcataga attcaacctt ttaaagtata
351151 tgtttaatgg ttatagaatg aaccattggt ttatagaata tcactgagtt
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351251 ttccattcct ccctactcca gcccctgaaa accactaagt tactttctga
351301 ctctgtgggt ttacctattc tgaacatttc atataattgg aattgtacag
351351 tatttggtct ttttcattat ctaacttctt tcacttaata tgacgttttc
351401 agggttcatc catgttatag tatctattcc ttcctaatac tttattcctt
351451 tttatggtta aataatattc taccatatgg atataccata ttttgtttat
351501 ccatatattt attgatggac atttgggttg ttgctatttg gcaattatga
351551 gtaatgctgc aaggtttttg agtgaacata tgttttaaat tctcttcatt
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351651 agaactgaca aacttttttca aagtggctgc gccattttac aatcccacta
351701 gcaatgtaca agagttctaa tttctctaca ttcttgtcag cacttgttat
351751 cgtctgtctt ttttatttta gccatcctgg taggtatgaa gtgttatttc
351801 attgtctttt tgatttgcat ttccctattg acacacagtg ctgagcatgt
351851 tttcctgtgc ttagtggcga tttgtatatc ttttttggag caatacctat
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352001 aaatgatttg caaatatttt ctcccattcc atgaggtgtt tttttacttt
352051 cttgcctttg aagcacaaac attaattttg acagagattt atttatctgt
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352151 gccaacttga ctgggttaag ggatgcccca tagctggtaa acattatttc
352201 tgggtatttc tgtgagagtg tttaaatgaa agatcagcat ttaaatcagt
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352751 atacattgag ggctcaaata gaacaaaaag gtgagagaag agcaaattcc
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353251 gagttaattt ttgcatatgg tgtgaaggag ttcaacttca ttcttttgca
353301 catagatatc caatcatctc tgcaccagtt gttgaaagga ctattctttc
353351 ccctgttcga ttgttttgcc acccttgttg aaaattatac aagacttttt
353401 ataacttgaa ttaacaaaga ttttgactac aaagaataat cattcttagt
353451 ttaatctttg taaataggga tagtcagaaa tcataccaag attttgaaaa
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353551 tgactattca ttttatagtt acttttgtaa aagccagtag taaagccagc
353601 caggtgcggt ggctcacgcc tgtaatccta gcactttggg aggccgaggc
353651 aggtagatca cgaggtcagg agatcgagac catcctggcc aatatagtga
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FIG. 7 CONT'D

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353701 aaccccatct ctactaaata tacaaaaaat tagccgggtg tggtggcaca
353751 cgcctgtagt cccagctact tgggagactg aggcaggaga atggtgtgaa
353801 cccaggaggc agaggttgca gtgagccgag atggtgccac tgcactccag
353851 cctgggtgac agagcgagac tccgtctcaa aaaaaaaaag aaaaaaattg
353901 ttttatgacc tcaagatctt tggtttttt ttttttttag tattttattt
353951 gttttaagga ttcctacaga gttagctaac atggtccatg ttcatttcaa
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354051 gtgtaaatca aaaataaaat tctaagaccc cttcttcccc cagctgtctg
354101 aatggactcc ctcttctcag ccagagcact ccaaagttag cctgaaaaac
354151 tggttcaggc catgatggga agaggggat cagacatgca tcattatgcc
354201 cttctccttt ttggaattca ggaaaagctg accagcatta acatcgacac
354251 agaccttaag tctgataaga aacatttaca atctattctg aaacctgcta
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354551 cctgatcact tgggcacgta tcatcaggac ctcctgaggc tgtgtgatgg
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354651 gactggagtg caatggcatg atctcggctc actgcaacct ctgcctcctg
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354851 cccaccttgg cctcccaaag tcctgggatt acaggtgtaa gttgccatgc
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355001 aaactatcac tgtttgctga tgatcgtatg cctagaaaac cctaaagact
355051 catccaaaga gctccttcag caaagtttca ggatacaaaa ttaatgtaca
355101 caaatcagta gctatacacc aacagcgacc aagctgagaa tcaaatcaag
355151 aactcaaccc cttttataat agctgcaaaa aaatcacata cctaagaata
355201 tacttaacca aagaggtgaa agacctctac aaggaaaact acaaaacact
355251 gctgaaagaa atcatggatg acacaaacaa atggaaacac atcccatgct
355301 catggatgtg tggaatattg ggaaaatgac catagtgcca aaagcaatct
355351 acaaattcaa tgcaattccc attaatacca ccatccttct tcacagaact
355401 agaaaaaaca atcctaaaat ttgtatggaa ccaaaaaaga gcctgcatag
355451 gcaaagcaag actaagcaaa aagaacaaat ctggaggcat cacattacct
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355601 ccagcacttt gggaggccga ggtgggcaga tcacctaggt caggagttcg
355651 agaacagtct ggccaacatg gagaaacccc atctctacta aaaatataaa
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355851 tgaaaaaaaa aaaaacaggc acatagacca atggaacaga atagagaacc
355901 cagaaacaaa gccaaatatt tatagccaac tgacctttgg caaagcaaac
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356551 gaaaagaagt cattacaaga aaaagacact tgcacatgcc tgtttatagc
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FIG. 7 CONT'D

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356601 agcacaattc acaattgcaa aaatatggaa ccagcccaaa tgcccatcga
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356701 cggccataaa aaggaatgaa ataatggcat ttatagcaac ctggatggaa
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356801 ttgtatgttt tcactcatag gtgggagcta agctatgaga atgcaaagac
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356901 ggggtgaggg ataaaaggct acacattggg tacagtgtac aatgctcagg
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357051 ttctcatttt ctggcactta caaaagagct cattcaactt ttcaatatat
357101 tgaaaagata tgtcatataa ttttacaata ttttaacttc agtgtttaat
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357701 ctgtgaatat atggcaaaag ggactttgca gaaatgatta agtcaaggat
357751 cttgagatgg agagattatc tcagattatt cctggtgagc ccaatataat
357801 caatcacaag ggtccttata agagggaggt aggatgatca gatatgtaat
357851 gatggaagca ggggttggag tgttgtggaa caaggaatgt ggacagcctc
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357951 tggctttgaa tgtggcccaa cacaaatttg caaatttgta aactttccta
358001 aaacattatg agatttttt ttttttttt tgagatggag tttcactctt
358051 gttgcccagg atggagtgca atggtgtgat cttggctcac tgcagcctct
358101 gcctcccagg ttcaaacgat tctcctgcct cagcctccca agtagctggg
358151 agtacaggca tgagccatca cgcctggcta attttgtatt tttagtagag
358201 atggggtttc accattttga ccaggctggt ctcgaacttc tgacctcagg
358251 tgatccaccc atcttggctg ggcgtgatgg ctcattcctg taatcccaac
358301 actttgggag gccaaggtgg gtggatcact tggggttagg agttccagac
358351 cagaccgggc aacattgtga aaccccgtct ctactaaaaa tacaaaaatc
358401 agctgggcat ggtggtgcat gcctatagtc ccagctactt gggaggctga
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358551 aagaaagtaa aggaataaag aatggctacc ccttagactg cagccctgag
358601 ggctgctggc tgcccatttt tatagttatt tcttgattat atgttaaaca
358651 aggggtggat tattcatgcc tccccttttt agaccatata ggataacttc
358701 cggatgttgc catggcattt gtaaactgtc atggcactgg tgggagtgta
358751 gcagtgagga cgaccaaagg tcactcttgt tgccaccttg gtgttggtag
358801 gttttagctg gcttctttac tgcaacctgt tttatcagca aggcctttat
358851 gacctgtatc ttgtgccgac cttctatctc atcctgtgac ttagaatgcc
358901 tgtctggaaa tgtagtccag taggtttcag cctcatttac ccagccccta
358951 ttcaagacgg agttgctctg gttcaaatgc ctttgacaca gcctctcaga
359001 cccaccttag acttctaaac tctagaacta taatatgaga aaactgtgtt
359051 gtttttttgtt ttgtttttac atttacgggt ttattataaa ggatattaca
359101 aaaaatacac atgaagagat aggtagggca aggtatgcgg gaaggggtgc
359151 ggagcttcta tggatgcacc tccctggatg caccaccctc cagaaacctc
359201 cagctatcca gaaactcact gaaccttgtc ctcttgggtt gtaatggaag
359251 cttcatgaca tcagcattcc ttccccccagg gtatagggtg gtactctctc
359301 atgagaaggt cttaagatct ataatcagac aggttgggga acattagagt
359351 ggaaggaggg tgggaggtca gaggcctgcc cctgagtctt aacccaccat
359401 atatgtgtgt gtgtgtgtgt atatatatac acacacacac acacacacat
359451 atataaatat atatatatat atatatattt tgagatggag tcccactctg
```

FIG. 7 CONT'D

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359501 ttgcccaagc tggagtgcag tggcacaatc ttggctcact gcaacctcca
359551 cccccagggt tcaagcaatt ctcctgcctc agcctcccaa gtaactggga
359601 ttataagtgc gtgccaccat gcccagctaa ctttgtattt ttagtacaga
359651 tggggtttat ccatgttggc caggctggtc tcgaactctt gacctcaagt
359701 gatccacctg cctcggcctc ccaaagtgct gggattacag gtgtgatcca
359751 ccgtgcccag ccctaaccca cccaatattc taacaaaaaa ctgtaacaag
359801 cactatggga gttggagcca ggaactgtgg acaaaaacca atatatagcg
359851 taacaccaca cgccatcctc tggttttcaa ccatggatcc tttacataaa
359901 atatatgttt tattaatgat tatgtataca tacatacaca atcattaata
359951 atcaatccag cccattatac tgttcgaatg attcccagga tgaggccact
360001 cgggtttaca ggtttcctct caatcttgtc aggttccaaa agcagaagtg
360051 gcctcggtaa atacacagct tcacctttc aggcatctgg aataattgag
360101 ctacgagaaa atgtcatctc ttgccctgag actcttttga cttgttaatg
360151 tgatattgaa ttttcctcaa ttaataactc atttatttat ttgagagagg
360201 ttctggctct gtcacatagg ctggagtgca gtggcatgat ctctgcttac
360251 tgcagcttca acctcccagg ctcaagtgat cctcccacct cagcctcctg
360301 agtagctggg accacaggta tgcactacca tgcctggcta ctttttgttt
360351 ttgtttttttt ttcctgtaga gataaggtct cccagtgttg cccaggctgg
360401 tcttaaactc ctgggctcaa gcagtcctcc tgccttgatg tcccaaggtt
360451 tcgggattag aggcatgagc caatgtgccc agctttattt atttatttac
360501 tctcagctat tatttttcct tctgtccatt aatacccaaa ccttttcacc
360551 tttggaaggg acattagaat caccactatg ctggtctaga ttgcaggtag
360601 caatacaagt ctagcaagta tctcctcctc aatacaggtc tagcaagtat
360651 ctcactccca ttcacatagg gtaaggttac acaggtacag aactagtgag
360701 ctcttttcaa caccaggcaa tatagctgca ttcactctta gccccaattt
360751 tgctagatgg ggtgaaggca caatccaccc ccatctgccc ttagaaattt
360801 tgacatagct ttaaaaacat aggcttttt gcctagaact cacccttgct
360851 gttctagcac ttgtagttgc agctgtggtc ttgggaccac cgcatcaggt
360901 aggggagaga aaaaaaaatt tttttttttc tttttgagac agtgtctcac
360951 tctgtcgccc aggctggagt gcagtggcat catctcggct cactgcaagc
361001 tctgcctcct cggttcacgc cattctcctg cctcagcctc ccgagtggct
361051 gggactacag gcgcccgcta ccacgcccgg ctaatttttt gtatttttag
361101 tagagacggg gtttcaccag gttagctggg atggtctcga tctcctgacc
361151 tcatgatctg cctgcctcgg cttcctgaag tgcggggatt acaggctgag
361201 ccactgtgcc cggccgagaa aaaatttttt gaggtgattt tgagaagaaa
361251 gaaaaatgta ttgtcatttt accagtgtac tcctttcttg gtgagacctg
361301 cgtagtcatc tcagcattct ccccactccc ttttcccaga tcaaccagaa
361351 aaacagagaa aaaatctaac aggagcactc tagtttcaac cacgttgagt
361401 ataagccagg ctttcatgct tttatcttcc ctggttttag acaaccaata
361451 ttttaattgc ccattctact tatctatcaa actattactc taaggaggat
361501 atctctctgc ccattgttgg gcattatggg ctgtacagtg tgttcctttg
361551 tctgaagaag aaatgatggt cagccatcca aatccttgaa atatcttctg
361601 ttgtttattt tttttaattt tttttttatg gcactctgaa cactttcatc
361651 ttccattgga taagcaaagc ctgcactaga gtcagtgtct attcctatca
361701 agaattccta ttccatttgt agtcccccag ggctgccagc atcagtctca
361751 cttgccagct atgttcaggg ccttcccacc aggaaatctt tcccatagcc
361801 agtttctgtc tctcttactg agaaacagaa cagttcttcc tagcattttg
361851 tgccttggaa ttgccatcca taaaccaaga agctcttgtt tggtcagttg
361901 aaagttgttt atttggcact gtagaatcca gcagtttctc acacagttcc
361951 agagtcagtc ctaggggaaa agaaattctc tgcatgcctt gagtagcatg
362001 atcctctata aaccatttcc attgtgtcat ggaactcttc tgggcactgc
362051 catccccatt agaatgttcc tctgacatca tctgagacag catgcctatt
362101 tcaggtatca gtggggtggc ttcagtaaat gtttcattgc gagtcagtaa
362151 atgcccttca agtggaaatt ctctagtcca aagtcccagt ggttgttgct
362201 gggaggtgcc cacaggcttt tgccataagc tccaggaaat gctccataga
362251 gggttatcaa gtggagaatt tgtccctacc agcaccgtag cttctactct
362301 gcactgtgtg ggcctgggca gtctccctgg ttccagctta gcatgtccaa
362351 ataatattgc ttgaagggac gatttacatg ccttctcttt tacagtacca
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FIG. 7 CONT'D

362401 ggtagggaaa acagtccccc acacagatac aatgttcatt cccatgataa
362451 aatcagataa aaaatgcaac tacttcacat gaagtgttca aatataccaa
362501 ctttcatagt cctatcgacc cctacatttt tctgttttag tttcaggaac
362551 ttttcttctc caccccctaga ccatttaccc tctcttgtgt aaaagtcttt
362601 gggtacccag ccaaggggtg acccaaagga ccctggccct cttgttaatc
362651 tttatcttgg ttagtctgct cgactattgc cccaggcaaa ttcagatcag
362701 atttttcatt gtaactgctg ccttttagct ttttaaattt ctccaaactg
362751 ggagaaatac agcaaactgg tttggggccc tttaatgttg gaggaccaaa
362801 aggggctccc tttggttcac ccaaccttca gggtagtgtt acgttaagac
362851 ctttgtttta actccatcaa tttccttttt attgttgtta ttttttacag
362901 atgggggtct caatatgttg gccaggctag tcttgaactc ctaggctcaa
362951 acgatcctcc tacctcagcc tcccaaattg ctgggattac aggtgtgagc
363001 caccatgtgc agccaaccgc atcaatttcc attttattca ttccatttct
363051 taataaccat ctaaagattc ctaccctgct gggaccagtc ccctcttgct
363101 gccgccgctg ccttctcctc ctcctcctcc ccattccccc ccccctcctc
363151 cccttcctcc tcctcctcct ttcttgctgc tgcttcttca gctgctgctt
363201 ctgctgctgt tgcttctgca tctgcttctg ctggtgctgc tgcttcttgc
363251 tgctgctgct gcttctgctt cctcttcttc ctcttcctct tcttcctttt
363301 tcttctcctt tcttctcctt tgtctcattt cttctccttc ttccttctcc
363351 tcctcttccc tcctcctcct tccttcctct ttcttcttct ttcttctttc
363401 ctctccttct ccctctcctt ctcctccttc tcctcttcca gtccctccct
363451 ccttccctcc ctccttccct ctctccttcc ctccttccct tccttccctt
363501 cctttccttc ccttccttcc ttctttcctt tccttttttt ttttttttt
363551 tttctgagat ggagtctcgc tctgtcacct aggctggagt atagtggcat
363601 gatcatggct cactgtagca tcgaccttct gggctcaagt gatcctctca
363651 cttcagtctt cgagtagctg ggaccacagg tttcttgtag tgtccaggaa
363701 ccatctcttc atgttcttta ttgtcaatgt atcattcctg tttagtttca
363751 tgtctcccac tgtgagaaac aagtagcatt ctgttattac tcacatgcca
363801 ccatggttct tcattatctt aatgtattga aacaacatag atcttcttgc
363851 cctgcattta tttaatgctg attgcatcaa aactcattag gctacatcct
363901 tcatcatgct gcccaagaat actggcttct aatgactctc tcacaggtta
363951 tggtactgcg atcatgacca caaacacagg gtttacccag attatgcagg
364001 aaaaaaagaa aaatactttg ttttcttgtc atgctaaatt tattgtttgg
364051 gaatttttc aagagaagac caggtcttct cttgaactct ttaaactata
364101 aactttatat tcctagaacg ttcctctgtt gaccacatac ctacctttca
364151 cacaccatca ctggtaggga ggattggtga gaggctctcc tctttacaca
364201 aggaatgtcc gttatttgac cagcagagct taagatcaac cagggagatc
364251 atgatgtcat caagttaata ggaagcagga gaggatattg attaaaaggg
364301 ctgactgaca ttgtagaggc atggtctcaa aagccttcaa gggagatagg
364351 cactgccact cctgaaggat tgcctgacat gaggtgcaga gcctgtgtgt
364401 tgtggggtga ctgcattgag tgtcagtgac atgaggtaca tggggtgctg
364451 taggatacac agatccacac acatggctca agctcaaggg ttgatagtga
364501 accacaggta gcccagagcc aagagttatt aaaaatcagc atgttatcac
364551 catttgacaa cccaatcttg cacaatctct ggaaagaaat actgtgccaa
364601 caggagcaat tcactttcca ggtctccttt ttggattcca gctctgattt
364651 ttgtatcttc tcagggcatc tggtccatcc caagtatggg atagagggtt
364701 gtagattacc ccaaaaggaa aaagcagaaa ctaggacaca cacaggtccc
364751 agtgtgggat gggggcacct cacgtggatg gatctgatag cccttgtcag
364801 tcccagggat cagagggaga ctcagaaaac tgtgaggaag ataccccaaa
364851 atacagggcc ccctggaaca aggaagccag ggaagagtgc cctgctgcct
364901 agattgaagg gctgaagtaa ttttagggca acaaagttga tgatagaaag
364951 ttctctatta ctgaagaatt ctagtggtta aaggaactaa tgaaataatg
365001 gatcattaat gtatggtaaa actataacct gaataagcct agtatcacta
365051 aaagtggaaa acctgacatt gtgtctccta atgtgatgca ataagaaaac
365101 agcaccactt gcaaagtatt cctgccttaa aagctgaacc tgaatctgat
365151 gaaatttcta tatttatttt tcagtctata aaaaatatgg gggtaaagaa
365201 caagttaaat aactgttaga gtgcagtcag ctaaatacag aatgtgggac
365251 tgtcaagagc tgtgcaaggc ctgggatttt gccccactta taaactaaca

FIG. 7 CONT'D

365301 agttagcctg ttttggtttc atggatgctg gcaggagaca gaagattcct
365351 gagtcagaga caaaggattt tattgcccac agcaaaagta gtattcagaa
365401 cttcgtgttt gtttgtgtca gtctccatgc cccacaaagc ttattggaag
365451 tgacacaaag ggctcgtgat ggatgcctta gaatgtagtt ggttgcatta
365501 gaggaaagaa acactgagtt tggggcattc attgttttta aggcaagtgg
365551 aagccagcct gctgtttcgg ggagatatta ccccatcctt caggtttgct
365601 tgctgcaaac acaatcttga gaaatggccc tggtaaagaa tggtcagggc
365651 tttgcattct tggtatgcct agcaaaaata tatggggata ctcaaggcca
365701 gtgacagatt gcctgttgga aaaatacacc ccttagccca atatgttctt
365751 gaccaaactt gagtttttac acaagcttgc cactccatca gccactctga
365801 ctaatatgac cagagaggtt gggagcaaaa ccatttcatt tgtctctcct
365851 aggagtttta tagtttcagg tcttatgttc aggcctttaa cacattttga
365901 attaattttt gtacatggtg taaagtcatt ttttaaaatt tggacgtaat
365951 cagttttccc aacatcattt gttgaagaga ctagtctctc ccccattttg
366001 tggccttggc accctcgtca aatatcattt gacaatatat gtgagggctt
366051 atttctgggc taattcttct gttccattgg tctgtgtgtc tgtctttatg
366101 tcagtataat actattttga ttactgtagc tttgtgatat ctttcaaaat
366151 aggaagtatg agacctccag ctttgttttt cttcctaaag attttttttgg
366201 ctatatggga ttctttgaga ctttatatgc atttcagggt ttttaaattt
366251 tttctgcaaa aacaaaaagc cattggaatt ttgatgggaa ttgcatttaa
366301 tttatagatc actttgggta gtattgttat tttaacaata ttaagccttc
366351 caatccatga acatgggatg tctttccatt tatttgtatc ttcttaaatt
366401 ttttaaagtg atgttttgta gcagtgatac aagaaacagg agggatgaat
366451 taatgatatt ttattattac aagatatact acccatgatg tagtacagtg
366501 ttatttgaaa gtggacttgc attaattata aatgtatact gcaaactcta
366551 gggcaaccac taaagaaagt aaaaaaagaa gtataagtga catgccagga
366601 aggaagagaa catggaatca tataaagtgc tcaattaaaa ccacaaaaag
366651 cagaaaaaca gtggaaaaca aaaacaggaa taaaaaacaa gggcaacaaa
366701 tagaaagcag taacaaatat gatatattaa tccaactata tctataatga
366751 ctgtaaatgt taatgatcta aattttacta agacaaagat tgagtagatc
366801 taaaaacaag acctaactat atgttgtcta caagaaacac attttatccc
366851 aggcacaatg gctcacgcct gtaatctcaa cactttggga ggccaaggtg
366901 ggcaggttac aaggtcagga gtttgaaacc agcctggcca acatggtgaa
366951 accccatctc tactaaaaat acaaaaatta tccaggcgtg gtggtgtgca
367001 cctgtaatcc cagcttttca gaaggctgag gcaggagaat tgcatgaacc
367051 tgggaggcgg aggctgcagt gagccaagat cacaccattg cactcccgcc
367101 tgggtaaaag agcgagactc cttctcaaaa aaaaaaaaaa aaaaaaaaaa
367151 aaaaaaaggg aaagaaagaa acacatttga aatataagaa catatataga
367201 ttaaaagtaa atggatgaag aaagatatac catgcctata ctaattaaga
367251 gaaagtggaa gtagctatat taattttagg cagagcaaac ttcagagcaa
367301 ggacagatat cagggataag gagggaaatt acataatgaa acagcattca
367351 ataccccaag aagacataat cattcttttt ttttttttt ttttgagata
367401 gagtttttct ctgtcaccca ggctgaagta caatggtata atggcacaat
367451 ctcggctcac tgcaacctct gcctccaggg ttcaagcaat tctgtatcag
367501 cctcctgagt agctgggatt acaggcgcct gccaccacac ctggctaatt
367551 ttttgtagtt tttagtaaaa attgggtttc accatgtggg ctaggctggt
367601 cttgaacttc tgacctcagg tgatctgcct gcctcagcct cccaaagtgc
367651 tgggattaca ggcatgagcc gctgcacccc gctgacacaa taattcttaa
367701 tgtgtattca cctaacagca gggcatccaa atatgtaagg gaaaaactga
367751 taaaactgca agaagacctg ggtgaatcta ctattatagt tggagacttt
367801 aacactcctc taacagaaat ggacacagtc agcaggcaga aaaccagtaa
367851 ggacacagtt gaattcaaca acactatcaa tcaactgtat ataattgaca
367901 tctacagaat atttcatcca gcagcaggca gcagattaca attcttctca
367951 aaatcacatg gagcattcac caagacagat cacattctgg gccataaaac
368001 acacctcaac aaatataaaa gaagtcatat agtgtctgct ttcagacctc
368051 atgaaattaa actagaaatt gatatcagaa agatagctga aaatcacaaa
368101 tacctggaga ttaaacaaca tacttctatt ttttttttt ttttgagac
368151 agagtctcac cctgtcaccc aggctggagt gcagtggtgc gatcttggct

FIG. 7 CONT'D

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368201 cactgcaagc tccacctcct gggttcacgt cattctcctg cctcagcctc
368251 ctgagtatct gggactacag gcgcccgcca ccatgcctgg ctaatttttt
368301 tgtatttttt agtagagacg gggtttcacc gtgttagcca ggatggtctc
368351 gatctcctga cctcgtgatc cacctgtctc agcctcccag attaaacaac
368401 atacgtctaa gtaatatatg agtgaaagaa aaagtctgat gaagagagtt
368451 aaaaatattt gaaataaatg aaaatataac ttatcaaaat gtctaagata
368501 cagcaaaagc agtgcttaga aatttatagt attgaataca tatattagaa
368551 aagaagattt aaaatcatta atccagcttt cagcttttag ctcagagaag
368601 gccaaggtgc aactttcttc agttgtcatg aatctgagtt catacaacac
368651 cagccatctc caccatgcca tcgaagaaaa aagtaaaata aaataattaa
368701 tccaatattc tgccttagga aactagaaaa agaagagcaa attaaatcca
368751 aataagcaga ataaaataaa tgaaaattat agcagaaatc aatgaaactg
368801 gaagcagaaa accaatagag aaaaataaca cgaccaaaat ctagtttaaa
368851 aaaaatcaat atagttgata aacctctagc caggcttact aagaaaaaga
368901 gaagacacaa ttactaatat cagaagtgaa agagaagcat cactacagat
368951 cccatggaca ctaaaagaat aataaaggaa tattattaat aactctatgt
369001 ccacacattt gataacctac ttaaagacac aatctgccaa aattaacaca
369051 aaaagaaatc aatactttta ataaacctat attgattaaa aaaattggat
369101 taataactaa taaacttcca aaacagaaat caccagactc acatggattc
369151 attagtgaat tctatcaaac atttaaggaa gaaattatac caatcctata
369201 caatctgttc cagaagacag aagcagaggg gatacttcct aaatcattct
369251 atgaggctgg cattacccta atattcaaat tagacaaaga cattacaaga
369301 gccgggtgca gtggctcaca cctgtaatcc cacactttgg gaggctatgg
369351 tgggaggatc acttgagttc aggagttcaa gaccagcttg ggcaacatag
369401 caagacctca tctctacttt aaaaaaaaaa aaaaagtagc tggtatggtg
369451 gcacacacct gtagtcccag ctactcggaa agctgaagtg ggaggatcac
369501 ttgagcccag gagatcaacc ctgcagggag ctatgatcat gccactgcac
369551 tctagtttag gcagcagagt gagtccttgt ctcagaaaaa aaaaaataca
369601 agaaaagaaa acaatagagt aatatctctc atgaacatag attcaaaaat
369651 cctgaacaaa atactagcaa gttgaatcca acaatgtaaa gaaagaatta
369701 cacatcatgg tcaagtggaa tttatccaag gtaggcaagg ctagttcaac
369751 atttgaaaat caattaatgt aatccatcac aacaacaggc taaagaagaa
369801 aaatcacatg gtcatataaa tagatgcaga aaaagcattt gacaaaaaaa
369851 aaacatttca tgattggaaa aactcacaat aaattgagaa tagagatgaa
369901 cttgctcaac ttgatgaaga acatctgcca aaaaacctac agctaacatt
369951 atacttcatg gtgagaaact tgaagatttt ctcacactat cagggacatt
370001 gcaaatatgt cccttctcac cactgctttt caacatcata ctggaagtcc
370051 tagctaatgc aagaacacaa gaaaaagaaa taaaaggcat atagattggg
370101 aaggaagaag taaaattatc tttgtttgca gatgacatga ttgtagaaat
370151 ccaaaagaat caacaaacaa ccctccttga actaataagc aattatagag
370201 ggttgtagga tacaaagtta atgtacaaaa gccaattgcc ttctgataca
370251 ctgtaagcaa tgaacaagca gaatttgaaa ttaaaaacac aataccattt
370301 atatccttct gaaaagaaat aggtataaat cttaacaaaa tatgtggaag
370351 atctatataa gaaaaactac aaaactctga tgaaaaatat caaagaagac
370401 ttaaataaat ggagatatag tccatgttca tggataggaa gacccagtgt
370451 tgttgagatg tcagttctga actggatcta tagattcaat gcaatcccaa
370501 tcaaaatcca gtcaagttac tttgtggatg ttgataaact aattctaaag
370551 tttatgtgaa gaggcaaaga cacagaatag ctaactcaac aataaaggag
370601 aagagttaga ggactgatag tacccaactt actagactta ctagaggtcc
370651 cgcatggtgg ctcacaccta taatcccgac tactctaaag tctgaggtgg
370701 gaggatcact tgagcccagg agttgatgtt gataaactga ttctaaagtt
370751 tatgtgaaga ggcaaagaca tagaatagcc aactcaacaa taaaggagga
370801 gaacagttag aggactgata gtacccaact tactagagtt actagaggtc
370851 aggcatggtg gctcacacct ataatcctga ctactcaaaa ggctgaggta
370901 ggaggatcat ttgagcccag gagttcaaga tcagcctgag caacatagaa
370951 agacctggtt tctaacaagt taaaaaaaaa aaaaaaaaaa aaaaaagact
371001 tatagaaagc tgcagtaatc aagacagtgt gatattcgtg aaatagatca
371051 atgaaacaga acagagagcc cagaaaaaaa cccacataaa cagagccaac
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FIG. 7 CONT'D

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371101 taaccttcaa caagggagaa aaggcaatac aatggagcaa agatagtctt
371151 ttcaacaaat ggttctggaa caactggaca tccatgtgca aaaaataaac
371201 ttaaacatgg actttaaacc cttcccaaaa attaactcaa aatgaatcac
371251 agacctaaat gtaaaatgca aactataaaa ctcctataaa ataacagaga
371301 aaaacttaga tgactttgct gatacagttt ggatgtgtat ccactccaga
371351 tttcatgttg aaatgtgatc cccaatgttg gaggtgggac ctggtgggag
371401 gtatttgggt catgggggtg gatccctcat gaatggcttg gtgccctcct
371451 tgagataata catgagttct cactctatta gttcatgcaa aagctagttt
371501 taaaagagcc cggcacctcc tcccctctct cttgctccct ctctcaccat
371551 gtgatacact agctcccctt ttgccttctg ccatgattgt aaacttcctg
371601 aggtttcacc agaagcagat gctggcacta cacttcttgt atagcctatg
371651 gaactgtgag ccaaataaac ctgttttctt tataaattat tcagccttac
371701 atattccttc agggcaacac aaaacagact aacatatatg ggtatggtga
371751 taatttttt ttttttgag atggagtctc gctctgttgc ccaggctgga
371801 gtgcagtggt gcaatatcag ctcactgcaa gctccgcctc ctgggttcac
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371901 caccatgcct ggctaatttt tttttgcatt tttagtagag acggggtttc
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372201 gcaaaagaac catctgacaa aggactctta tccaaaatac acaaagaaat
372251 cttaaaattc aacaataaga aaatgagcag cccaattaaa aaatgggcaa
372301 aagacctgaa cagacaccta atcaaagaag atatacagat agcaagtaaa
372351 catatgaaaa gatttaaaca tattacatca ttagagaatt gcaaataaaa
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372501 ttgctgatgg gaatacaaaa tggtacagct tcctcagaag acagcagctt
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372601 acgccttatt atttacccaa ataaactgaa aatttgtgtc cacacaaaca
372651 cctgcacatg gatgtacata gaagctttat tcatagtcgc caaaagttgg
372701 aagcaaccaa gatgtccttc agtaagtgaa tgataaataa actgaggtat
372751 atctagacaa tggaatatta tttagcagta aaaagaaatg agatatcaag
372801 ccataaaaag acatggaaga aacaaatgct tatcactgag tgaaataagc
372851 tgatctaaaa ggctgcatac tgtatgacac caactatatg acattctgga
372901 aaagacacaa ctatggagac aataaaaaga tcagtggttg tcaggggttg
372951 ggagaaaggg aggtatgaat aggtgaaaca cgggactttt ttagggcagt
373001 gaaacaatgc tgtataatac tgcaatggtg aatatgtcat tatacatttg
373051 tcaaaattca tagaaagtat aacaccaaga acgaacacta ctgtaaagta
373101 tggactttgg gtgataatga tgtgtaattg tagggccatc agttgtaaca
373151 agtgtaccat tatggtatgg gatgctgata gttggggaga ttgtgttgtg
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373251 taaacctaaa actgatctaa aaactaaagg ttattaatta aggaccaaat
373301 gagggtcgag tgcggtggct catgcctgta atctcaacac tttgggaggc
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373951 ttatctatga agaaattcct aaagaatcta caataaaact gttggattaa
```

FIG. 7 CONT'D

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374601 tttttgttgt tgttgttcgt ttttttttt tgagacagtc tccctctgtt
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375101 acaaaagttc aaaggcaatt caatagagaa ggaacagttt tttcaacaaa
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FIG. 7 CONT'D

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376901 ctcacacctg taatctcagc actttgggag actgaggcgg gcggaccacg
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377001 acttaaaata caaaaaatta gccgggcgtg gtggtgggtg cctgtagtcc
377051 cagctactcg ggaggtagag gcaggagaat ggtgtgaacc cgggaggcgg
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377251 aaaatcgctt gaaaccagga ggcagaggtt gcagcgagct gaaattgcac
377301 cattgcactc cagcctgggc gacagagcga gactccatct caattaaaaa
377351 caacaacaac aacaacaaac tgctcattac ataaagatcc aatctggtaa
377401 tataaatttt attttattaa gatatatact tagcactttg aattgcttca
377451 aacataattt gaggggaaca aagacttatt ggcttgttgg ttttaagaac
377501 tgaatttgcc taggcattag aaaaagtaca gaaagctccc cagagcagtc
377551 tagagcccag cagtcgcagg cccctaggcc atttgagtta taggacagaa
377601 ggtgggggtg tcagtgaaca ctattccttc tgagtgtctg tcaatggagg
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379551 tgatccaccc gcctcggcct cccaaagtgc tgggattaca ggcgtgggcc
379601 accacgtcca gcctgctaga gtcttttata cttgatataa tttcttgaat
379651 tc
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FIG. 7 CONT'D

FIG. 8

Domain architectures of CLLD8, NY-REN-34 (ANGE) and related proteins, drawn approximately to scale.

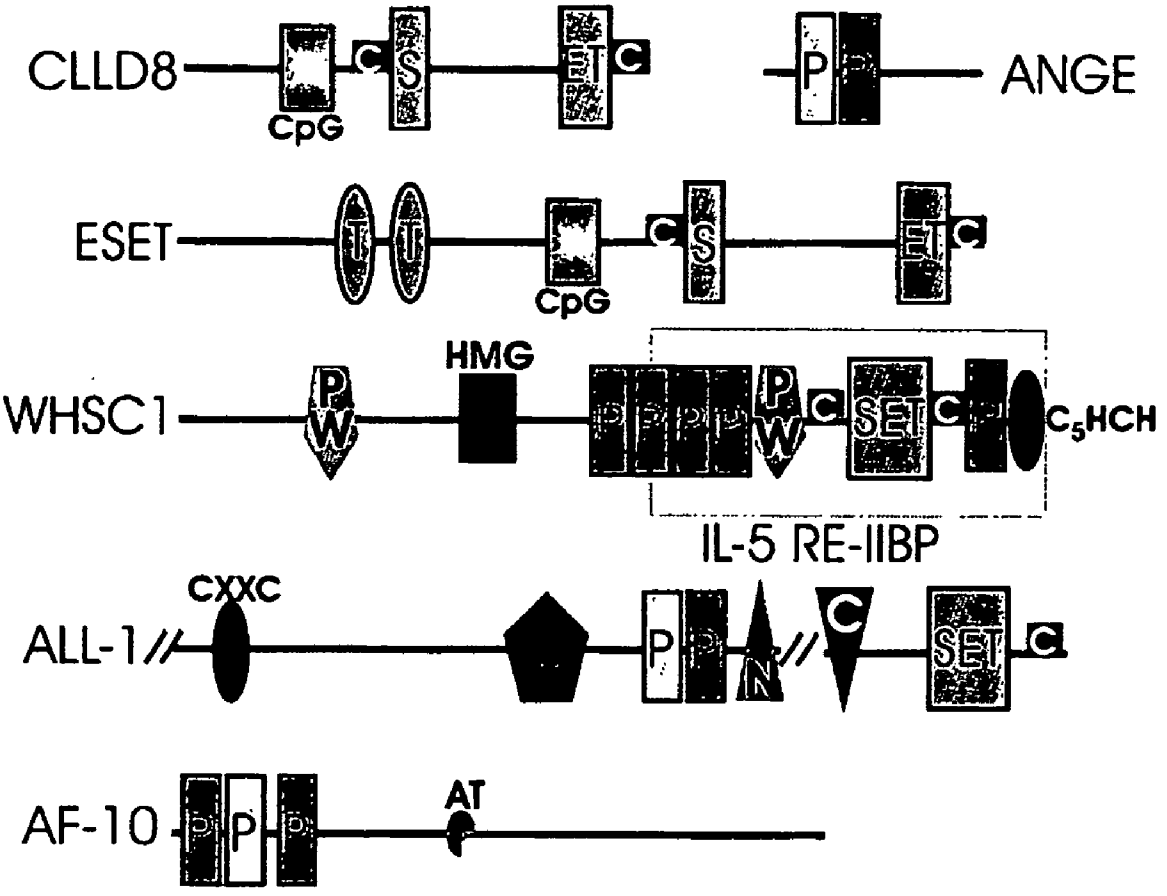
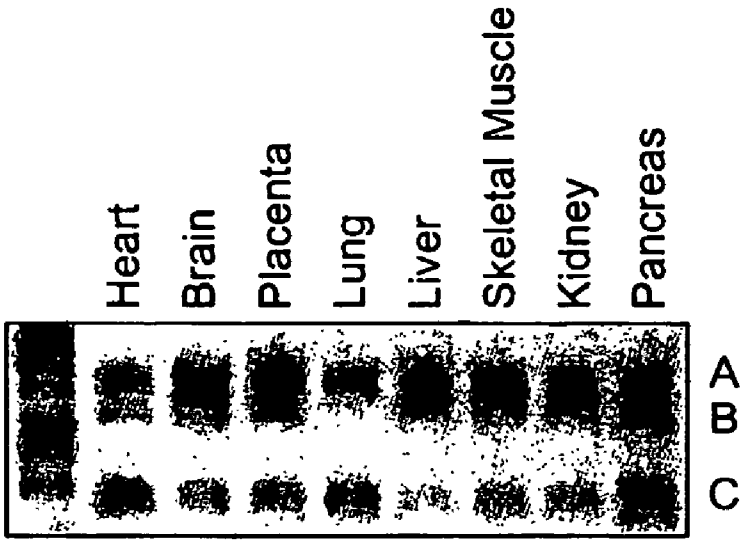


FIG. 9

Expression of CLLD8/NY-REN-34 (ANGE) gene complex



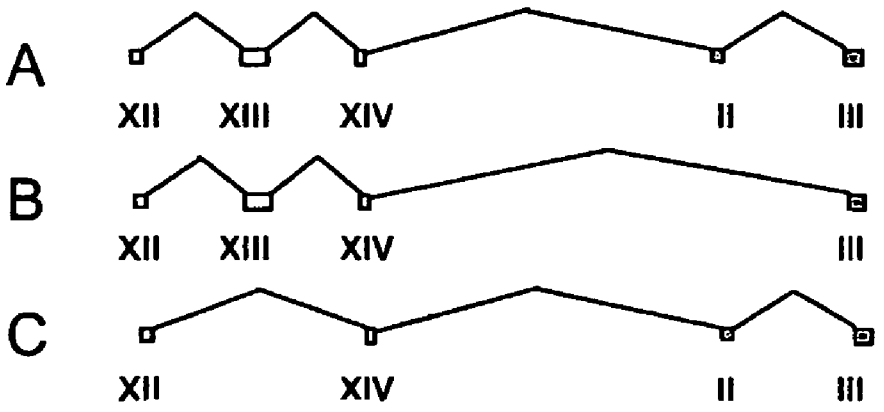
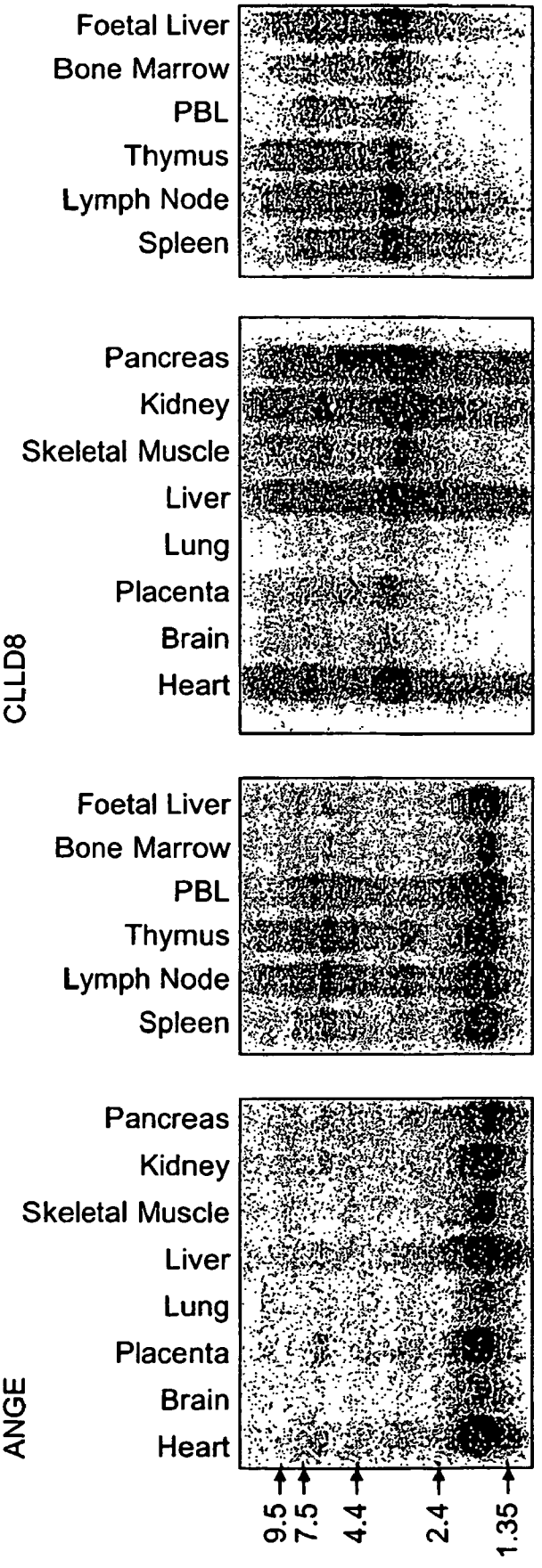


FIG. 10

Northern blots of gene for NY-REN-34 (ANGE) and CLLD8



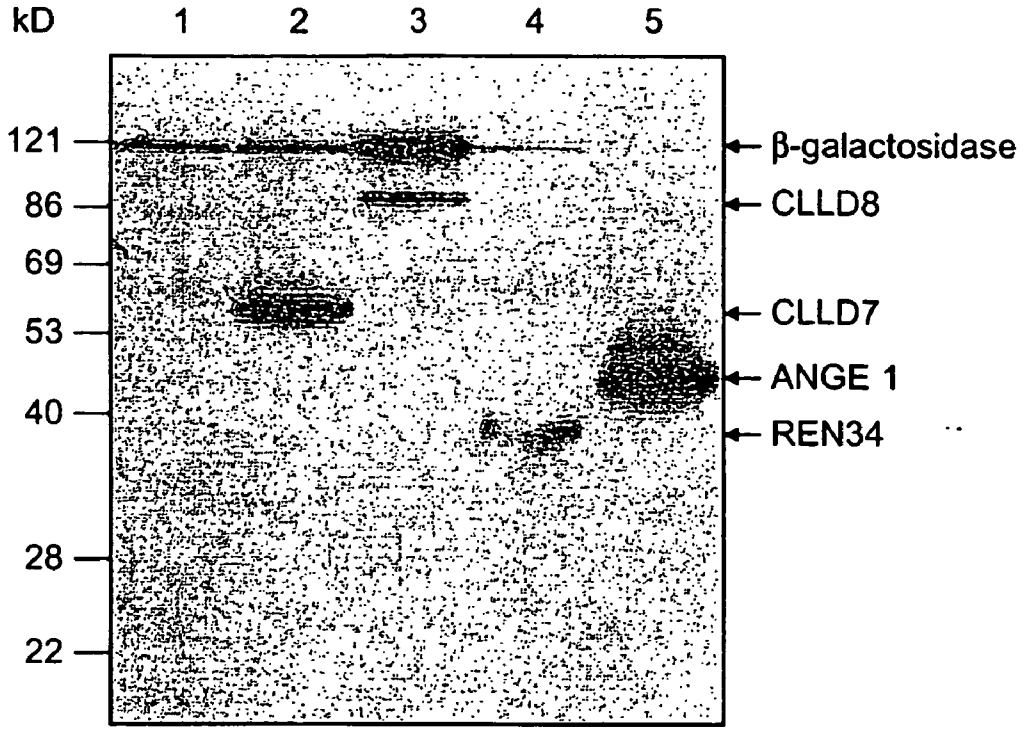

kD
1
2
3
4
5
121
86
69
53
40
28
22
β-galactosidase
CLLD8
CLLD7
ANGE 1
REN34

FIG. 11

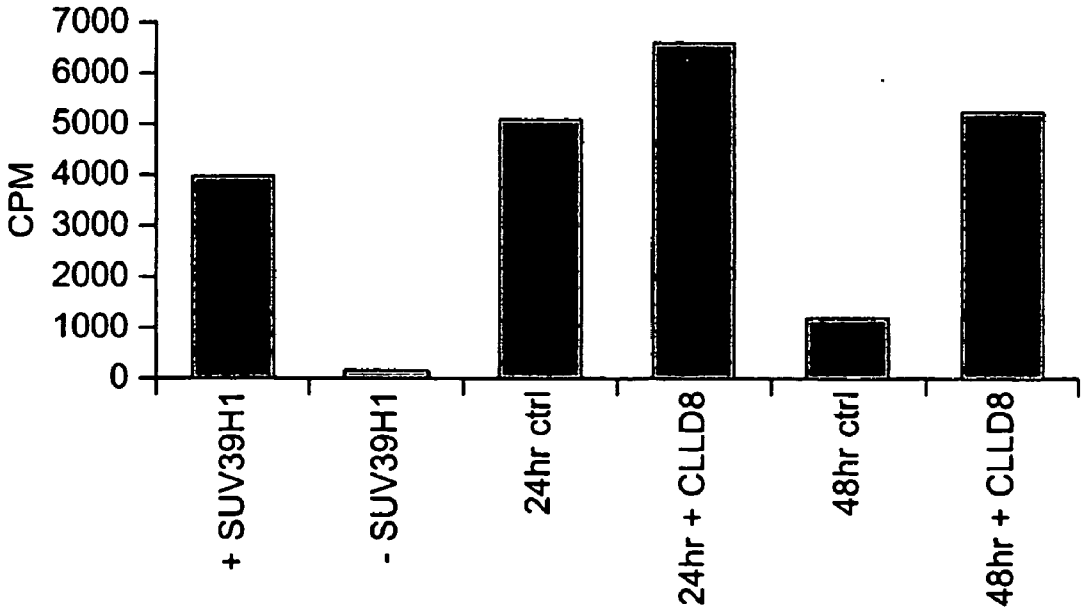
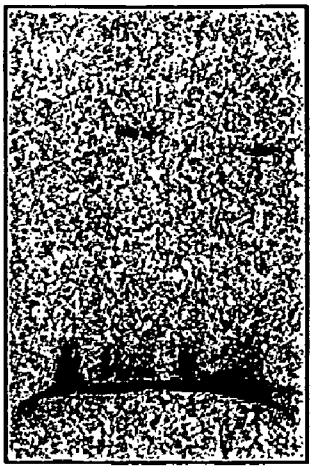

CPM
7000
6000
5000
4000
3000
2000
1000
0
+ SUV39H1
- SUV39H1
24hr ctrl
24hr + CLLD8
48hr ctrl
48hr + CLLD8

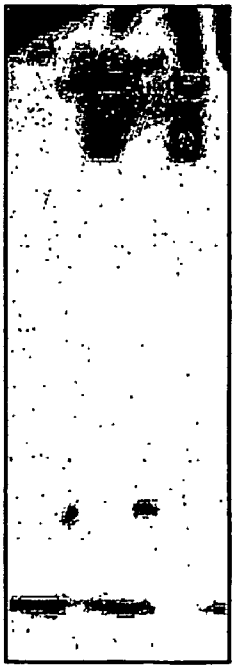
FIG. 12

FIG. 13

a) NR1 (REN34 promoter)
Left to right: NR1WT,NR1WT+MG63,NR1MUT,NR1MUT+MG63



b) NR2 (CLLD7 promoter)
Left to right: NR2WT,NR2WT+Jurkat,NR2MUT,NR2MUT+Jurkat



c) NR3 (CLLD7 promoter)
Left to right: NR3MUT,NR3MUT+MG-63,NR3WT,NR3WT+MG-63



d) NR4 (CLLD8 promoter)
Left to right: NR4WT,NR4WT+PC12,NR4MUT,NR4MUT+PC12

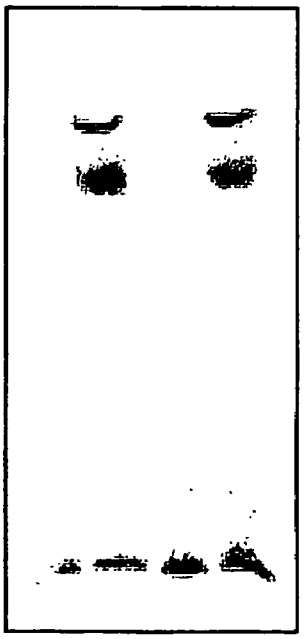
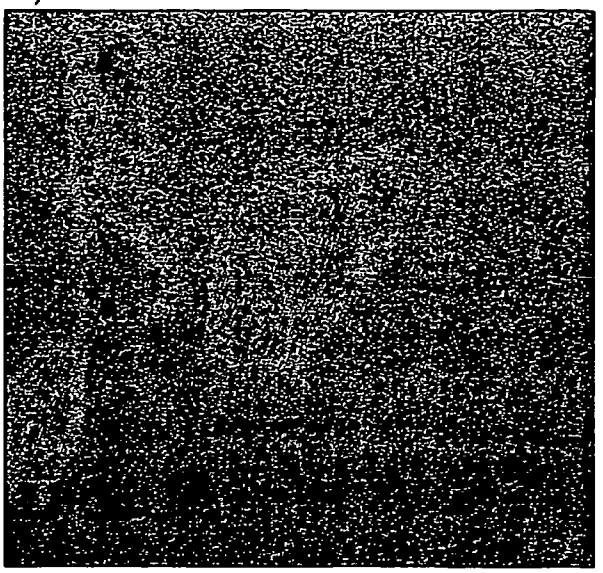
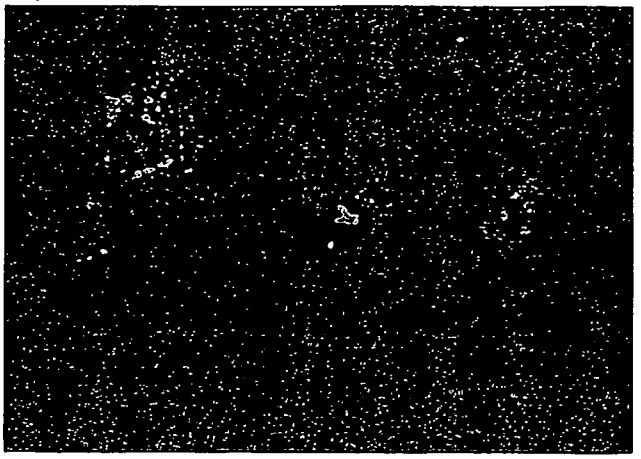


FIG. 13 CONT'D

a)



b)



c)

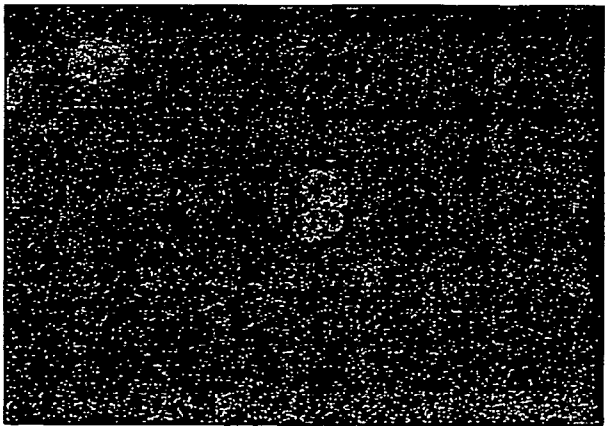


FIG. 14

Table 1

Association between Qts and SNPs

a) BAC BA101D11

		P Values from QTDT							
MARKER	POSITION	LnIgE	PSTI	LnIgE STI as covariate	STI lnIgE as covariate	LnIgE 4_2 as covariate	STI 4_2 as covariate	LnIgE 38_1 as covariate	STI 38_1 as covariate
101283b16_1	449								
101283b16_2	685		0.0330				0.0240		0.0350

Table 1

b) BAC BA103J18.03548

P Values from QTDT

MARKER	POSITION	LnIgE	PSTI	LnIgE STI as covariate	STI lnIgE as covariate	LnIgE 4_2 as covariate	STI 4_2 as covariate	LnIgE 38_1 as covariate	STI 38_1 as covariate
101660b13 1	155075								
101063b15 1	164307								
101458b10 1	182579								
101094b11 2	231215			0.0015				0.0420	
185316b2 1	297898								
185316b2 2	297860								
185316b1 2	300838	0.0076		0.0360				0.0120	
185316b1 1	301185	0.0017		0.0140				0.0026	
185306b7 3	317115	0.0340		0.0220				0.0313	
185306b7 2	318304	0.0093						0.0110	
185306b7 1	318308	0.0040		0.0380				0.0042	
185752b4 1	338162			0.0290					
185752b4 2	338679	0.0015		0.0032				0.0002	0.0350
185752b4 3	339505	0.0034		0.0074				0.0028	
154016 5S	339679	0.0430						0.0061	

Table 1 cont'd

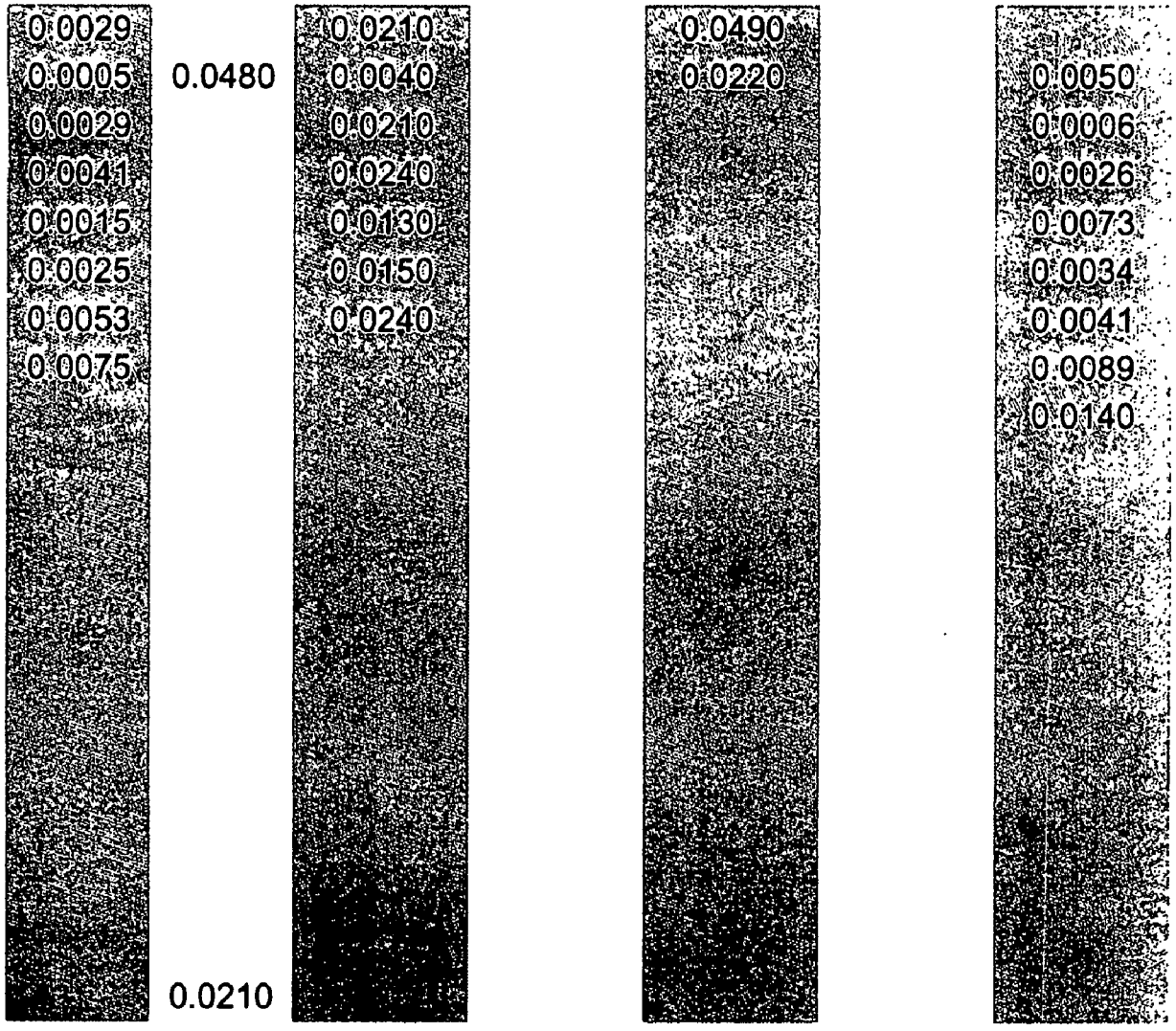


Table 1

c) BAC bA236M15.0030

P Values from QTDT

MARKER	POSITION	LnIgE	PSTI	LnIgE STI as covariate	STI lnIgE as covariate	LnIgE 4_2 as covariate	STI 4_2 as covariate	LnIgE 38_1 as covariate	STI 38_1 as covariate
4321031b43	30907	0.0200	0.0062				0.0170		0.0250
4321031b43	31147		0.0073		0.0140		0.0170		0.0480
1895799 1	76790								
143317 1	81615		0.0120		0.0240		0.0150		
4321017b38	108259		0.0090		0.0140		0.0150		
4321017b38	109085		0.0021		0.0060		0.0048		
195226b35 1	183672		0.0031		0.0046		0.0056		
1951054b37	197991								
1951054b37	198562								
236969b17 1	227369		0.0070		0.0140		0.0100		
236717b28 1	265325								
236717b28 2	265725		0.0310				0.0250		0.0290
2361170b26	364495					0.0230		0.0320	
2361170b26	364858								
626789 3	128859								
626789 1	132421								
626789 2	129231								
1895799 3	97972								
5133822 2	27156								
1895799 1	76790								
143317 1	81615								
5133822 1	27143								
1895799 2	97969								

Table 2A
SNP/Marker Associations with Total Serum IgE (LnIgE)

MARKER	SNP NAME (Cross Ref to Table 1)	BASE CHANGE	POSITION	P (QTDT) LnIgE
101063b15_1	101063B15.1	C/G	164308	
101458b10_1	101458B10.1	A/G	182663	
101094b11_2	101094B11.2	A/G	231215	
d8ex7	d8ex7	A/G	294172	0.018
185316b2_2	185316B2.2	A/G	297860	
185316b2_1	185316B2.1	G/T	297898	NS
185316b1_2	185316B1.2	C/G	300838	0.0076
185316b1_1	185316b1.1	A/G	301185	0.0017
d8in12	d8in12	C/T	305881	
d8in13	d81n13	A/G	308393	
185306b7_3	185306B7.3	C/G	317115	0.034
185306b7_2	185306B7.2	A/G	318304	0.0093
185306b7_1	185306B7.1	A/C	318308	0.004
154016_2R	154016_2	A/G	324399	0.016
185752b4_1	185752b4.1	G/T	338162	
185752b4_2	185752B4.2	A/G	338770	0.0015
154016_in5r	154016in5	A/G	338997	0.0043
185752b4_3	185752B4.3	C/G	339509	0.0034
154016_5S	i154016.5	C/G	339679	0.043
Angein7	angein7	C/T	341533	0.003
185752b5_1	185752B5.1	A/T	345206	0.0029
185752b5_2	185752B5.2	C/T	345743	0.0005
154016_319	185752B5.3	A/G	346363	0.0011
185752b6_1	185752B6.1	A/G	350507	0.0041
44593_15	44593_15	GAAAGATGATAAAGT	350770	0.0015
185752b6_3	185752B6.3	A/G	351465	0.0025
185752b6_4	185752B6.4	C/T	351804	0.0053
432343b33_2	432343B33.2	C/T	399283	0.0075
432343b33_1	432343B33.1	A/G	399823	
432343b32_2	432343B32.2	C/T	401694	

Table 2A cont'd
SNP/Marker Associations with Total Serum IgE (LnIgE)

MARKER	SNP NAME (Cross Ref to Table 1)	BASE CHANGE	POSITION	P (QTDT) LnIgE
432343b32_1	432343B32.1	A/G	402491	
5133822_2	i5133822.2	G/T	427516	
4321031b43_1	4321031B43.1	A/G	430907	0.02
4321031b43_2	4321031B43.2	A/G	431147	
1895799_1	i1895799.1	C/T	476787	
143317_1	i1433174.1	A/C	481729	
4321017b38_3	4321017B38.3	C/T	508259	
4321017b38_1	4321017B38.1	A/G	509085	
626789_3	i626789.3	C/T	528859	NS
195226b35_1	195226B35.1	A/G	583672	
1951054b37_1	1951054B37.1	C/T	597991	
1951054b37_2	1951054B37.2	C/G	598562	
236969b17_1	236969B17.1	A/G	627368	
236717b28_1	236717B28.1	G/T	665326	
236717b28_2	236717B28.2	C/T	665725	
2361170b26_2	2361170B26.2	C/T	764495	
2361170b26_1	2361170B26.1	C/G	764858	

Table 2B

Association of common b4_2.b5_3.b43_1 haplotypes to total IgE in subject panels

	AUS1			AUS2			UK2			ECZ*		
Haplotype	freq	p (mul)	p (ind)	n (freq)	p (mul)	P (ind)	freq	p (mul)	p (ind)	freq	p (mul)	p (ind)
A 2.1.1	0.449	0.011	0.014	0.396	0.12	0.078	0.378	0.0039	0.0153	0.294	0.0012	0.0001
B 1.21	0.22		••	0.229		••	0.198		••	0.177		••
C 1.2.2	0.193		••	0.238		••	0.192		••	0.234		0.0019
D 2.1.2	0.084		0.005	0.077		0.036	0.09		0.0012	0.113		••
Haplotype	n=296			n=533			n=323			n=531		

*RAST index included as a covariate

Table 2C

SNPs	SNP Location	Allele freq	Atopy Chi Squared	Asthma Chi Squared	Atopy and Asthma Chi Squared	Atopy P value	Asthma P value	Atopy and Asthma P value	Atopy Obs:exp	Asthma Obs:exp	Atopy and Asthma Obs:exp
CLD802	Exon 4	0.553	0.81	0.5	1.59	0.305	0.447	0.162	574:584	329:335	255:264
CLD803	Intron 7	0.692	8.64	2.48	10.64	**0.003**	0.106	**0**	716:744	440:452	337:359
CLD807	Intron 13	0.703	9.78	5.41	12.79	**0.003**	**0.019**	**0**	844:877	509:528	392:417
ANGE01	Exon 2	0.353	2.76	3.71	6.57	0.089	0.077	**0.013**	421:403	255:239	202:183
ANGE02	Intron 2	0.291	2.01	0.7	2.35	0.149	0.456	0.144	311:325	180:186	137:147
ANGE08	Intron 3	0.392	2.58	1.42	4.55	0.095	0.212	**0.023**	466:449	272:262	220:204
ANGE11	Intron 7	0.541	4.48	6.97	9.08	**0.026**	**0.008**	**0.002**	596:620	335:359	255:279
CLD713	Intron 12	0.046	0.24	0.01	0.06	0.662	0.922	0.814	56:58	33:33	26:27
CLD712	Intron 11	0.854	0.88	0.07	0.25	0.392	0.775	0.649	1058:1066	624:626	490:493
CLD706	Intron 6	0.116	0.85	0.07	0.24	0.382	0.787	0.647	117:123	75:74	55:57
CLD703	Exon 3-aa24, Val-Ala	0.277	0.18	0.01	0.01	0.721	0.92	0.912	359:354	220:221	175:174
CLD701	5' UTR Promoter	0.955	0.02	0.01	0	0.9	0.944	0.979	1228:1227	727:727	568:568

Statistically significant values in bold
Haplotype defined by SNPs shaded in grey

Table 2C cont'd

Haplotype*	Frequency
1.1.1.1.1.1.1	0.219
2.1.1.1.1.1.1	0.011
1.1.1.1.2.1.1	0.275
2.1.1.1.2.1.1	0.01
1.1.1.1.1.1.2	0.017
2.1.1.1.1.1.2	0.049
1.1.1.1.1.2.2	0.011
2.1.2.1.1.2.2	0.022
2.1.1.2.1.2.2	0.064
2.2.1.2.1.2.2	0.028
2.2.2.2.1.2.2	0.241

The haplotype 2222122 (shaded) with a frequency of 24%, shows the greatest distortion in all cases

	Obs	Exp	Chi Sq	Prob
Atopy	321.96	290.97	9.88	0.0017
Asthma	193.84	171	9.2	0.0024
Atopy+Asthma	156.92	130.66	15.91	0

Table 3

Full length cDNAs isolated from region

Name	Position in Contig*	Homology: Function
CLLD8	294727-309803	Methyl CpG binding domain and a SET domain. Epigenetic modulation of gene expression by histone H3 methylation
ANGE (NY-REN-34)	313649-346509	PHD zinc finger domains: nuclear protein binding (possibly BRCA1)
CLLD7	349634-410846	RLG and RCC1: cell cycle regulation by chromatin remodelling; histone H2A and 2B docking.
Emopamil - binding related protein (EBRP)	467557-498344	D8-D7 sterol isomerase
Karyopherin-∀ 3 (KPNA3)	506187-598852	Nuclear transport protein
CLLD6	721749-734946	SPRY domain: potential microtubule-binding

*The position is in base pairs from the beginning of the reference sequence.

Table 4A
SNPs identified in the region

Base Change	SNP Position	SNP NAME	MARKER (Cross ref to Table 2)
C/G	3706	101063B15.1	101063b15_1
A/G	20722	101458B9.1	
A/G	22872	101458B10.1	101458b10_1
C/T	23748	101458B10.2	
A/G	71508	101094B11.2	101094b11_2
A/C	71903	101094B11.1	
A/G	78071	1011417B14.2	
A/C	78790	1011417B14.1	
A/G	102686	CLLD8_X1_A384G	
G/T	102687	d8ex1	
A/G	108716	d8in1a	
A/T	109340	d8in1b	
A/C	118529	d8in1c	
C/T	118887	d8in3b	
C/T	118893	d8in3c	
C/G	118996	d8in3d	
A/G	119053	CLLD8_X4_G28A	
G/T	121758	d8in4a	
C/T	121801	d8in4b	
A/G	121925	d8in4	
A/G	127665	d8in6a	
A/T	129915	d8in6b	
A/G	132497	d8in6d	
A/G	132820	d8in6e	
A/G	134465	d8ex7	d8ex7
A/G	138153	185316B2.2	185316b2_2
G/T	138191	185316B2.1	185316b2_1
C/T	138771	d8in8	
A/T	140748	d8ex101	
A/G	140942	d8ex10	

Table 4A cont'd
SNPs identified in the region

Base Change	SNP Position	SNP NAME	MARKER (Cross ref to Table 2)
A/T	140944	8ex101	
C/G	141131	185316B1.2	185316b1_2
A/G	141132	d8in9	
A/G	141478	185316b1.1	185316b1_1
A/G	142531	d8in11c	
A/G	142712	d8in11d	
A/C	143199	d8in11e	
C/T	143376	d8in11f	
A/G	144314	d8in12a	
A/T	145955	d8in12b	
A/G	146018	d8in12c	
C/T	146172	d8in12	d8in12
A/G	147356	d8in13a	
A/G	148684	d81n13	d8in13
C/G	151091	d8in15b	
C/G	153918	i154016.1	
C/T	155126	154016_1A.1	
C/G	157408	185306B7.3	185306b7_3
A/G	158149	angein1a	
A/G	158597	185306B7.2	185306b7_2
A/C	158601	185306B7.1	185306b7_1
G/T	158996	angein1b	
A/G	164692	154016_2	154016_2R
C/T	170985	angein2	
C/T	170987	i154016.2	
C/T	171079	ANGE1X3C148T	
A/G	171373	ANGE1rs2147985	
C/G	175937	ANGE1X4C46G	
A/G	175961	154016_4	
C/T	175964	ANGE1X4C76T	
ACTC/-	175972	154016_4	

Table 4A cont'd
SNPs identified in the region

Base Change	SNP Position	SNP NAME	MARKER (Cross ref to Table 2)
C/G	175974	i154016.4	
G/T	178453	185752b4.1	185752b4_1
A/G	178972	185752B4.2	185752b4_2
C/T	179021	154016_5	
A/G	179288	154016in5	154016_in5r
C/G	179798	185752B4.3	185752b4_3
C/G	179972	i154016.5	154016_5S
A/G	181343	i154016.6	
C/T	181824	angein7	Angein7
A/T	182157	i154016.7	
(TT)/-	184474	ANGE1X9_2_base_deletion_from_position_223	
(TTAT)/-	184486	ANGE1X9_4_base_deletion_starting_from_position 234	
C/T	184492	ANGE1X9C241T	
A/G	184512	ANGE1G261A	
C/T	184592	ANGE1X9C341T	
C/T	184595	ANGE1X9C344T	
C/T	184601	ANGE1X9T350C	
C/G	184602	ANGE1X9G351C	
C/T	184627	ANGE1X9C376T	
A/G	184743	ANGE1X9A492G	
C/T	184916	angein9a	
A/G	184937	angein9b	
A/T	185499	185752B5.1	185752b5_1
C/T	186064	185752B5.2	185752b5_2
A/G	186655	185752B5.3	154016_319
C/T	186835	angein10	
A/G	187062	i154016.9	
TCTTTA/-	190178	6_BASE_INSERTION_STARTING_AT_POS_371	
AGATAA/-	190181	44593_6	
A/T	190246	d7ex13a	
T/-	190396	1_BASE_DELETION_AT_POS_153	

Table 4A cont'd
SNPs identified in the region

Base Change	SNP Position	SNP NAME	MARKER (Cross ref to Table 2)
A/G	190429	CLLD7_X13.4_C120T	
A/C	190656	CLLD7_X13.3_RS1046034	
A/G	190800	185752B6.1	185752b6_1
GAAAGATGATAAAGT	191055	44593_15	44593_15
G/T	191122	d7ex13b	
C/T	191134	CLLD7X13.2_RS1046028	
C/T	191168	d7ex13c.	
C/G	191220	185752B6.2	
A/G	191749	185752B6.3	185752b6_3
A/T	191763	d7ex13e	
C/G	191818	CLLD7_X13_C499G	
C/T	192097	185752B6.4	185752b6_4
A/G	192200	d7ex13f	
A/T	198826	d7in12	
C/T	199514	CLLD7_RS1536195	
C/G	199779	d7ex11	
C/G	207467	d7ex9a	
A/G	207470	d7ex9b	
A/G	207494	d7ex9c	
G/T	207533	d7ex9d	
A/G	210227	CLLD7_X7_RS2274278	
C/T	210512	CLLD7_RS_2274281	
C/T	213444	d7in6	
A/G	213460	CLLD7_X6_RS2274284	
C/T	217944	d7ex5a	
A/G	217995	d7ex5b	
C/T	225121	d3in3	
A/G	225190	d3ex3a	
A/G	225207	d3ex3b	
C/T	239484	432343B33.2	432343b33_2
A/G	240010	432343B33.1	432343b33_1

Table 4A cont'd
SNPs identified in the region

Base Change	SNP Position	SNP NAME	MARKER (Cross ref to Table 2)
C/T	241987	432343B32.2	432343b32_2
A/G	242784	432343B32.1	432343b32_1
A/T	243337	CLLD7_X1A295T	
C/T	243831	CLLD7_PROM_1_A351G	
A/T	266607	432363B41.1	
A/G	278239	i5133822.1	
G/T	278252	i5133822.2	5133822_2
A/G	282003	4321031B43.1	4321031b43_1
A/G	282243	4321031B43.2	4321031b43_2
C/T	283853	4321031B44.1	
C/T	327886	i1895799.1	1895799_1
A/C	332711	i1433174.1	143317.1
C/T	349070	i1895799.2	
A/C	349073	i1895799.3	
C/T	357678	4321017B38.4	
C/T	359360	4321017B38.3	4321017b38_3
C/G	359691	4321017B38.2	
A/G	360186	4321017B38.1	4321017b38_1
A/G	360524	i626789.4	
C/T	379960	i626789.3	626789_3
A/T	380332	i626789.2	
C/T	383520	626789.1	
C/T	383522	i626789.1	
C/G	407505	1951336b18.1	
A/G	434774	195226B35.1	195226b35_1
G/T	443990	195226B34.1	
C/T	449093	1951054B37.1	1951054b37_1
C/G	449664	1951054B37.2	1951054b37_2
A/G	478470	236969B17.1	236969b17_1
G/T	516429	236717B28.1	236717b28_1
C/T	516829	236717B28.2	236717b28_2

Table 4A cont'd
SNPs identified in the region

Base Change	SNP Position	SNP NAME	MARKER (Cross ref to Table 2)
A/G	549422	236357B29.1	
A/C	593629	236618B30.1	
C/T	615612	2361170B26.2	2361170b26_2
C/G	615975	2361170B26.1	2361170b26_1

Table 4B

No	Marker	Position	SNP	F primer	R primer	Primer Modified	enzyme
1	101660b13_1	155075	A/T	ATGTGGGCTGGAGTTGTG	CAAGTGTGTGACATATATC	no	MnlI
2	101063b15_1	164308	G/C	GCTCTTAATTCCCTATTGC	CTGGAGGAATTCTACCCC	no	AvrII
3	101458b10_1	182663	A/G	ACCCAACGTAATCTACAGGTGCA	GTCAAGTCATGTGATTTCTTC	yes	BtsI
4	101283b16_1	183384	T/C	GCATTTCTCCAGGGCTTTG	ACTGCCTGAGGACCAAAC	no	BsaAI
5	101283b16_2	183563	C/T	CAGAGGCTGGGAGAGAG	CGTTGGGAGGGAAGTCAG	no	HphI
6	101094b11_2	231215	C/T	CCAAGTGTACAGGGAATAG	AATGAAAGTAGAAAAGGGCC	yes	HpaII
7	185316b2_2	297860	C/T	GTTATTTTGTCACTTGACAAG	ACATTTATCAAGACAGTCTC	no	MseI
8	185316b2_1	297898	C/A	GTTATTTTGTCACTTGACAAG	ACATTTATCAAGACAGTCTC	no	Cac8I
9	185316b1_2	300838	G/C	GGTCCCAACTACATTTTGC	GCTTACTGTGTAAGTAACAG	no	BsrI
10	185316b1_1	301185	T/C	ATCTCTAATAACTGAATGGTA	AACATAGATGTTCTTACTTAG	yes	RsaI
11	185306b7_3	317115	G/C	AATAGGAATAAGGATGTGAGT	GAAATCTTCTATCCTGAATTC	yes	HinfI
12	185306b7_2	318304	T/C	AAGCGATACTATCTGACAG	AATCTGTACAGTTCCTGAG	no	MseI
13	185306b7_1	318308	T/G	TAAATCCCCCCATATCGCAG	TGAGAGATGCCTGTCTGTG	yes	BtsI
14	185752b4_1	338162	T/G	CACTTCATTTCTTCATCATAG	GCAAGCTTAATTTAAGGAGA	yes	BsmAI
15	185752b4_2	338770	A/G	GTTTTAAAGAAAGGTAAACAATT	CAAAGAGAATAGGTCTTGTTC	yes	MfeI
16	185752b4_3	339509	C/G	CACCAATTATATTTGTTTTCC	GGACGATTTGGAAAGTACC	no	NspI
17	154016_5S	339479	G/C	CCTTTATCATAAGTGCTGC	AAGAGCTTCCCGACTATG	no	HpyCH4III
18	185752b5_1	345206	A/T	GAGTGAGTGCCCTCC	GGTTATAAATGTAGTAAAGAA	yes	EcoRI
19	185752b5_2	345743	C/T	CTAAGTTTCCACAATTAAAAG	GTCCCTTTGTATATCTTTGAG	no	AluI
20	185752b5_3	346362	G/A	GCATCTCAACAAAGGTGGC	CATGACTCTTGGCTTAGGAGA	yes	BsmAI
21	154016_319	346363	G/A	TGACTCTTGGCTTAGGACA	CATGTCAACAAAGGTGGC	yes	NlaIII
22	185752b6_1	350507	A/G	CCCACTTGTAATTTGGCTC	AAGACAGTAGTTTATTTGAAC	no	SpII
23	44593_15	350770	15bp del	GGAACACCATAATTTTGGTG	TCTTCAAGTCAACCCTCTTA	no	-
24	185752b6_3	351465	A/G	CAACTTTTCACGGATACTTC	TACGGCTTTTCTTGAGCC	no	BsaAI
25	186752b6_4	351804	T/C	CCCTTTTACATGTTCCAGC	TTTTGTTGTGTGTCCAGGAT	no	MnlI
26	432343b33_2	399283	A/G	CTCAAGTCCCCAGATCTC	CAGGTACCTGTGGGATATTAAA	no	AciI
27	432343b33_1	399823	T/C	ACTTCTGCTTCAGATCCC	ATAGTAATCACAGAATGGGAT	yes	FokI
28	432343b32_2	401649	A/G	CAAAGCTGTCAAGCTTGTAG	GAAGGGATATCATCATCATGA	yes	PshAI
29	43234332_1	402491	T/C	GGCAGGGATTTTGTTAGTG	AGTGTCTTACATGCAAATACAT	yes	NlaIII

Table 4B cont'd

30	5133822_2	427516	G/T	TATGTAGGAATAAGGCAATG	AGTTTCTTCAACAACCTGC	yes	PstI
31	4321031b43_1	430907	G/A	TGATCCTCAACACAGCTC	ACATTTTTCCAGAGATATTGTA	yes	RsaI
32	4321031b43_2	433147	A/G	CTCAAGTCCCCAGATCTC	CAGGTACCTGTGGGATATTAAA	no	AclI
33	1895799_1	476787	C/T	GAGGCGTTTGACAGTCAC	TTAGGGTGAGACATACCC	no	BanI
34	143317_1	481792	C/A	CAGAGAAAGACATGGGAG	CTACTGTTTGTGCCACAG	no	BbcVI
35	4321017b38_3	508259	G/A	GGAAGACTAAAGAGCTGC	TTTATTCAATAACCAAGTTTC	yes	PstI
36	4321010b38_1	509085	T/C	CTTCATTATAAGGTAAAGCTG	TAACACGTTTCGAAACTGC	yes	Fnu4H
37	195226b35_1	583672	T/C	GCTTTTTTTTGTCTTTTTAGATCA	GTACACAAATTAAGTTATACAAG	yes	NiaIII
38	1951054b37_1	597991	C/T	GTAAACAATGAAACAAAAACC	GCAGCGCTAGAGGTCTC	no	MboII
39	1951054b37_2	598562	C/G	GCAACTAACTGAGTGACC	TCCGACCTCCGCTCCTA	yes	AvrII
40	236969B17_1	627368	C/T	CACATCTCATAATGGTATCAC	GAAGAAGGGTATGCTTTTAGA	yes	MboII
41	236717b28_1	665326	T/G	TTCTTGGTAAACATCTCTAC	CCTGAACAGGCTGTACTC	no	EcoRI
42	236717b28_2	665725	T/C	GATAGGAAAGATTTTTGGTCT	CCGTTCTTAGTTTTGGGTC	yes	BsmAI
43	2361170b26_2	764495	A/G	CTGGGCTACCTGTGGATCACT	CTGTTTACAGTAGACATTCC	yes	BsaBI
44	2361170b26_1	764858	C/G	CTAGGCAGCAGGGCACTC	GGCACCTCACGTGGATG	no	ApaI
45	626789_3	128859		TCACACCTGCAATGAAATC	GTTGACTCTCTTCTTGCC		
46	154016_9R	346769		ATTCTACTTACAGCCCATG	GTCCAATTTAAAATTTAGGCG		
47	5133822_1	27143		TAAGTGCAGCGAACCCAG	CACTTGGCTGCCTGGAC		
48	626789_4	109423		ACTTACATCATCACCAGAG	ATTTCTCCATGATTAAAATCAG		
49	626789_1	123421		ACATCTTTTTAGACACATAAC	TTGGCTAGCAGGCAATTG		
50	626789_2	129231		TCCTCACCATTAGTCAAAG	TTAATGGTATGATAGCAACC		
51	1895799_2	97969		GTTTTGGTGGAGGAATCGG	GTTTCTCTCCCTGCTTTC		
52	1895799_3	97972		GTTTGGTGGAGGAATCGG	GTTTCTCTCCCTGCTTC		
53	154016_1S	313625		GACTAGACTGGAATCTGG	CGGTACACACCGGTGG		
54	154016_4S	335681		ATTCCCAAATGAGCAGCC	CATAACCCCTGTGCATCC		
55	154016_4R	335560		ATTCCCAAATGAGCAGCC	CATAACCCCTGTGCATCC		
56	154016_4R2	335668		ATTCCCAAATGAGCAGCC	CATAACCCCTGTGCATCC		
57	154016_4ins	335679		ATTCCCAAATGAGCAGCC	CATAACCCCTGTGCATCC		
58	154016_5Y	338728		GACATCTAACTGAGTCTCC	TAGTCAGTCATATCACATAG		
59	154016_1A.1Y	314833		CACAAAGGCACCAAACCAC1	ACCCTTACAGTCCATATGTA		
60	154016_1A.2Y	314849		CACAAAGGCACCAAACCAC	ACCCTTACAGTCCATATGTA		

Table 4C

Gene name	SNP name	SNP alias	5' Flanking Sequence	SNP (IUB code)	3' Flanking Sequence	Exonic - amino acid change
CLLD8	CLLD8 X4 G28A	CLD802	TCTAATGCAGATAGTCCTATTAACCTCTCAGAGGAATAGTG AAGATTAAATGAGATAAAATATGTAAATTGTTTAGCACAGT AGCTGGCACCATAAATAAAGGTAATGGT	R	ATGCTGTTTTTCTGTCTTTAACAGAATACATCCAAGC AATGATTCTAGTGAATGAAGCAACTATAATTAACAGT TCAACATCAATAAAGGGTATGTACATCTCTATTCC	
CLLD8	CLLD8 X8 G91A	CLD803	CTATTTAGGGAAAAAGCTGATAGTGTTCATGAGCCAAACTA TTCTAAATGCTATTACATCTTTTATTACATCATTTACACATT TATCAAGACAGTCTCTTGACTT	R	ACTTGCTGCTTTTTCATTCTTTCTCCATCCATTGCCT GCCTTTTAGAACAAAATGTGCATGTCTTCAACTGAC AGCAAGGAATGCCAAAACTTCCCCCTTGTCAAGTGA CAAAAT	
CLLD8	CLLD8 X14 G40A	CLD807	TTATAGGGATTTGTCCCATTTTTGCATTTCTGCCAGCAACA TAGAAGAGCGTCAGAACAGGGCTTTTCTGAATGGGTTCCC ACTATTAACAGGAGCTGTGATAATTTATACATT	R	ACAAAAAAAGAACAAAATCAGTGTGATATATTAAAAA CAGAATGGTTTTCTAATGCAAAAGCACAAGGCATCA GACTTTATGCTATTTCTAACCTTTGTGTTTATTTTTA TTTAACAGCATA	

Table 4C cont'd

CLLD8	CLLD8 X8 G129T		ATGAGCCAAACTATTCTAAATGCTATTACATCTTTTATTACA TCATTTACACATTTATCAAGACAGTCTCTTGACTTGACTTG CTGCTTTTTCATTCTTTCTCCATCCATTGCCT	K	CCTTTTAGAACAAAATGTGCATGTCTTCAACTGACA GCAAGGAATGCCAAAACTTCCCCCTTGTCAAGTGA CAAAATAACCACTGGATATAAATATAAAAGACTACA GAGACA
CLLD8	CLLD8 X10 G321A		AAAGAGGAAATTAGAAGTTGCATGTTCAGATTGTGAAGTT GAAGTTCTCCCATTAGGATTGGAAACACATCCTAGAACTG CTAAAACTGAGAAATGTCCACCAAAGTTCAGTAATAATCCC AAGGAGCTTACT	R	TGTAAGTAACAGCTGAGGAACCCAGAGTAAATCTAA ATTATTATCAATCAATTGGTTCTTTTTCATTCCTTCC CCTCTTTCTTTTCTCCTCATTTGTATTTATCATTTTG CTTCAAA
CLLD8	CLLD8 X1 A384G		AACGCCGCGGAGCCCTCGGCCGCCCGAGCAGGGGCTGG ACCCCAGCCCTTGCAGCCTCCCTTCTCCTGGCACCCAAGT GCAGTCCTGGCTGCAGAAGGGGCCGCGGGCGCACTGAG TTTCCAACCTCC	R	TTTCAGCCTGTCTGTCTCAGGGTGCAGCCTTAATGA GAGGTGATTCCTAAGCTGCTGGGAACCTGAGGTTG TCAAAGGGGCGGCAGGAAATGGACAGCAGTATAAA ACCCAGAAGCAGAAC

Table 4C cont'd

CLLD8	CLLD8 X11 A180G		GTAATAATGGATATTATCTGTACTTGAGTAAAGAGAATGAA GAGAATTTTTAGTGATACAGAATAACTTTTTTTTCCTTTTTA GGGAAACGAAATATGATAATATTTCAAGAATTCA	R	TATCATTCAGTTATTAGAGATCCTGAATCCAAGACA GCCATTTTTCAACACAATGGGAAAAAAATGGTAAAA AATGCAAAATGTAGTTGGGACCCTTCTTTTCTTTTTT AA	
ANGE1	ANGE1X2rs2031532	ANGE01	TCTCACCAGGGATATTACTTATAGGTGTCTTTCAGGTTGCA GAAAAGATGGAAAAAAGGACATGTGCACTCTGCCCCAAAG ATGTCGAATATAATGTCCT	R	TACTTTGCACAATCAGAGAATATAGCTGCTCATGAG AATTGTTTGGTAAGTTACTTGAAAACATACTTCAAAG TACATGAGTACTTTTAGTGTAGGACAC	
ANGE1	ANGE1X3rs2247119	ANGE02	ATGGTCTGCTCATCCACCCCCAAAGTTGCCACTGTTTTAC CCCCAGTCCATTTCCCACTCCTGGTTTGATTTTCCACTTTT GGTATGATTTTCTGACATG	Y	AGCTTTCAATATTACTTTGTGCATACTCTGGATTTTT TTTTCCAATCTGCAGCTGTATTCTTCAGGACTTGTG GAATGTGAGGATCAGGATCCACTTAAT	

Table 4C cont'd

ANGE1	ANGE1X4 4 base deletion from position 82-85	ANGE08	GATAAAATGCAGGGCTTCTGGAACTTAAATAACATTTAATG ATATCTTTGAATTTTAACAAATAACAACACAAACAGGTACT	(ACTC)	AGTAAAATCTATTCTTCTGTAGAAATGCAAATTTTGT CATAAAAGAGGAGCCACCGTGGGATGTGATTTAAA AAACTGTAACAAGAATTACCACTTTTTCTGTGCCAA GAAGGACGACGCAGTTCCACAGTCTGATGGAGTTC GAGGAATTTATAAGTATTTAATAAAACATTTTTAAAA CCACATTTGGGGGATTGGGATAAGG	
ANGE1	ANGE1rs942870	ANGE11	AAGAACTTATCCATGTAACCTGAAACCACCTGTTCCCCAAA AGGTATTGAAATTTAAAAAGTTACAGTTTTTATATGTTTAAAA AAGCCTCTTAATTCATA	Y	AGTTATTGTAAGCAGAGAAATTTTCATTTTTACTTTT TGTAACATTTTATTCATTGTTTCAGCTGGCCAAAAAA AATGAGGTATGATGAAATTATAATTA	
ANGE1	ANGE1X3C148T		CTGACATGTAGCTTTCAATATTACTTTGTGCATACTCTGGA TTTTTTTTTCCAATCTGCAGCTGTATTCTTCAGGACTTGTG GAATGTGAGGATCAGGAT	Y	CACTTAATCCTGATAGAAGTTTTGATGTGGAATCAG TAAAGAAAGAAATCCAGAGAGGAAGGAAGTTGGTA AGTGTAAATGATGTTATTTTCTTATACTGG	P46S

Table 4C cont'd

ANGE1	ANGE1rs2147985		AACTGTATTGGAAACCTCAATTCAACTTAACATTTAATTTTT TTTTTTTTTTTTTTGAGACGGAGTTTTGCTCTTGTTGCCCA GGCTAGAGTGCAGTGAC	R	CGGTCTCAGCTCACTGCAACCTCCGCCTCCTGGGT TCAAGCGATTCTCCTGCCTCAGCCTCCCGAGTAGC TAGGATTACAGGCACGGGCCACCATGCTCG
ANGE1	ANGE1X4C46G		CAAATATAAGTACTGTACCCTAATGTTTGTAACGGGATGGA ATCTTGCTGATGATGCCCAGGATAAAATGCAGGGCTTCTG GAACTTAAATAACATTTAATGATAT	S	ATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGA TGTCGAATATAATGTCCTGTACTTTGCACAATCAGA GAATATAGCTGCTCATGAGAATTGTTTGCTGTATTC TTCAGGACTTGTGGAATGTGAGGATCAGGAT
ANGE1	ANGE1X4C76T		TACCCTAATGTTTGTAACGGGATGGAATCTTGCTGATGAT GCCCAGGATAAAATGCAGGGCTTCTGGAACTTAAATAACA TTTAATGATATCTTTGAATTTTTAACAAATAACAACAAA	Y	ATGGAAAAAAGGACATGTGCACTCTGCCCCAAAGA TGTCGAATATAATGTCCTGTACTTTGCACAATCAGA GAATATAGCTGCTCATGAGAATTGTTTGCTGTATTC TTCAGGACTTGTGGAATGTGAGGATCAGGAT

Table 4C cont'd

ANGE1	ANGE1X4C81T		GATAAAATGCAGGGCTTCTGGAACTTAAATAACATTTAATG ATATCTTTGAATTTTAACAAATAACAACAAACAGGTACT	Y	ACTCAGTAAAATCTATTCTTCTGTAGAAATGCAAATT TTGTCATAAAAGAGGAGCCACCGTGGGATGTGATT TAAAAAACTGTAACAAGAATTACCACTTTTTCTGTGC CAAGAAGGACGACGCAGTTCCACAGTCTGATGGAG TTCGAGGAATTTATAAGTATTTAATAAAACATTTTTA AAACCACATTTGGGGGATTGGGATAAGG
ANGE1	ANGE1rs2274276		ATTGAGTGCATTCCCATATCTTTTCACCAATTATATTTGTTT TCCTATGACCCAATTTGTTCATTTTTCTATTCAATGAACCCT CTCCCCAGAGAGTTCC	S	CATGTGCCAATTTTTCTACTCAATTATTTACCTGTTT TGCATTAAACTTATAATATCTTTTTTAAAAATTAACCC TTTATCATAAGTGCTGCAAACACTT
ANGE1	ANGE1X6rs2274277		CCTTTATCATAAGTGCTGCAAACACTTAGTTGAAGTTTGCC ATATCTTTTGACTTTGTAAAAACTTTTGGCATATGAGTTGTA TATTTCATGTAGTCAAA	S	AGTAATCTTTTCCTTTATGGATTCCAATTTTTAAATG GTTTATATTTTTAGCTAAATTTTCAGGAGTGAAAAGA AAAAGAGGAAGGAAGAAACCCCTCTC

Table 4C cont'd

ANGE1	ANGE1X9 2 base deletion from position 223		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGT	(TT)	TTGAGAAATATTTATCACGATATTGAAACAATATACT GTACAGGTGATAAAAATATTTTAGAAGAATGTTCATT GTTTTCTTAAATGAGAAAAGCCAATTACAAAAACAGT ATGACCCCGCCCACCTGCCCACACACACAGGAAAA AAATATCGAGGTACATGTGCACAGACAAAAGCTGCA CCTGGTGGAGACAGTAGTTGGTTGTAGGTAGTTGG AATATAGTGATTTTTGTCTGTTCTTTTACTGCTATAT TTTCCAGATTTTCTATATACACACAAATACTTTTATA ATGAGAAAAACTCATTAAAAAAGTAGAGACAACAAA AAATTGATTCAAAAATTGGAGCATATTTTGGCCTGT GTGTGGCCCAGGCAGGAGCTGGTAAAGCTTC	
ANGE1	ANGE1X9 4 base deletion starting from position 234		GTGCACTTTTTGACTGTAGATTGTTCGAAGACACATTTGTA AATTTTCAAGCAGGTATATGAGTTATATAACATCTGAGCAG CATAGTTTTGAGAAATAT	(TTAT)	CACGATATTGAAACAATATACTGTACAGGTGATAAA AATATTTTAGAAGAATGTTCATTGTTTTCTTAAATGA GAAAAGCCAATTACAAAAACAG	
ANGE1	ANGE1X9C241T		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCA	Y	GATATTGAAACAATATACTGTACAGGTGATAAAAATA TTTTAGAAGAATGTTCATTGTTTTCTTAAATGAGAAA AGCCAATTACAAAAACAGTATGACCCCGCCCACCTG CCCACACACACAGGAAAAAAATATCGAGGTACATGT GCACAGACAAAAGCTGCACCTGGTGGAGACAGTAG TTGGTTGTAGGTAGTTGGAATATAGTGATTTTTGTC TGTTCTTTTACTGCTATATTTTCCAGATTTTCTATAT ACACACAAATACTTTTATAATGAGAAAAACTCATTAA AAAAGTAGAGACAACAAAAAATTGATTCAAAAATTG GAGCATATTTTGGCCTGTGTGTGGCCCAGGCAGGA GCTGGTAAAGCTTC	

Table 4C cont'd

ANGE1	ANGE1G261A		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACT	R	TACAGGTGATAAAAATATTTTAGAAGAATGTTCATTG TTTTCTTAAATGAGAAAAGCCAATTACAAAAACAGTA TGACCCCGCCCACCTGCCCACACACACAGGAAAAA AATATCGAGGTACATGTGCACAGACAAAAGCTGCA CCTGGTGGAGACAGTAGTTGGTTGTAGGTAGTTGG AATATAGTGATTTTTGTCTGTTCTTTTACTGCTATAT TTTCCAGATTTTCTATATACACACAAATACTTTTATA ATGAGAAAAAACTCATTAAAAAAGTAGAGACAACAAA AAATTGATTCAAAAATTGGAGCATATTTTGGCCTGT GTGTGGCCCAGGCAGGAGCTGGTAAAGCTTC	
ANGE1	ANGE1X9C341T		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACTGTACAGGTGATAAAAATATTTTAGAA GAATGTTCATTGTTTTCTTAAATGAGAAAAGCCAATTACAA AAACAGTATGACC	Y	CGCCCACCTGCCCACACACAGGAAAAAATATC GAGGTACATGTGCACAGACAAAAGCTGCACCTGGT GGAGACAGTAGTTGGTTGTAGGTAGTTGGAATATA GTGATTTTTGTCTGTTCTTTTACTGCTATATTTTCCA GATTTTCTATATACACACAAATACTTTTATAATGAGA AAAACTCATTAAAAAAGTAGAGACAACAAAAAATTGA TTCAAAAATTGGAGCATATTTTGGCCTGTGTGTGGC CCAGGCAGGAGCTGGTAAAGCTTC	
ANGE1	ANGE1X9C344T		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACTGTACAGGTGATAAAAATATTTTAGAA GAATGTTCATTGTTTTCTTAAATGAGAAAAGCCAATTACAA AAACAGTATGACCCCG	Y	CCACCTGCCCACACACAGGAAAAAAATATCGAG GTACATGTGCACAGACAAAAGCTGCACCTGGTGGA GACAGTAGTTGGTTGTAGGTAGTTGGAATATAGTGA TTTTTGTCTGTTCTTTTACTGCTATATTTTCCAGATT TTCTATATACACACAAATACTTTTATAATGAGAAAAA CTCATTAAAAAAGTAGAGACAACAAAAAATTGATTCA AAAATTGGAGCATATTTTGGCCTGTGTGTGGCCCA GGCAGGAGCTGGTAAAGCTTC	

Table 4C cont'd

ANGE1	ANGE1X9T350C		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACTGTACAGGTGATAAAAATATTTTAGAA GAATGTTCATTGTTTTCTTAAATGAGAAAAGCCAATTACAA AAACAGTATGACCCCGCCCACC	Y	GCCCACACACACAGGAAAAAAATATCGAGGTACAT GTGCACAGACAAAAGCTGCACCTGGTGGAGACAGT AGTTGGTTGTAGGTAGTTGGAATATAGTGATTTTTG TCTGTTCTTTTACTGCTATATTTTCCAGATTTTCTAT ATACACACAAATACTTTTATAATGAGAAAAACTCATT AAAAAAGTAGAGACAACAAAAAATTGATTCAAAAATT GGAGCATATTTTGGCCTGTGTGTGGCCCAGGCAGG AGCTGGTAAAGCTTC	
ANGE1	ANGE1X9G351C		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACTGTACAGGTGATAAAAATATTTTAGAA GAATGTTCATTGTTTTCTTAAATGAGAAAAGCCAATTACAA AAACAGTATGACCCCGCCCACCT	S	CCCACACACACAGGAAAAAAATATCGAGGTACATGT GCACAGACAAAAGCTGCACCTGGTGGAGACAGTAG TTGGTTGTAGGTAGTTGGAATATAGTGATTTTTGTC TGTTCTTTTACTGCTATATTTTCCAGATTTTCTATAT ACACACAAATACTTTTATAATGAGAAAAACTCATTAA AAAAGTAGAGACAACAAAAAATTGATTCAAAAATTG GAGCATATTTTGGCCTGTGTGTGGCCCAGGCAGGA GCTGGTAAAGCTTC	
ANGE1	ANGE1X9C376T		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACTGTACAGGTGATAAAAATATTTTAGAA GAATGTTCATTGTTTTCTTAAATGAGAAAAGCCAATTACAA AAACAGTATGACCCCGCCCACCTGCCCACACACACAGGAA AAAAATAT	Y	GAGGTACATGTGCACAGACAAAAGCTGCACCTGGT GGAGACAGTAGTTGGTTGTAGGTAGTTGGAATATA GTGATTTTTGTCTGTTCTTTTACTGCTATATTTTCCA GATTTTCTATATACACACAAATACTTTTATAATGAGA AAAACTCATTAAAAAAGTAGAGACAACAAAAAATTGA TTCAAAAATTGGAGCATATTTTGGCCTGTGTGTGGC CCAGGCAGGAGCTGGTAAAGCTTC	

Table 4C cont'd

ANGE1	ANGE1X9A492G		GTTCCATGGCACATGACTGCTCTCTTTCCTTTCCCCTGTTT TGGATTACATATATAAATGGAGGAGTTTCTGCCTATACAAA CTGTTTAATATTGAAAATGTTTCTCTCCCTCCAGACTATGA AGAAATCGGGAGTGCACTTTTTGACTGTAGATTGTTCGAA GACACATTTGTAAATTTTCAAGCAGGTATATGAGTTATATA ACATCTGAGCAGCATAGTTTTGAGAAATATTTATCACGATA TTGAAACAATATACTGTACAGGTGATAAAAATATTTTAGAA GAATGTTCATTGTTTTCTTAAATGAGAAAAGCCAATTACAA AAACAGTATGACCCCGCCCACCTGCCCACACACACAGGAA AAAAATATCGAGGTACATGTGCACAGACAAAAGCTGCACC TGGTGGAGACAGTAGTTGGTTGTAGGTAGTTGGAATATAG TGATTTTTGTCTGTTCTTTTACTGCTATATTTTCCAGATTTT CT	R	TATACACACAAATACTTTTATAATGAGAAAAACTCAT TAAAAAAGTAGAGACAACAAAAAATTGATTCAAAAAT TGGAGCATATTTTGGCCTGTGTGTGGCCCAGGCAG GAGCTGGTAAAGCTTC	
ANGE1	ANGE1X10G247A		GAGGCACGAGGATTGTGTATCTGTACCTGCAAGTGAAAGG GGCTAGAAATGGTACATTATTTCTAATAAAACTACTGAATA AGCTGAAATAATTTTATTTCTTCTTTTCATAGCAATAGAGAA AAAAATTCATGCATCTCAACAAAGGTGGCAGCAGTTGAAG GAAGAGATTGAGCTACTTCAGGACTTAAAACAAACCTTGT GCTCTTTTCAAGAAAATAGAGATCTTATGTCAAGTTCTACA TCAATATCATCCCTGTCTTATTAGGGATTACC	R	TTTCCTAAGCCAAGAGTCATGTCAAATTGCAATCAG GCTCAAAACCAGAGACCAGGCTGTGAAATCCACAC ATCTTTAGAACTAGTCGTCTCCTCTTGGCCTCAGCA GCTCTTCCCTGTTCTTACTGGTTGACATTTTGATCA CTCTTTGCACACTCTTGTGTTTTTTGCTCACTGTCA CATTCCCAGCACCTAGTATGCTCAGTAAATGTTTGT GGAATAAGTGCATAAAATGTTCTTAACCTTTGATTCT ACTTACAGCCCATGATAGCCTCTTAGATATAATAAAT TTGGATTATACTACTTTACTTGTACCAAATTTGCCTG TTTTCGTGTCACAAAGTCTGCTTTTGAAAAGTCTCTT TTCAGCCACAGTTATCACGTGGA	
CLLD7	CLLD7 PROM 1 A351G	CLD01	AGTGGGCAGGGAGCCAAGTTTCTCGGTCGCTTTTCCGTC CTAGGTCTCTGGGGTGGTAGGCCGACCCTCCCCACAGCC AAGCCATCTCGGGGAGCAGAGC	R	GGAGCCCGTGCCTCGCGCGTTCCTGGTTCCTCAGA CACAAAAGCCTCTAAGTCCCGGCAGCAGCCACCGG ATTTCATGGGGACACTCCAGTGGCAGGGCC	

Table 4C cont'd

CLLD7	CLLD7 X3 C247T	CLD703	TATTTATAGGAATTGCTTGAAGCCAGAGTCATGGTGGATG TCGGAAAGTGGCCCATCTTCACTCTACTCTCCCCTCAAGA GATCGCGTCTATTCGGAAGG	Y	GTGTGTCTTCGGCACCTCAGCCAGTGAAGCACTGT ACGTTACTGACAATGATGAGGTAAGAGTCTCTTGAA ACCTAGTTTCGTTTTAGGACTTATTTGGC	V24A
CLLD7	CLLD7 RS2274283	CLD706	CATTGCCTGTGGTCAGACTTCATCCATGGCTGTTCTGGAC AATGGCGAGGTGAGGTGTCTCCACTCCCATTTCCCTTTCT ACCTTCTTTTTCAATTACAC	R	TCAGTTTCTTCACAAGGTGAATGTATCAGATGGAAG AAGGAAGAGTGCTTTGTTTTGGTAGCTCCATTGAAA GTTAACTGATTACTGACTGAGGAGCTGG	
CLLD7	CLLD7 RS1536195	CLD712	ATATATCCCCTCATATTCTTAGTCCTGAAATGTAAAAAGCT TCAGGTGTATTGGCTTTAATTTGGTGCTTAAAAAAGATTTG AAGTAAGTATCTTTAAAA	R	TAGTATTGTGTAGTTATTATGGTTAATAGTTTTGGAC CTAGTTTATGACCATAGGCTTTTTTTGTTCTAATGTTA CTGAAGGACTTTTTTTTTTTTTAATTT	

Table 4C cont'd

CLLD7	CLLD7 RS2296502	CLD713	TATCAAGAGAGGAATTACTGTGGAGAATGCCTTTTCGCTA TTCTCTGCTGCAGTCAGATATGATGCAGAGGTAACTTAAA CAACAAACAGAAACCAGACC	W		CCTTTAACTCCCTTTGTGCTCGTCTCCCCCGCTTCT TGCGTGAGGCATGGAAAACGATGAGTCACTCCACT TCTGTTTAGGGAATCAGTGAACCCATTGA
CLLD7	CLLD7 X1A295T		GCTGACCTCGCAGGTAGCGTGTGGGCGCGGGGTCGAGC TCGCGGAGGCCTCTTCCCCCTCGGCCCTGCCCCTGCTTC CCTTCCCCCGCAGGCCGGGCCGGG	W		GTGCCCCGTTACTCCTGTACCTCCCGCCTCCCTCG CTCGGGCTCCCGGGCAGTCCCTGCGGGCGCTGCG TCCGGGGCGAGGGATGGGGTCCCCGGCCCGG
CLLD7	CLLD7 X5 T206C		GCTGATTTTTTGTGTGCTTTGTGTGCACAGATGGAGTGGT TTATGCCTGGGGCCACAATGGATATAGCCAGCTTGGGAAT GGGACGACCAACCAAGGCAT	Y		GCTCCCGTCCAGGTCTGTACCAATCTCTTGATCAAG CAAGTGGTGGAAGTAGCTTGTGGCTCACATCATTC AATGGCTCTGGCAGCTGATGGAGAGGTAA

Table 4C cont'd

CLLD7	CLLD7 X6 RS2274284	TTAAGAGGGTAGTTGGCATTGCCTGTGGTCAGACTTCATC CATGGCTGTTCTGGACAATGGCGAGGTGAGGTGTCTCCA CTCCCATTTCCCTTTCTACCT	Y	CTTTTTCAATTACACGTCAGTTTCTTCACAAGGTGAA TGTATCAGATGGAAGAAGGAAGAGTGCTTTGTTTTG GTAGCTCCATTGAAAGTTAACTGATTA	
CLLD7	CLLD7 RS 2274281	TCTATTTCGCCTGTTAAACTGTGACCAAAAACTAGTACCTT TCAGAGTGTTCTGACATACAGTAGGTACTTAATAATTGTTA GTGAGGCTCAACTTCCTC	R	TGTATTAAACAGGAAAGAGTGACTTGCCCCAGACTA TCTAACTAGTAAGTCATGGAGTAGAAACTGATGCCA ATTCTGTCATCCCCTTCTCCAAAATAGC	
CLLD7	CLLD7 X7 RS2274278	TGTCTCTTCCTTCTTACCAGCAGTTTAAAAATCTCACTCTC TCCCTTCTGTCCTCTCTAAGGTATATGGCTGGGGTTACAA TGGCAACGGTCAGCTGGGC	Y	TGGGAAACAATGGCAACCAGCTGACCCCTGTGAGA GTGGCAGCTTTGCACAGCGTGTGTGTGAACCAGGT ACGTGTGGTGCACTCTCAGTTAGTGGCTTCC	

Table 4C cont'd

CLLD7	CLLD7 X9 C219A	TCAGGGTGGTAGAGATTGCAGCCTGTCACTCTGCCCACAC GTCTGCAGCCAAGACGCAGGGTGGGCACGTGTACATGTG GGGCCAGTGCCGGGGGTCAGTC	M	GTGATCCTCCCGCACCTCACCCACTTCTCCTGCAC CGACGACGTGTTTGCCTGCTTTGCCACTCCCGCCG TCTCGTGGCGCCTCCTGTCTGTGGGTAAGA	
CLLD7	CLLD7 X9 C258T	CGTCTGCAGCCAAGACGCAGGGTGGGCACGTGTACATGT GGGGCCAGTGCCGGGGTCAGTCCGTGATCCTCCCGCACC TCACCCACTTCTCCTGCACCGA	Y	GACGTGTTTGCCTGCTTTGCCACTCCCGCCGTCTC GTGGCGCCTCCTGTCTGTGGGTAAGAAAGTGCAGG GCCACCTCCACCCAGGAAGAATGGTACTAC	
CLLD7	CLLD7 X9 C285G	ACGTGTACATGTGGGGCCAGTGCCGGGGGTCAGTCCGTGA TCCTCCCGCACCTCACCCACTTCTCCTGCACCGACGACGT GTTTGCCTGCTTTGCCACTCC	S	GCCGTCTCGTGGCGCCTCCTGTCTGTGGGTAAGAA AGTGCAGGGCCACCTCCACCCAGGAAGAATGGTAC TACCAACTGACCAGTTTTCCTGTGTCTTTG	

Table 4C cont'd

CLLD7	CLLD7 X13A220G		AAGTTACACAGACTGCAGCATTTTGGCAAATGGATGGCCC TCTGCTAAAGGAATTCATTGCTAAAGCCAGTAAATGTGGA GCCTTTAAGAACTGAAGCGC	R	AGGCTGCTGGGTTCTGTGTGAGTGCTCTGGGGCAC TGTTGAGGATGTGTCCAGTTTGTGCTCTACGGGTG ATGTGATTCTGCAGGTAAAAGACCATCAGG
CLLD7	CLLD7 X13 C499G		TAAACAACCCTTGTTTCCAGATAAGTGTATTTTAAATGTGA CCTTTCGTAAATTTGGGCTGGAACATGTAAAAGGGTGAAA GTTAGTCGTTTTTTGGTCTT	S	TTTTCATTTTTGATTAGAGGAACTTCTGAACTTGGAA AGGGGAAGTTGGCAGCAACTCTCCTGGGCCACGTA TCAACAATCTTCTGACAGCAGGAGCAGT
CLLD7	CLLD7 X13 C568T		AAAAGGGTGAAAGTTAGTCGTTTTTGGTCTTCTTTTCATTT TTGATTAGAGGAACTTCTGAACTTGGAAAGGGGAAGTTGG CAGCAACTCTCCTGGGCCA	Y	GTATCAACAATCTTCTGACAGCAGGAGCAGTGATAG TTGGGGAATTGTGAGATGAATGGAGAGGCCCCATC GTGAATTAAAGATGCTGACCTGGGGATTG

Table 4C cont'd

CLLD7	CLLD7 X13.2 RS1062979		CATTAAGGTAGAACTTGAGAACTCAAGTTTAAATTGTCCCC CACCACCTTCTTCTATAAATGCAAACTTAAGAGGAAAATAA TGACATGTATAGTATACT	S		TTGCCTTCCTAAATTATGACTGCTGAATCATCATATC TACTATATATGACTGGAAGAAGTGGTTCTTCAAGTC AACCCTCTTACAAGACTTAGT:GGAAT	
CLLD7	CLLD7 X13.2 RS1046027		TCTATAAATGCAAACTTAAGAGGAAAATAATGACATGTATA GTATACTCTTGCCTTCCTAAATTATGACTGCTGAATCATCA TATCTACTATATATGACT	R		GAAGAAGTGGTTCTTCAAGTCAACCCTCTTACAAGA CTTAGT:GGAATTTGCTTTATCTACTTTAGGCCAAAT CCATCACACATTGGCTTATGTGAAACT	
CLLD7	CLLD7 X13.2 RS1046028		ATGTATAGTATACTCTTGCCTTCCTAAATTATGACTGCTGA ATCATCATATCTACTATATATGACTGGAAGAAGTGGTTCTT CAAGTCAACCCTCTTACA	R		GACTTAGT:GGAATTTGCTTTATCTACTTTAGGCCAA ATCCATCACACATTGGCTTATGTGAAACTTTATCATC TTTCACTTTTGGTTTTCCTCTGTTTT	

Table 4C cont'd

CLLD7	15 BASE DELETION AT POS 684		CTGGAAGAAGTGGTTCTTCAAGTCAACCCTCTTACAAGAC TTAGT:GGAATTTGCTTTATCTACTTTAGGCCAAATCCATCA CACATTGGCTTATGTGAAA	(CTTTATCA TCTTTCA)	CTTTATCATCTTTCACTTTTGGTTTTCCTCTGTTTTTT AAACATCTTAGGTATAACAGCACAATTTCACCTTGA AAAAGCACCAAAATTATGGTGTTCCTG	
CLLD7	CLLD7 X13.3 RS1046034		GAACCTGGAGCCTGAATACATTTTCAGAGCCAAATTACAA GTGGGTGAAGACATGCTACAACTACTATTTTTAGCAATGTT TTTAAATTTGTGTCTATTG	K	GGTGGGAAGGGGAGTGAGGCCCTAAAGATAGGAA TTCACTGATAGCTGAAATAGATACAAGCCTAGGAGC CCCAGCCCCCCTTTTCTTGACCATATCACAA	
CLLD7	CLLD7 RS942870		TAATTATAATTTCATCATACCTCATTTTTTTTTGGCCAGCTGA AACAATGAATAAAATGTTACAAAAAGTAAAAATGAAAATTTC TCTGCTTACAATAACT	R	TATGAATTAAGAGGCTTTTTTAAACATATAAAACTGT AACTTTTTAAATTTCAATACCTTTTGGGGAACAGGT GGTTTCAGGTTACATGGATAAGTTCTT	

Table 4C cont'd

CLLD7	CLLD7 X13.3 T304C		TTCAACTGTGAGTTTCATCATGTGTGTCCGTTGAGCTTGCT TTTAAGAGCAATGTTTTGCTTTGCTCTCTGGTCCATGAACT CATTTCCATTTGAGTGAG	Y	TCCCTTAGTGAATTTTGTCTCCTGCTTGGAAAGTCT CTCTTCTGAACCTGGAGCCTGAATACATTTTCAGAG CCAAATTACAAGTGGGTGAAGACATGCT	
CLLD7	CLLD7 X13.4 C1201		GTTAGAATTCGTTCTACAACATGATAGAACTTTTCTTACTA GCTTCAGAAATGCACATTGATTTGTGCTATGATGGGTGGT GTTTGTAACAATCACTGTT	Y	TATAGGCTTATGATCTGAGCAAAATGTGAACTTCAG TATGTTTACTATTGCTCTTACTTGAAAACTTTTTTTTC AAAAAAAGCACAAATTAAAGTAGTAAA	
CLLD7	1 BASE DELETION AT POS 153		TCTTACTAGCTTCAGAAATGCACATTGATTTGTGCTATGAT GGGTGGTGTTTGTAACAATCACTGTTCTATAGGCTTATGAT CTGAGCAAAATGTGAACT	(T)	CAGTATGTTTACTATTGCTCTTACTTGAAAACTTTTT TTCAAAAAAAGCACAAATTAAAGTAGTAAATTCATAT CCATAGATAGTTCATTCATTCAACAA	

Table 4C cont'd

CLLD7	6 BASE INSERTION STARTING AT POS 371		AATATAAGTGAAGGACCACTTCTCATATTAGATTACTAAGT CATTTGTATGAATATGTGTGGCAGTGAAGAGAACAGGTCT TTCAAAAAGCATTTGATTA	(TCTTTA)	TTTTTTTAAATACACTCTCTTATTTTTCTACTTGTTTT TTTGTTAATCATAGCAGGATATGACAACTCTTATTTG AATTGATTTTTTTCATCTAATGTAAT

Table 5

Protein	Peptide Fragment for Ab Production
ANGE1	AQASPPRPERVLGAC
ANGE1	CEDQDPLNPDRSFDV
ANGE1	KRKRGRKKPLSGNHC
ANGE1	AQASPPRPERVLGAC
ANGE1	CEDQDPLNPDRSFDV
ANGE1	KRKRGRKKPLSGNHC
CLLD8	DITKYREETPPRSRC
CLLD8	QKEQENKSNAFPSTSC
CLLD8	CPPKFSNNPKELTME
CLLD8	CNEIDSRKLPQFKYR
CLLD7	GDNQSTLVPKKLEGLC
CLLD7	GSGSTANQPTPRKVT

Table 6

Putative functional promoter SNPs tested by EMSAs.

SNP name	Oligo name	oligo sequence with binding areas	SNP type	binding sequence (+for -rev)	T F	Notes
	NR1WT-F	CTCTGCCTCCCGGGTTCAAGC	c/t	CAGAG -	GR	
	NR1WT-R	GCTTGAACCCGGGAGGCAGAG	a/g	TGRMCC -	LF-A1	
hcv98738	NR1MUT-F	CTCTGCCTCCTGGGTTCAAGC		GAGGC -	T-Ag	
96 (REN34)	NR1MUT-R	GCTTGAACCCAGGAGGCAGAG				
	NR2WT-F	AACGGGGCACTCCCGGCCCGG	a/t	GGGCA +	LF-A1	
	NR2WT-R	CCGGGCCGGGAGTGCCCCGTT	t/a	SCGSSSC +-	GCF	
	NR2MUT-F	AACGGGGCACACCCGGCCCGG		GGGGC+	T-Ag	
	NR2MUT-R	CCGGGCCGGGTGTGCCCCGTT				
		AACGGGGCACTCCCGGCCCGG		GGGRNNYYCC	NFKB	
		CCGGGCCGGGAGTGCCCCGTT				function al SNP
		AACGGGGCACACCCGGCCCGG				
clld7 x1a295t		CCGGGCCGGGTGTGCCCCGTT				
	NR3WT-F	CACGGGCTCCTGCTCTGCTCC	c/t	CAGAG -	GR	
	NR3WT-R	GGAGCAGAGCAGGAGCCCGTG	a/g			
clld7	NR3MUT-F	CACGGGCTCCCGCTCTGCTCC				
prom1 a351g	NR3MUT-R	GGAGCAGAGCGGGAGCCCGTG				
	NR4WT-F	TCCAACCTCCATTTCAGCCTG	a/g	TCCA +	NF1	
	NR4WT-R	CAGGCTGAAATGGAGGTTGGA	c/t			function al SNP
	NR4MUT-F	TCCAACCTCCGTTTCAGCCTG				
clld8x1 a384g	NR4MUT-R	CAGGCTGAAACGGAGGTTGGA				

ATOPY

[0001] The present invention relates to isolated nucleic acid sequences of ANGE, CLLD8 and CLLD7 or sequences complementary or substantially homologous thereto or fragments thereof. Also provided are sequences comprising hybrid nucleic acid sequences from two or more of the genes. Also provided are nucleic acid expression vectors, polypeptides, antibodies to the polypeptides, host cells, non-human transgenic animals and pharmaceutical compositions and agents. Also provided is the use of the nucleic acid sequence and/or protein in medicine and research, methods for diagnosing or determining predisposition to disease or severity of disease, methods for preventing or treating disease, and kits for use in the methods and the use of the nucleic acid sequence and protein in treating or preventing IgE mediated diseases and non-atopic asthma, and in screens for identifying new agents for use in the methods.

[0002] Atopic or Immunoglobulin E (IgE) mediated diseases include, but are not limited to, asthma, hayfever, eczema, atopic dermatitis and allergic rhinitis. These disorders are a major cause of disease in children and young adults (Jarvis, D. & Burney, P. *British Medical Journal* 316, 607-10 (1998) [published erratum appears in BMJ 1998 Apr. 4;316(7137):1078]; and Cookson, W. *Nature* 402, B5-11 (1999).

[0003] Atopy and asthma are due to the interaction between strong environmental and genetic factors (Cookson, W. *Nature* 402, B5-11 (1999). Asthma is usually recognised epidemiologically by standard symptom questionnaires or by physician diagnosis (O'Connor, G. T. & Weiss, S. T. *Am J Respir Crit Care Med* 149, S21-8; discussion S29-30 (1994)). Atopy is detected by skin prick tests, or by measurement of specific serum IgE titres against allergens with RAST or ELISA techniques, or by quantifying the total serum IgE. The examination of quantitative traits offers significant advantages for both linkage and association analyses in general (Risch, N. J. & Zhang, H. *Am J Hum Genet* 58, 836-43 (1996)) and in the case of asthma (Cookson, W. & Palmer, L. *Clin Exp Allergy* 28 Suppl 1, 88-9; discussion 108-10 (1998)). A number of quantitative traits underlie asthma and atopy, including the total serum IgE concentration, the Skin Test Index (STI), the RAST index and the Dose-Response Slope (DRS) of bronchial responsiveness to methacholine (Daniels, S. E. et al. *Nature* 383, 247-50 (1996)). The total serum IgE is log-normally distributed, and has a high heritability (Gerrard, J., Rao, D. & Morton, N. *Am J Hum Genet* 30, p46-58 (1978)) and Palmer, L. J. et al. *Am J Respir Crit Care Med* 161, 183643 (2000)). It is influenced by genetic effects, which incompletely overlap DRS and the STI.

[0004] The heritability of physician-diagnosed asthma is 60-70%[7] and that of the (log normal) total serum IgE concentration is 40-50%[8,9]. The heritability of the STI is lower and is approximately 30%9. The examination of quantitative rather than categorical traits offers significant advantages of power for both linkage and association analyses in general[10] and in the case of asthma[11]. The total serum IgE is log-normally distributed with standardised measurement protocols, and the effects of age and sex are well defined [12]. Consequently, we have used the total serum IgE as quantitative trait to map susceptibility genes for atopy and asthma.

[0005] Differing indices of atopy may be elevated in the same family (Cookson, W. O. C. M. & Hopkin, J. M. *Lancet* 1, 86-88 (1988) and Young, R. P., Lynch, J., Sharp, P. A. & et al. *Journal of Medical Genetics* 29, 236-238 (1992)). RAST and skin test responses reach a peak later in childhood than the total serum IgE, and decline at a slower rate thereafter (Cline, M. G. & Burrows, B. B. *Thorax* 44, 425431 (1989)). To account for this heterogeneity of phenotype (pleiotropy), the categorical trait of "atopy" is based on a combination of the STI, RAST index, and the total serum IgE (Daniels, S. E. et al. *Nature* 383, 247-50 (1996) and Cookson, W. O. C. M. & Hopkin, J. M. *Lancet* 1, 86-88 (1988)).

[0006] Atopy is due to the interaction between genetic and environmental factors. The genetic factors are thought to be variants of DNA structure ("polymorphisms") that alter the level of expression or the function of genes to predispose to asthma. Variants of DNA sequence at a particular site ("locus") are known as "alleles". Genome-wide scans for linkage to atopy and asthma-associated phenotypes have been conducted (Daniels, S. E. et al. *Nature* 383, 247-50 (1996)). Strong linkage of the atopy phenotype to chromosome 13q14 was observed, and confirmed in a second panel of families at the time of our initial genome screen. An earlier study had found linkage of the total serum IgE to the esterase D (ESD) protein polymorphism on chromosome 13q14 (Eiberg, H., et al. *Cytogenetics. And Cell Genetics* 40, 622 (1985)).

[0007] Linkage to the region has also been confirmed by a single locus study of Japanese families (Kimura, K. et al. *Hum Mol Genet* 8, 1487-90 (1999)). A two-stage screen in Hutterite families from the US found linkage of asthma to 13q21.3 (Ober, C. et al. The Collaborative Study on the Genetics of Asthma. *Hum Mol Genet* 7, 1393-8 (1998)) in the first stage families but not in the second. Linkage to 13q14 has also been observed to house dust mite allergy in children with asthma (Hizawa, N. et al. Collaborative Study on the Genetics of Asthma (CSGA). *J Allergy Clin Immunol* 102, p43642 (1998)), and to children with atopic dermatitis (Beyer K, W. U et al *J Allergy Clin Immunol* 101, 152 (1998)). These results suggest that chromosome 13 contains an important atopy locus. A locus for atopic dermatitis has recently been mapped to the same region of chromosome 13-13q14. Susceptibility loci for atopic dermatitis on chromosomes 3, 13, 15, 17 and 18 in a Swedish population: Bradley M, Soderhall C, Luthman H, Wahlgren C F, Kockum I, Nordenskjold M Hum Mol Genet 2002 Jun. 15;11(13):1539-48.

[0008] Close localisation of disease causing genes may be accomplished by the detection of associations between particular alleles and the disease phenotype. Over short segments of DNA, distinctive alleles of the individual polymorphisms will show non-random association with alleles of neighbouring polymorphisms. This phenomenon, known as "linkage disequilibrium" typically occurs over 50-500 Kilobases (Kb) of DNA (Jorde, L. B. et al. *Am J Hum Genet* 54, 884-98 (1994); Collins, A., Lonjou, C. & Morton, N. E. *Proc Natl Acad Sci U S A* 96, 15173-7 (1999) and Abecasis, G. R. et al. *Am J Hum Genet* 68, 191-197 (2001)), and associations between polymorphism and disease are in general unlikely to extend beyond 500 Kb. Linkage disequilibrium may be detected by the study of individuals and by the study of families.

[0009] Disease causing alleles will be in linkage disequilibrium with non-functional polymorphisms from the same chromosomal segment. It is therefore possible to detect allelic association with disease from particular chromosomal segments, without identifying the exact polymorphism and gene underlying the disease state.

[0010] The detection of allelic association may therefore give information as to disease susceptibility in a particular individual. Furthermore, allelic association is indicative of a disease-causing gene being present within a limited distance of DNA in either direction from the allele.

[0011] Identification of the disease causing gene will allow the identification of children at risk of atopy before the disease has developed (for example immediately after birth), with the potential for prevention of disease. Knowledge of the gene and its activity will enable predictions to be made regarding the type of disease (i.e. asthma, dermatitis or allergies) and the clinical course of disease (e.g. severe as opposed to mild) or the response to particular treatments. This diagnostic information will be of use to the health care, pharmaceutical and insurance industries.

[0012] According to a first aspect of the invention there is provided an isolated or recombinant nucleic acid sequence comprising a sequence as shown in **FIG. 5**, or a sequence which excludes one or more of the exons as set out in **FIG. 3***a* or *a* sequence complementary or substantially homologous thereto, or a fragment thereof. The sequence of **FIG. 5** comprises the human ANGE, CLLD7 and CLLD8 nucleotide sequences. **FIG. 5***a* (i) shows the Exon sequences of the ANGE gene including the 2 alternative first exons; **FIG. 5***a* (ii) shows the ANGE mRNA sequence and **5***a* (iii) the translated protein sequence. The NY-REN-34 mRNA sequence is shown in **FIG. 5***b* (i) and the protein sequence of NY-REN-34 in **FIG. 5***b* (ii) an alternative NY-REN-34 protein sequence is shown in **FIG. 5***b* (iii).

[0013] For the purposes of the present invention, the ANGE gene is the gene known in the prior art as NY-REN-34, and shown as nucleotides 313649-346509 of BAC bA103J18.03548 **(FIG. 5)**. References to the ANGE gene in the present application include variant sequences showing 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 915, 92%, 93%, 95%, 96%, 97%, 98%, 99% or 100% homology with the ANGE gene of **FIG. 5**, and preferably sharing one or more functional characteristics with the ANGE gene.

[0014] The ANGE nucleic acid sequence can comprise any combination of one or more exons from **FIGS. 3***a*, **5***a* (i) and Table 5 or a sequence substantially homologous thereto, or a fragment thereof. These combinations are for all ANGE sequences including human and mouse.

[0015] All the sequences of the present invention are isolated, or alternatively may be recombinant. By isolated is meant a nucleic acid or polypeptide sequence which has been purified, and is substantially free of other protein and nucleic acid. Such sequences may be obtained by PCR amplification, cloning techniques, or synthesis on a synthesiser. By recombinant is meant nucleic acid sequences which have been recombined by the hand of man.

[0016] The polynucleotide sequences of the invention may be genomic or cDNA, or RNA, preferably mRNA, or PNA or other nucleic acid analogue known to the person skilled in the art. In the present invention, gene products include polynucleotide sequences and protein. References to polypeptide sequences include proteins and peptides.

[0017] The public domain REFSEQ entries for the mRNA sequences of CLLD7, CLLD8 and NY-REN-34 are NM_018191.2, NM_031915.1 and NM_016119.1 respectively. These show minor differences at the nucleotide level to the sequences shown above. However for NY-REN-34 these alterations result in a truncated putative protein compared to our sequence which is shown below.

[0018] In the present application, sequences which are complementary or substantially homologous are those sequences which hybridise under stringent conditions to the defined sequence or its gene products. Thus, for example, a nucleic acid sequence substantially homologous to a reference nucleic acid will be capable of hybridising to a gene product (i.e. mRNA) of the reference nucleic acid, under stringent conditions. A complementary sequence is one which is capable of hybridising to the nucleic acid sequence itself, under stringent conditions. Also provided in the present invention are complements of the substantially homologous sequences. A substantially homologous sequence preferably has at least 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98 or 100% sequence identity with the defined sequence. This definition of substantially homologous applies to both nucleic acid and polypeptide sequences. Thus, polypeptide sequences having conservative amino acid substitutions that do not affect structure or function are also included. For any given DNA sequence, references to a complementary sequence include the corresponding mRNA sequence and any cDNA sequence derived on such an RNA sequence. "% identity" is a measure of the relationship between two nucleic acid or polypeptide sequences, as determined by comparing their sequences. In general, the two sequences to be compared are aligned to give a maximum correlation between the sequences. The alignment of the two sequences is examined and the number of positions giving an exact amino acid or nucleotide correspondence is determined, and divided by the total length of the alignment, and the result is multiplied by 100 to give a % identity. The % identity may be determined over the whole length of the sequence to be compared, which is particularly suitable for sequences of the same or similar lengths or for sequences which are highly homologous, or over shorter defined lengths which is more suitable for sequences of unequal lengths and with a lower homology.

[0019] Methods for comparing the identity of two or more sequences are known in the art. For example, programs available in the Wisconsin Sequence Analysis Package version 9.1 (Devereux J et al., *Nucl Acid Res* 12 387-395 (1984), available from Genetics Computer Group, Madison, Wis., USA), such as BESTFIT and GAP may be used.

[0020] BESTFIT uses the "local homology" algorithm of Smith and Waterman (Advances in Applied Mathematics, 2:482489, 1981) and finds the best single region of similarity between two sequences. BESTFIT is more suited to comparing two polynucleotide or two polypeptide sequences which are dissimilar in length, the program assuming that the shorter sequence represents a portion of the longer. In comparison, GAP aligns two sequences finding a "maximum similarity" according to the algorithm of Neddleman and

Wunsch (J. Mol. Biol. 48:443-354, 1970). GAP is more suited to comparing sequences which are approximately the same length and an alignment is expected over the entire length. Preferably, the parameters "Gap Weight" and "Length Weight" used in each program are 50 and 3 for polynucleotide sequences and 12 and 4 for polypeptide sequences, respectively. Preferably, % identities and similarities are determined when the two sequences being compared are optimally aligned.

[0021] Other programs for determining identity and/or similarity between sequences are also known in the art, for instance the BLAST family of programs (Altschul et al, *J. Mol. Biol.,* 215:403-410, (1990) and Altschul et al, *Nuc Acids Res.,* 25:289-3402 (1997), available from the National Center for Biotechnology Information (NCB), Bethesda, Md., USA and accessible through the home page of the NCBI at www.ncbi.nlm.nih.gov) and FASTA (Pearson W. R. and Lipman D. J., *Proc. Nat. Acac. Sci., USA,* 85:2444-2448 (1988), available as part of the Wisconsin Sequence Analysis Package). Preferably, the BLOSUM62 amino acid substitution matrix (Henikoff S. and Henikoff J. G., Proc. Nat. Acad. Sci., USA, 89:10915-10919, (1992)) is used in polypeptide sequence comparisons including where nucleotide sequences are first translated into amino acid sequences before comparison.

[0022] Preferably, the program BESTFIT is used to determine the % identity of a query polynucleotide or a polypeptide sequence with respect to a polynucleotide or a polypeptide sequence of the present invention, the query and the reference sequence being optimally aligned and the parameters of the program set at the default value.

[0023] In relation to the present invention, "stringent conditions" refers to the washing conditions used in a hybridisation protocol. In general, the washing conditions should be a combination of temperature and salt concentration so that the denaturation temperature is approximately 5 to 20° C. below the calculated T_m of the nucleic acid under study. The T_m of a nucleic acid probe of 20 bases or less is calculated under standard conditions (1M NaCl) as [4° C.×(G+C)+2° C.×(A+T)], according to Wallace rules for short oligonucleotides. For longer DNA fragments, the nearest neighbour method, which combines solid thermodynamics and experimental data may be used, according to the principles set out in Breslauer et al., *PNAS* 83: 3746-3750 (1986). The optimum salt and temperature conditions for hybridisation may be readily determined in preliminary experiments in which DNA samples immobilised on filters are hybridised to the probe of interest and then washed under conditions of different stringencies. While the conditions for PCR may differ from the standard conditions, the T_m may be used as a guide for the expected relative stability of the primers. For short primers of approximately 14 nucleotides, low annealing temperatures of around 44° C. to 50° C. are used.

[0024] The temperature may be higher depending upon the base composition of the primer sequence used. Suitably stringent conditions are those under which non-specific hybridisation (e.g. to non-DPP10 encoding sequences) are avoided. Suitable stringent conditions are 0.5×SSC/1% SDS/58° C./30 mins for a 21mer oligonucleotide probe.

[0025] The complementary sequences of the invention (which may also be referred to herein as "antisense") may be useful as probes or primers, or in the regulation of ANGE expression. Preferably, the primer sequences are capable of amplifying all or a portion of an ANGE gene. Preferred primer sequences are disclosed in the Examples and Table 4. Pairs of primers for amplification of all or part of the gene, or alleles, or variants thereof, form another aspect of the invention. Similarly, ANGE probes will be useful in detecting the presence or expression levels of ANGE, or variant forms thereof, in a sample from a subject. The probes may also be useful in analysing the expression pattern of ANGE in a subject.

[0026] In the present application, fragments are any contiguous 10 residue sequence, or greater, such as 20, 30, 40, or 50 residue sequence. Preferably, fragments of nucleic acid or polypeptide sequences share one or more functional characteristics with ANGE or its gene, or are capable of modulating (i.e. inhibiting or enhancing) such a functional characteristic. The novelty of a fragment according to the present embodiment may be easily ascertained by comparing the nucleotide or polypeptide sequence of the fragment with sequences catalogued in databases such as Genebank at the priority date, or by using computer programs such as DNASIS (Hitachi Engineering Inc) or Word Search or FASTA of the Genetic Computer Group (Madison, USA).

[0027] The fragments may be used in a variety of diagnostic, prognostic or therapeutic methods or may be useful as research tools for example in screening. Fragments of the sequences of the first aspect or their complements may be used as primer sequences as described above.

[0028] In a second aspect of the invention there is provided an isolated or recombinant nucleic acid sequence comprising a sequence as shown in **FIG. 5** or a sequence as shown in **FIG. 5** which excludes one or more of the exon sequences as set out in **FIG. 5***d* (i) and Table 5 or a sequence complementary or substantially homologous thereto or a fragment thereof. The CLLD8 mRNA sequence is shown in **FIG. 5***d* (ii) and the CLLD8 protein sequence in **FIG. 5***d* (iii). The nucleotides 294727 to 309803 of **FIG. 5** is the human CLLD8 nucleic acid sequence.

[0029] In a third aspect of the invention there is provided an isolated or recombinant nucleic acid sequence comprising a sequence as shown in **FIG. 5** or a sequence as shown in **FIG. 5** which excludes one or more of the exon sequences as set out in **FIG. 5***c* (i) and Table. The CLLD7 mRNA sequence is shown in **FIG. 5***c* (ii) and the CLLD7 protein sequence in **FIG. 5***c* (iii). The nucleotides 349634 to 410846 of **FIG. 5** is the human CLLD7 nucleic acid sequence.

[0030] In a fourth aspect of the invention there is provided an isolated or recombinant nucleic acid sequence as claimed in claim **1** comprising a sequence as shown in **FIG. 5** (nucleotides 313649-346509) (ANGE) contiguous with an isolated or recombinant nucleic acid sequence as claimed in claim **2** comprising a sequence as shown in **FIG. 5** (nucleotides 294727-309803) (CLLD8) or a sequence complementary or substantially homologous thereto or a fragment thereof.

[0031] Alternatively, there is provided an isolated or recombinant polynucleotide sequence comprising the CLLD8 gene and ANGE gene, wherein both genes are under the control of a single regulatory element. Preferably, the regulatory element is a promoter. More preferably, the regulatory element is the CLLD8 promoter.

[0032] Alternatively, there is provided an isolated or recombinant polynucleotide sequence encoding a protein having the domain structure Pre-SET-SET-Post-SET-PHD-PHD. Preferably, the domain structure is CpGBD-Pre-SET-SET-Post-SET-PHD-PHD. SET and PHD domains will be known to persons skilled in the art.

[0033] Preferably, the polynucleotide sequences of the fourth aspect encode a single gene product comprising both CLLD8 and ANGE. This composite gene product is produced as a splice product of the CLLD8 gene, under control of the CLLD8 promoter, and comprises the ANGE gene product. This composite CLLD8-ANGE gene product results from splicing together of the CLLD8 and ANGE genes and is shown to be involved in atopy.

[0034] In a fifth aspect of the invention there is provided an isolated or recombinant nucleic acid sequence as claimed in claim **1** comprising a sequence (nucleotides 313649-346509) as shown in **FIG. 5** (ANGE) contiguous with an isolated or recombinant nucleic acid sequence as claimed in claim **3** comprising a sequence (nucleotides 349634 to 410846) as shown in **FIG. 5** (CLLD7) or a sequence complementary or substantially homologous thereto or a fragment thereof.

[0035] Alternatively, there is provided an isolated or recombinant polynucleotide sequence comprising the ANGE gene and CLLD7 gene, wherein both genes are under the control of a single regulatory element. Preferably, the regulatory element is a promoter. More preferably, the regulatory element is the ANGE promoter.

[0036] Preferably, the polynucleotide sequences of the fifth aspect encode a single gene product comprising both ANGE and CLLD7. This composite gene product is produced as a splice product of the ANGE gene, under control of the ANGE promoter, and comprises the CLLD7 gene product. This composite CLLD7-ANGE gene product results from splicing together of the CLLD7 and ANGE genes and is shown to be involved in atopy.

[0037] In a sixth aspect of the invention there is provided an isolated or recombinant nucleic acid sequence comprising a sequence as claimed in claim **2** comprising a sequence (nucleotides 294727-309803) as shown in **FIG. 5** (CLLD8) contiguous with an isolated or recombinant nucleic acid sequence as claimed in claim **3** comprising a sequence (nucleotides 349634 to 410846) as shown in **FIG. 5** (CLLD7) or a sequence complementary or substantially homologous thereto or a fragment thereof.

[0038] Alternatively, there is provided an isolated or recombinant polynucleotide sequence comprising the CLLD8 gene and CLLD7 gene, wherein both genes are under the control of a single regulatory element. Preferably, the regulatory element is a promoter. More preferably, the regulatory element is the CLLD7 promoter.

[0039] Preferably, the polynucleotide sequences of the sixth aspect encode a single gene product comprising both CLLD8 and CLLD7. This composite gene product is produced as a splice product of the CLLD8 gene, under control of the CLLD8 promoter, and comprises the CLLD7 gene product. This composite CLLD8-CLLD7 gene product results from splicing together of the CLLD8 and CLLD7 genes and is shown to be involved in atopy.

[0040] In a seventh aspect of the invention there is provided an isolated or recombinant nucleic acid sequence comprising a sequence as claimed in claim **1** comprising a sequence (nucleotides 313649-346509) as shown in **FIG. 5** (ANGE) contiguous with an isolated or recombinant nucleic acid sequence as claimed in claim **2** comprising a sequence (nucleotides 294727-309803) as shown in **FIG. 5** (CLLD8) and contiguous with an isolated or recombinant nucleic acid sequence as claimed in claim **3** comprising a sequence (nucleotides 349634 to 410846) as shown in **FIG. 5** (CLLD7) or a sequence complementary or substantially homologous thereto or a fragment thereof.

[0041] Alternatively, there is provided an isolated or recombinant polynucleotide sequence comprising the ANGE gene, the CLLD8 gene and the CLLD7 gene, wherein all the genes are under the control of a single regulatory element. Preferably, the regulatory element is a promoter. More preferably, the regulatory element is the CLLD8 promoter.

[0042] Preferably, the polynucleotide sequences of the seventh aspect encode a single gene product comprising CLLD8, ANGE and CLLD7. This composite gene product is produced as a splice product of the CLLD8 gene, under control of the CLLD8 promoter, and comprises the ANGE and CLLD7 gene products. This composite CLLD8-ANGE-CLLD7 gene product results from splicing together of the CLLD8, ANGE and CLLD7 genes and is shown to be involved in atopy.

[0043] By the terms "ANGE""CLLD7" and "CLLD8" are meant either the complete gene product, or a part or parts thereof. Parts of the gene products are preferably splice variants, and preferably include at least one exon or a transcript produced from at least one exon. Thus, the gene product of the fourth to seventh aspects include at least one exon or part of an exon of CLLD7, CLLD8 and ANGE.

[0044] In an eighth aspect of the invention there is provided an isolated or recombinant nucleic acid sequence comprising at least a part of the sequence of **FIG. 5**, and comprising one or more SNPs at positions, which correspond to the positions of **FIG. 5** listed in Table 1.

[0045] Particular isolated nucleic acid molecules include those:

[0046] as shown in Table 2c;

[0047] comprising a SNP at the position corresponding to position 185752b4_2 of **FIG. 5**;

[0048] comprising a SNP at the position corresponding to position 185752b5_3 of **FIG. 5**;

[0049] comprising a SNP at the position corresponding to position 4321017b38_1 of **FIG. 5**.

[0050] The isolated or recombinant nucleic acid molecules of the eighth aspect of the present invention are different to the "wild type" or "reference" sequence of **FIG. 5**.

[0051] This aspect of the invention also provides antisense sequences. Such sequences are typically single stranded and are capable of hybridising to the above mentioned nucleic acid sequences of the invention, or to the sequence of **FIG. 5**, under stringent conditions. Preferred antisense sequences are those which are capable of hybridising to an allele of a polymorphism of the invention, and most preferably is

capable of distinguishing between alleles of a polymorphism (of Table 1). Stringent conditions are defined below. The antisense sequences may be prepared synthetically or by nick translation, and are preferably isolated or recombinant.

[0052] The antisense sequences include primers and probes, for example, for use in the methods of the present invention. Primer sequences are capable of acting as an initiation site for template directed nucleic acid synthesis, under appropriate conditions, which will be known to skilled persons. Probes are useful in the detection, identification and isolation of particular nucleic acid sequences. Probes and primers are preferably 15 to 30 nucleotides in length.

[0053] For amplification purposes, pairs and primers are provided. These include a 5' primer, which hybridises to the 5' end of the nucleic acid sequence to be amplified, and a 3' primer, which hybridises to the complementary strand of the 3' end of the nucleic acid to be amplified. Preferred primers are those listed in Table 4.

[0054] Probes and primers may be labelled, for example to enable their detection. Suitable labels include for example, a radiolabel, enzyme label, fluoro-label, and biotin-avidin label for subsequent visualisation in, for example, a southern blot procedure. A labelled probe or primer may be reacted with a sample DNA or RNA, and the areas of the DNA or RNA which carry complimentary sequences will hybridise to the probe, and become labelled themselves. The labelled areas may be visualised, for example by autoradiography.

[0055] Preferably, the probes and/or primers hybridise under, "stringent conditions", which refers to the washing conditions used in a hybridisation protocol. The hybridisation conditions for probes are preferably sufficiently stringent to allow distinction between different alleles of a polymorphism upon binding of the probes. In general, the washing conditions should be combination of temperature and salt concentration so that the denaturation temperature is approximately 5 to 20° C. below the calculated T_m of the nucleic acid under study. The T_m of a nucleic acid probe of 20 bases or less is calculated under standard conditions (1M NaCl) as [4° C.×(G+C)+2° C.×(A+T)], according to Wallace rules for short oligonucleotides. For longer DNA fragments, the nearest neighbour method, which combines solid thermodynamics and experimental data may be used, according to the principles set out in Breslauer et al., PNAS 83: 3746-3750 (1986). The optimum salt and temperature conditions for hybridisation may be readily determined in preliminary experiments in which DNA samples immobilised on filters are hybridised to the probe of interest and then washed under conditions of different stringencies. While the conditions for PCR may differ from the standard conditions, the T_m may be used as a guide for the expected relative stability of the primers. For short primers of approximately 14 nucleotides, low annealing temperatures of around 44° C. to 50° C. are used. The temperature may be higher depending upon the base composition of the primer sequence used. Typically, the salt concentration is no more than 1M, and the temperature is at least 25° C. Suitable conditions are 5×SSPE (750 mM NaCl, 50 mM NaPhosphate, 5 mM EDTA pH 7.4) and a temperature of 25-30° C.

[0056] The use of one or more of the SNP markers of Table 1 in the identification of a gene or genetic element which influences IgE mediated disease or non-atopic asthma is also included.

[0057] As is the use of one or more of the SNP markers in medicine or in the identification of an agent for use in the diagnosis, prevention or treatment of an IgE mediated disease or non-atopic asthma.

[0058] In a preferred embodiment the SNP marker is as shown in Table 2c, or 185752%_2, 185752b5_3, 432103b43_1 or 4321017b38_1 or any SNP in linkage disequilibrium with the SNP markers selected in Table 1. The polynucleotides of the first to eight aspects are used in the diagnosis of individuals having an IgE mediated disease or non-atopic asthma, or in the treatment of individuals having such disease. The polynucleotides may also be used in the manufacture of a diagnostic for diagnosing individuals having an IgE mediated disease or non-atopic asthma or in the treatment of individuals having such diseases.

[0059] In a ninth aspect of the invention, the isolated nucleic acid sequences of the invention may be provided in the form of a vector to enable the in vitro or in vivo expression of the isolated nucleic acid sequences of any of the first to eighth aspects. Vectors include plasmids, chromosomes, artificial chromosomes and viruses and may be expression vectors, which are capable of expressing nucleic acid sequences in vitro or in vivo, or transformation vectors which are capable of transferring the nucleic acid sequence from one environment to another. The nucleic acid molecules of the invention may be operably linked to one or more regulatory elements including a promoter.

[0060] The term regulatory elements includes response elements, consensus sites, methylation sites, locus control regions, post-transcriptional modifications, splice variants, homeoboxes, inducible factors, DNA binding domains, enhancer sequences, initiation codons, secretion signals and, polyA sequences. Regions upstream or downstream of a promoter such as enhancers, which regulate the activity of the promoter, are also regulatory elements.

[0061] The vector may also comprise an origin of replication; appropriate restriction sites to enable cloning of inserts adjacent to the polynucleotide molecule; markers, for example antibiotic resistance genes; ribosome binding sites: RNA splice sites and transcription termination regions; polymerisation sites; or any other element, such a secretion signals, which may facilitate the cloning and/or expression of the polynucleotide molecule.

[0062] Within a vector the gene may be expressed upstream or downstream of an expressed protein tag such as a histidine tag, V5 epitope tag, green fluorescent protein tag, MHC tag or other such tag known to those skilled in the art. Use of such a tag allows easy localisation, affinity purification and detection of the fusion protein with an antibody to the tag moiety.

[0063] Where two or more nucleic acid molecules of the invention are introduced into the same vector, each may be controlled by its own regulatory sequences, or all molecules may be controlled by the same regulatory sequence. In the same manner, each molecule may comprise a 3' polyadenylation site. Examples of suitable vectors will be known to persons skilled in the art and include pBluescript II, lambdaZap, and pCMV-Script (Stratagene Cloning Systems, La Jolla, USA).

[0064] Appropriate regulatory elements, in particular promoters, will usually depend upon the host cell into which the

expression vector is to be inserted. Where microbial host cells are used, promoters such as lactose promoter system, tryptophan (Trp) promoter system, β-lactamase promoter system or phage lambda promoter systems are suitable. Where yeast cells are used, preferred promoters include alcohol dehydrogenase I or glycolytic promoters. In mammalian host cells, preferred promoters are those derived from immunoglobulin genes, SV40, Adenovirus, Bovine Papilloma virus etc. Suitable promoters for use in various host cells would be readily apparent to a person skilled in the art (See, for example, Current Protocols in Molecular Biology Edited by Ausubel et al, published by Wiley). In addition, the regulatory elements may be modified, for example by the addition of further regulatory elements, to achieve a desired expression pattern.

[0065] By operably linked is meant that the components of the vector or sequence are in a relationship which allows them to function as intended.

[0066] These vectors may be used to transform host cells, for example, prokaryotic or eukaryotic cells. These cells may be used in the production of recombinant gene products produced from the isolated nucleic acid sequences of the first to eighth aspects, or in the regulation or analysis of the nucleic acid sequences of the first to eighth aspects. The transformed host cells form part of the invention. Preferred cells include *E. coli*, yeast, filamentous fungi, insect cells, mammalian cells, preferably immortalised, such as mouse, CHO, HeLa, Myeloma or Jurkat cell lines, human and monkey cell lines and derivatives thereof.

[0067] According to a tenth aspect of the invention, there is provided a polypeptide sequence comprising a polypeptide sequence encoded by a nucleic acid sequence of the first to eighth aspects of the invention. Preferably the polypeptide sequences are encoded by a nucleic acid sequence of **FIG. 5**.

[0068] The tenth aspect of the invention includes a polypeptide sequence comprising a polypeptide sequence as shown in any one of **FIGS. 5***a* (iii), **5***a* (v), **5***b* (ii), **5***b* (iii), **5***c* (iii), **5***d* (iii) or a sequence homologous thereto, or a fragment thereof. The sequences of **FIGS. 5***a* (iii), **5***a* (v), **5***b* (ii), **5***b* (iii), **5***c* (iii), **5***d* (iii) are the predicted human ANGE, CLLD7 and CLLD8 polypeptide sequences respectively.

[0069] The ANGE, CLLD7 and CLLD8 polypeptides or sequences substantially homologous thereto or a fragments thereof may be subject to post-translational modification. Post-translational modification (PTM) is defined herein as including modification of a protein following translation by proteolytic cleavage e.g. cleavage of a preprotein, a proprotein or a preproprotein by removal of a signal sequence or activation of a zymogen. PIM also includes the attachment of a carbohydrate to a protein, the predominant sugars attached include glucose, galactose, mannose, fucose, GalNAC, GlcNAC and NANA. The carbohydrates may be linked to the protein either by O-glycosidic or N-glycosidic bonds e.g. glycosylation. Also included are acylation; methylation; phosphorylation; sulfation and prenylation. Vitamin C-dependent modifications such as proline and lysine hydroxylation and carboxy terminal amidation and vitamin K-dependent modifications such as carboxylation of glutamine residues are also included as is the addition of selenium as selenocysteine in a protein.

[0070] The ANGE, CLLD7 and CLLD8 polypeptides may be operably linked to a secretion signal, to assist their secretion from the golgi apparatus to another part of the cell. Suitable secretion signals can be provided by recombinant vectors such as pSecTag2 (Invitrogen Corporation, Carlsbad, Calif.). Proteins expressed from such vectors are fused at the N-terminus to the murine Ig kappa chain leader sequence. The secretion signal may be linked to the soluble ANGE, CLLD7 and CLLD8 polypeptide sequences using techniques available in the art, including recombinant DNA technology. The polypeptides may be linked to a tag such as a histidine tag, V5 epitope tag, green fluorescent protein tag, MHC tag or other tag known to those skilled in the art or to a carrier molecule known to a person skilled in the art.

[0071] The polypeptide sequences of the tenth aspect are preferably functional and may be useful in drug screening, diagnosis or therapy. Functional fragments of ANGE, CLLD7 or CLLD8 are those which share immunological or functional characteristics with the full length, membrane bound or soluble form of ANGE, CLLD7 or CLLD8. Fragments may be at least 10, preferably 15, 20, 25, 30, 35, 40 or 50 amino acids in length. Preferably, the polypeptide sequences are isolated.

[0072] In an eleventh aspect of the present invention, there are provided antibodies which are specific for an antigen of a polypeptide sequence of the tenth aspect or an antigen of the isolated nucleic acid of the first to eighth aspects, or fragments of any of said aspects or which react with an antigen of a polypeptide sequence of the tenth aspect or the isolated nucleic acid of the first to eighth aspects, or fragments of any of said aspects. Herein the term "react" has the meaning that the antibody is able to interact with the polypeptide or isolated nucleic acid. The term "specific for" has the meaning that the antibody specifically reacts with the polypeptide or isolated nucleic acid.

[0073] Antibodies can be made by the procedure set forth by standard procedures (*Harlow and Lane*, "Antibodies; A Laboratory manual" Cold Spring Harbour Laboratory, Cold Spring Harbour, New York, 1998). Briefly, purified antigen can be injected into an animal in an amount and in intervals sufficient to elicit an immune response. Antibodies can either be purified directly, or spleen cells can be obtained from the animal. The cells are then fused with an immortal cell line and screened for antibody secretion. The antibodies can be used to screen DNA clone libraries for cells secreting the antigen. Those positive clones can then be sequenced as described in, for example, Kelly et al., Bio/Technology 10:163-167 (1992) and Bebbington et al., Bio/Technology 10:169-175 (1992). Preferably, the antigen being detected and/or used to generate a particular antibody will include polypeptide sequences according to the tenth aspect or isolated nucleic acid sequences according to the first to eighth aspects. The antibody may be a polyclonal or monoclonal antibody, a chimeric antibody, a humanised antibody or a bifunctional antibody or a fragment of any of the above. A bifunctional antibody is an antibody that can bind to two different antigens, these antigens may be different antigens present in the ANGE, CLLD7 or CLLD8 polypeptides or isolated nucleic acid or may be an antigen of ANGE, CLLD7 or CLLD8 combined with e.g. a cellular antigen.

[0074] In a preferred embodiment polyclonal antibodies are raised against peptide fragments as shown in Table 5.

[0075] In particular, the antibody may be raised against a particular domain of ANGE, CLLD7 or CLLD8. Such

antibodies will be useful in diagnostic and therapeutic aspects of the invention. In particular, the antibodies will be useful in the development of assays for detecting or measuring ANGE, CLLD7 or CLLD8 individually or as spliced hybrids in a sample.

[0076] According to a twelfth aspect of the invention, there is provided a process for the preparation of a nucleic acid sequence as defined above, the process comprising ligating together successive nucleotide and/or oligonucleotide residues. Such a process may be carried out using chemical synthesis methods or by using enzymic catalysis. Alternatively, a suitable host cell may be transfected with an appropriate DNA or RNA sequence so as to cause production of the desired sequence in a host cell.

[0077] In a thirteenth aspect of the invention, there is provided a process for the preparation of a polypeptide as defined above, the process comprising ligating together successive amino acids and/or oligopeptides. Such a process may be carried out using chemical synthesis methods or by using enzymic catalysis. Alternatively, a suitable host cell may be transfected with an appropriate DNA or RNA sequence so as to cause production of the desired polypeptide in a host cell. The polypeptide may be produced in a cell free system.

[0078] In a fourteenth aspect, there is provided a host cell comprising a vector or isolated or recombinant nucleic acid molecule according to the aforementioned aspects. The host cell may comprise an expression vector, or naked DNA encoding the nucleic acid molecules of the invention. A wide variety of suitable host cells are available, both eukaryotic and prokaryotic. Examples include bacteria such as *E. coli*, yeast, filamentous fungi, insect cells, mammalian cells, preferably immortalised, such as mouse, CHO, HeLa, myeloma or Jurkat cell lines, human and monkey cell lines and derivatives thereof. The host cells are preferably capable of expression of the nucleic acid sequence to produce a gene product (i.e. RNA or protein). Such host cells are useful in drug screening systems to regulate or analyse the polypeptides of the tenth aspect or to identify agents for use in diagnosis or treatment of individuals having, or being susceptible to disease.

[0079] The method by which said nucleic acid molecules are introduced into a host cell will usually depend upon the nature of both the vector/DNA and the target cell, and will include those known to a person skilled in the art. Suitable known methods include but are not limited to fusion, conjugation, liposomes, immunoliposomes, lipofectin, transfection, transduction, eletroporation or injection, as described in Sambrook et al.

[0080] In a fifteenth aspect of the present invention, there is provided a transgenic non-human animal comprising a nucleic acid sequence according to an aforementioned aspect of the invention. Such transgenic non-human animals are useful for the analysis of single nucleotide polymorphisms and their phenotypic effect and so for the analysis of the ANGE, CLLD7 and CLLD8 gene cluster and its phenotypic effect. Expression of a polynucleotide sequence of the invention in a transgenic non-human animal is usually achieved by operably linking the polynucleotide to a promoter and/or enhancer sequence, preferably to produce a vector of the above aspect, and introducing this into an embryonic stem cell of a host animal by microinjection techniques (Hogan et al., A Laboratory Manual, Cold Spring harbour and Capecchi *Science* (1989) 244: 1288-1292). The transgene construct should then undergo homologous recombination with the endogenous gene of the host. Those embryonic stem cells comprising the desired nucleic acid sequence may be selected, usually by monitoring expression of a marker gene, and used to generate a non-human transgenic animal. Preferred host animals include mice, rabbits and other rodents.

[0081] The nucleic acid sequence introduced may not be native to the host animal, i.e. it may be foreign. Such transgenic animals may be distinguished from native, non-transgenic animals using methods known in the art, for example a nucleic acid sample from the transgenic animal may be compared with that from a native animal—the transgenic animal will have a nucleic acid sequence such as a foreign promoter, marker genes etc. Alternatively, the phenotypes of the animals can be compared.

[0082] Where it is desirable to use the transgenic non-human animal of the fifteenth aspect to study disease, it may be desirable for the nucleic acid introduced into the animal to encode a variant of ANGE, CLLD7 or CLLD8 which results in asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis. A transgenic non-human animal may be produced that no longer expresses a native ANGE, CLLD7 or CLLD8 gene or any combination of these genes or any particular splice variant of the genes. These animals may be referred to as "knock-out" (Manipulating The Mouse Embryo—A Laboratory Manual, Hogan et al 1986). In some cases, it may be desirable to modulate the expression of the foreign nucleic acid and/or the native gene in a temporal or spatial manner. This approach removes viability problems if the expression of the native gene is abolished in all tissues.

[0083] In a most preferred embodiment, there is provided a transgenic mouse comprising a nucleic acid encoding a variant form of ANGE, CLLD7 or CLLD8 or any combination of these genes or any splice variant of the genes which causes asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis or non-atopic asthma. Most preferably, the nucleic acid molecule comprises a SNP at the position which corresponds one or more as shown in Table 2c, or to Position 185752b4_2, Position 185752b5_3 and/or Position 4321017b38_1 of **FIG. 5**.

[0084] Preferably, the mouse is modulated so that it no longer expresses the ANGE, CLLD7 or the CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes in a temporally and/or spatially appropriate manner using homologous recombination techniques or alternatively to over express the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes to produce a protein as a result of transgenic manipulation.

[0085] If a functional polymorphism as shown in Table 4c in the ANGE e.g. ANGE1X3C148T, CLLD7 e.g. CL0703 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes is identified (i.e. a "mutation") a construct containing this polymorphism can be introduced into the mouse germ line (i.e. a knock-in) to produce a pathological variant of a protein rather than knocking it out. Alternatively a pathological variant of the ANGE, CLLD7 or CLLD8 gene or any combination of these genes or any splice variant of the genes may be overexpressed.

[0086] In the context of the present invention, atopic diseases include those resulting from overexpression of the ANGE, CLLD7 or CLLD8 gene or any combination of these genes or any splice variant of the genes, or the presence of a variant form of the ANGE, CLLD7 or CLLD8 gene or any combination of these variant genes or any splice variant of the variant genes. Specifically, such diseases include asthma (atopic and non-atopic), atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis.

[0087] In a sixteenth aspect of the present invention, there is provided a method of diagnosing, or determining predisposition or susceptibility of a subject to atopy or predicting severity of disease in an individual. The method may comprise determining the presence of a variant form of the ANGE, CLLD7 or CLLD8 gene or any combination of these genes or any splice variant of the genes which is known to be associated with a disease state, or measuring the levels of the ANGE, CLLD7 or CLLD8 gene or any combination of these genes or any splice variant of the genes. A variant form of ANGE, CLLD7 or CLLD8 or any combination of at least two of these genes or any splice variant of the genes includes both nucleic acid and amino acid variants. A variant includes any SNP producing an alteration from the wild-type (e.g. for humans) (**FIG. 5**/Table 1) or other mutation or alteration from the wild-type.

[0088] For example, probes or primers as described above may be useful in detecting nucleic acid encoding ANGE, CLLD7 or CLLD8 or any combination of these genes or any splice variant of the genes or a variant thereof. Information regarding the expression pattern or forms of ANGE, CLLD7 or CLLD8 or any combination of these genes or any splice variant of the genes present will be useful in determining whether the individual is susceptible to diseases, resulting from altered expression of ANGE, CLLD7 or CLLD8 or any combination of these genes or any splice variant of the genes.

[0089] In a preferred embodiment, the method may additionally, or alternatively, comprise determining the presence or absence of a risk allele which is associated with one or more of the SNP markers of Table 1, where presence of a risk allele is indicative of disease or predisposition to disease or severity of disease. The method may also comprise genotyping one or more known polymorphisms. Any combination of such polymorphisms may be genotyped. Optionally any one or more SNPs in linkage disequilibrium may be used in the method.

[0090] The SNPs of the invention are listed in Table 1 where the nature of the polymorphism is described in the format wild type allele/variant allele. The SNPs are positioned with respect to **FIG. 5**, where nucleotide position 1 is the 1st nucleotide in the **FIG. 5**.

[0091] The alleles for the remaining SNPs identified in the present invention are described in Table 1.

[0092] Any technique, including those known to persons skilled in the art, may be used in the above method. These may include the use of probes or primers as described above, or antibodies of the eleventh aspect, for example in ELISA assays or in immunolocalisation. Preferably, the method comprises first removing a sample from a subject. More preferably, the method comprises isolating from a sample a nucleic acid or a polypeptide sequence.

[0093] In particular, methods for use in this aspect include those known to persons skilled in the art for identifying differences between nucleic acid sequences, for example direct probing, allele specific hybridisation, PCR methodology including Pyrosequencing (Ahmadian A, Gharizadeh B, Gustafsson A C, Sterky F, Nyren P, Uhlen M, Lundeberg J. Single-nucleotide polymorphism analysis by pyrosequencing, Anal Biochem. 2000 Apr. 10;280(1):103-10; Nordstrom T, Ronaghi M, Forsberg L, de Faire U, Morgenstern R, Nyren P. Direct analysis of single-nucleotide polymorphism on double-stranded DNA by pyrosequencing. Biotechnol Appl Biochem. 2000 Apr. 31 (Pt 2):107-12) Allele Specific Amplification (ASA) (WO93/22456), Allele Specific Hybridisation, single base extension (U.S. Pat. No. 4,656,127), ARMS-PCR, Taqman™ (U.S. Pat. Nos. 4,683,202; 4,683,195; and 4,965,188), oligo ligation assays, single-strand conformational analysis ((SSCP) Orita et al PNAS 86 2766-2770 (1989)), Genetic Bit Analysis (WO 92/15712) and RFLP direct sequencing, mass-spectrometry (MALDI-TOF) and DNA arrays. The appropriate restriction enzyme, will, of course, be dependent upon the polymorphism and restriction site, and will include those known to persons skilled in the art. Analysis of the digested fragments may be performed using any method in the art, for example gel analysis, or southern blots.

[0094] There is provided a method of diagnosing, or determining predisposition to disease or severity of disease, comprising determining the presence or absence of an allele of a SNP at e.g. as shown in Table 2c, or at position 185752b4_2, 185752b5_2 and/or 4321017b38_1 of **FIG. 5**, wherein presence of a risk allele is diagnostic of disease or predisposition to disease or severity of disease.

[0095] The present invention is advantageous in that it facilitates the accurate diagnosis of disease, or the determination of predisposition to disease or the severity of disease. Thus, by genotyping, an individual may be identified as having or being predisposed to disease and the likely severity of the disease. This helps to identify those individuals who are likely to respond positively to particular treatments or preventative measures. Thus, more effective therapies or preventative measures can be administered.

[0096] The diseases, which are associated with the polymorphisms of the invention, include atopic diseases, such as asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis and non-atopic asthma. Predisposition to disease in the context of the present invention means that these individuals are at higher risk of developing the disease, or a more severe form of the disease, or a particular form of the disease.

[0097] In the context of the present invention, a risk allele is the allele of a polymorphism, which is associated with disease or predisposition to disease. The risk allele may be the wild type or the variant allele, as defined below.

[0098] The term "polymorphism" refers to the coexistence of multiple forms of a sequence. Thus, a polymorphic site is the location at which sequence divergence occurs. The different forms of the sequence, which exist as a result of the presence of a polymorphism, are referred to as "alleles". The region comprising a polymorphic site may be referred to as a polymorphic region.

[0099] Examples of the ways in which polymorphisms are manifested include restriction fragment length polymor-

phisms (Botstein et al Am J Hum Genet 32 314-331 (1980)), variable number of tandem repeats, hypervariable regions, minisatellites, di- or multi-nucleotide repeats, insertion elements and nucleotide or amino acid deletions, additions or substitutions. A polymorphic site may be as small as one base pair, which may alter a codon thus resulting in a change in the encoded amino acid sequence.

[0100] Single nucleotide polymorphisms arise due to the substitution, deletion or insertion of a nucleotide residue at a polymorphic site. Such variations are referred to as SNPs. SNPs may occur in protein coding regions, in which case different polymorphic forms of the sequence may give rise to variant protein sequences. Other SNPs may occur in non-coding regions. In either case, SNPs may result in defective proteins or regulation of genes, thus resulting in disease. Other SNPs may have no phenotypic effects, but may show linkage to disease states, thus serving as markers for disease. SNPs typically occur more frequently throughout the genome than other forms of polymorphism discussed above, and there is therefore a greater probability of finding a SNP associated with a particular disease state.

[0101] Linkage disequilibrium is the co-inheritance of two alleles at greater frequencies than would be expected from the separate frequencies of each allele. Conversely, alleles are in linkage equilibrium if they occur together. The expected frequency of two alleles inherited together is the product of the frequency of each allele.

[0102] Also provided is a method diagnosing an individual as having abnormal serum IgE levels, the method comprising demonstrating in the individual the presence or absence of an allele which is associated with the SNP marker 185752b4_2 and optionally any other SNP in linkage disequilibrium with the marker and a method for diagnosing an individual as having an STI above 5 mm, the method comprising demonstrating in the individual the presence or absence of an allele which is associated with the SNP marker 4321017b38_1 and optionally any other SNP in linkage disequilibrium with the marker.

[0103] Where two or more polymorphisms are genotyped, the method preferably defines determining the presence or absence of a haplotype, which is indicative of disease or predisposition to disease. A haplotype is defined herein as a collection of polymorphic sites in a particular sequence that are inherited in a group, i.e. are in linkage disequilibrium with each other. The identification of haplotypes in the diagnosis of disease helps to reduce the possibility of false positives. The haplotype may be any particular combination of polymorphisms of Table 1, optionally in combination with one or more known polymorphisms. A preferred haplotype is the combination of SNPs as shown in Table 2c; or positions 185752b4_2, 185752b5_3 and 4321017b38_1 of **FIG. 5**.

[0104] A method for diagnosing an individual as being atopic, the method comprising demonstrating in an individual the presence or absence of alleles associated with the haplotype as shown in Table 2c or the haplotype 185752b4_2, 185752b5_3, 4321031b43_1 and optionally any other SNP in linkage disequilibrium with any one of these markers is also provided.

[0105] The methods of the sixteenth aspect are preferably carried out on a sample removed from a subject. Any biological sample comprising cells containing nucleic acid, preferably that of **FIG. 5**, is suitable for this purpose. Examples of suitable samples include whole blood, leukocytes, semen, saliva, tears, buccal, skin or hair. For analysis of DNA, mRNA or protein, the sample must come from a tissue in which the sequence of interest is expressed. Blood is a readily accessible sample. Thus, the method of the sixteenth aspect preferably includes the steps of obtaining a sample from an individual, preparing nucleic acid and/or protein from the sample and analysing the nucleic acid or protein sample for the presence or absence of a particular allele or gene or combination of genes of interest or a particular splice variant. Where nucleic acid is to be analysed, it is preferred that an amplification step be performed prior to analysis. A preferred amplification technique is PCR, although any other suitable methods may be employed. Preferably the method uses a pair of primers which hybridise under stringent conditions to a region either side of a SNP. The primers may include an oligonucleotide sequence as shown in Table 4.

[0106] The subject is preferably a mammal, and more preferably a human. The subject may be an infant, a child or an adult. Alternatively, the sample may be obtained from the subject prepartum e.g. by amniocentesis.

[0107] A subject's risk factor for disease may be determined with reference also to other known genetic factors, and/or clinical, physiological or dietary factors.

[0108] The above described methods may require amplification of the DNA sample from the subject, and this can be done by techniques known in the art, such as PCR (see *PCR Technology: Principles and Applications for DNA Amplification* (ed. H. A. Erlich, Freeman Press, NY 1992; *PCR Protocols: A Guide to methods and Applications* (eds. Innis et al., Academic press, San Diego, Calif. 1990); Mattila et al., *Nucleic Acids Res.* 19 4967 (1991); Eckert et al., *PCR Methods and Applications* 117 (1991) and U.S. Pat. No. 4,683,202. Other suitable amplification methods include ligase chain reaction (LCR) (Wu et al., *Genomics* 4 560 (1989); Landegran et al., *Science* 241 1077 (1988)), transcription amplification (Kwoh et al., *Proc Natl Acad Sci USA* 86 1173 (1989)), self sustained sequence replication (Guatelli et al., *Proc Natl Acad Sci USA* 87 1874 (1990)) and nucleic acid based sequence amplification (NASBA). The latter two methods both involve isothermal reactions based on isothermal transcription which produce both single stranded RNA and double stranded DNA as the amplification products, in a ratio of 30 or 100 to 1, respectively.

[0109] Where it is desirable to analyse multiple samples simultaneously, it may be preferable to use arrays as described in WO95/11995. The array may contain a number of probes, each designed to identify variants of the ANGE, CLLD7 or CLLD8 genes or any combination of two or more of these genes or any splice variant of the genes from a sample.

[0110] Where a restriction enzyme is required, it can be selected according to the nature of the polymorphism and restriction site. Suitable enzymes will be known to persons skilled in the art. Analysis of the digested fragments may be performed using any method in the art, for example gel analysis, or Southern blots.

[0111] Determination of an allele of a polymorphism using the above methods typically involves the use of anti-sense

sequences i.e. sequences which are complementary to the nucleic acid sequences of interest, which may include part of the sequence of **FIG. 5**. Such sequences are described in the first to eighth aspects of the invention.

[**0112**] Where it is desirable to identify the presence of multiple single nucleotide polymorphisms, or haplotypes, in a sample from a subject, it may be preferable to use an array. The array may contain a number of probes, each designed to identify one or more of the above single nucleotide polymorphisms of the invention.

[**0113**] An antibody to the ANGE, CLLD7 or CLLD8 genes or any combination of these genes, or the presence or absence of any splice variant of the genes as previously described may be used in the method of the sixteenth aspect. The detection of binding of the antibody to the antigen in a sample may be assisted by methods known in the art, such as the use of a secondary antibody, which binds to the first antibody, or a ligand. Immunoassays including immunofluorescence assays (IFA) and enzyme linked immunosorbent assays (ELISA) and immunoblotting may be used to detect the presence of the antigen. For example, where ELISA is used, the method may comprise binding the antibody to a substrate, contacting the bound antibody with the sample containing the antigen, contacting the above with a second antibody bound to a detectable moiety (typically an enzyme such as horse radish peroxidase or alkaline phosphatase), contacting the above with a substrate for the enzyme, and finally observing the colour change which is indicative of the presence of the antigen in the sample.

[**0114**] Any biological sample comprising cells containing nucleic acid or protein is suitable for this purpose. Examples of suitable samples include whole blood, semen, saliva, tears, buccal, skin or hair. For analysis of cDNA, mRNA or protein, the sample must come from a tissue in which the ANGE, CLLD7 or CLLD8 genes or any combination of two or more of these genes or any splice variant of the genes is expressed. Peripheral blood leukocytes are a readily accessible sample.

[**0115**] In a seventeenth aspect of the invention, there is provided a splice variant of ANGE, CLLD8 or CLLD7 for use in a method of diagnosing an IgE mediated disease, atopy, or a form of atopic disease or non-atopic asthma, or predicting severity of disease, or predisposition to disease.

[**0116**] The splice variant is preferably an RNA, more preferably a mRNA sequence, encoded by the whole or part of the sequence of ANGE or CLLD8 or CLLD7. Transcripts of the ANGE gene and splice variants of the ANGE gene are included as a further aspect of the invention. The splice variants of the seventeenth aspect include at least one exon, or fragment of an exon of ANGE, CLLD8 or CLLD7, or a combination of at least one exon, or fragment of an exon, from at least two of the ANGE, CLLD8 and CLLD7 genes. In particular, the splice variants of ANGE may include transcripts having AB011031 exon 1 or AF155105 exon 1; or comprising at least exon 2; lacking exon 2; comprising at least exon Va or Vb which lies between exons 5 and 6 (**FIG. 4G**); lacking exon Va or Vb; comprising at least exon 4, 5, 6, 7 and/or 8. The intron/exon map of ANGE is shown in **FIG. 3**.

[**0117**] In an eighteenth aspect, there are provided the use of a splice variant of ANGE and/or CLLD8 and/or CLLD7 in the manufacture of a diagnostic for use in a method of diagnosing atopy or a form of atopic disease, or predicting severity of disease, or predisposition to disease. Alternatively, the splice variant is provided for use in the manufacture of a medicament for treating disease or for use in a method of treating disease.

[**0118**] In a nineteenth aspect, there is provided a kit comprising a splice variant according to the seventeenth aspect for use in a method according to the sixteenth aspect. Preferably, two or more splice variants are provided, preferably in the form of an array, or on a chip.

[**0119**] In a twentieth aspect, there is provided a polynucleotide sequence comprising the ANGE, CLLD8 or CLLD7 genes, or a polypeptide encoded by the sequence, or fragment thereof, for use in a screen for an agent which inhibits or enhances the activity of ANGE, CLLD8 or CLLD7. Methods of screening for such agents are also provided.

[**0120**] In a twenty-first aspect of the invention there is provided a kit for diagnosis of disease or predisposition to disease, comprising a means for determining the presence or absence of a allele of a SNP of Table 1, wherein the allele is diagnostic of disease, or of predisposition to disease, or of severity of disease.

[**0121**] In a preferred embodiment, the kit comprises a means for determining the presence or absence of one or more risk alleles of polymorphisms according to the eighth aspect. In particular, the kit comprises means for determining the presence or absence of a risk allele of a SNP as shown in Table 2c; or at at position 185752b4_2, position 185752b5_3, and/or position 4321017b38_1 of **FIG. 5**.

[**0122**] Preferably the kit will comprise the components necessary to determine the presence or absence of a risk allele of the eighth aspect, in accordance with the sixteenth aspect of the invention. Such components include PCR primers and/or probes, for example those described above, PCR enzymes, restriction enzymes, and DNA or RNA purification means. Preferably, the kit will contain at least one pair of primers, or probes, preferably as described above in accordance with the eighth aspect of the invention. The primers are preferably allele specific primers. Other components include labelling means, buffers for the reactions. In addition, a control nucleic acid sample may be included, which comprises a wild type or variant nucleic acid sequence as defined above, or a PCR product of the same. The kit will usually also comprise instructions for carrying out the diagnostic method, and a key detailing the correlation between the results and the likelihood of disease. The kit may also comprise an agent for the prevention or treatment of disease.

[**0123**] In a twenty-second aspect of the invention, there is provided a method of identifying a compound for treatment of disease, comprising (a) administration of a compound to tissue comprising a nucleic acid molecule comprising one or more SNPs at positions which correspond to a positions of **FIG. 5** listed in Table 1; and (b) determining whether the agent modulates an effect of the SNPs.

[**0124**] In a preferred embodiment, the isolated nucleic acid molecule is according to the eighth aspect of the invention, and most preferably comprises a SNP as shown in Table 2c; or at a position corresponding to position 185752b4_2 and/or position 185752b5_3, and/or position 4321017b38_1 of **FIG. 5**.

[0125] In this aspect, a nucleic acid molecule of the invention, and/or a cell line according to an aforementioned aspect, may be used to screen for agents, which are capable of modulating the effect of a SNP.

[0126] Potential agents are those which react differently with a risk allele and non-risk allele. Putative agents will include those known to persons skilled in the art, and include chemical or biological compounds, sense or anti-sense nucleic acid sequence for example as described above, binding proteins, kinases, and any other gene or gene product, agonist or antagonist. Preferably, the agent will be capable of modulating the effects of the disease causing allele. Most preferably, the agent is one which is capable of ameliorating the deleterious effects of the risk allele.

[0127] Such agents may be suitable for either prophylactic administration or after a disease has been diagnosed. The route of administration is suitably chosen according to the disease or condition to be treated, however, typical routes of administration of the agent of the present invention include but are not limited to oral, rectal, intravenous, parenteral, intramuscular and sub-cutaneous routes. The invention also provides for agents to be administered either as DNA or RNA and thus as a form of gene therapy. The agents may be delivered into cells directly by means including but not limited to liposomes, viral vectors and coated particles (gene gun).

[0128] In a twenty-third aspect of the present invention there is provided an agent or antibody as described above according to the invention, for use in preventing or treating an IgE mediated disease such as asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis or non-atopic asthma.

[0129] There is also provided an agent capable of influencing expression of the ANGE and/or CLLD8 and/or CLLD7 genes for use in a method of treating an IgE-mediated disease e.g. atopy or non-atopic asthma in an individual. Preferably, the agent is capable of influencing the activity of the ANGE and/or CLLD8 and/or CLLD7 gene promoters and/or influencing RNA splicing of the ANGE and/or CLLD8 and/or CLLD7 or ANGE and CLLD7 genes or any combination of two or more of the genes or of any splice variant. Influencing or modulating the activity may include either inhibiting or enhancing, or altering the pattern of activity. Examples of agents according to the twenty-third aspect include but are not limited to proteins, such as transcription factors, which may bind to the ANGE/CLLD8 promoter or splice sites; antibodies or binding partners; ribozymes; and polynucleotide sequences.

[0130] Preferred agents for influencing the expression of the genes include polynucleotide sequences, which are complementary to the relevant polynucleotide sequence of **FIG. 5**. Sequence complementarity can be determined using conventional techniques available in the art. Preferred complementary, or antisense, sequences are those which hybridise under stringent conditions to the genes. Suitably stringent conditions are those under which non-specific hybridisation (e.g. to non-ANGE sequences) are avoided.

[0131] In relation to the present invention, "stringent conditions" refers to the washing conditions used in a hybridisation protocol. In general, the washing conditions should be a combination of temperature and salt concentration so that the denaturation temperature is approximately 5 to 20° C. below the calculated T_m of the nucleic acid under study. The T_m of a nucleic acid probe of 20 bases or less is calculated under standard conditions (1M NaCl) as [4° C.×(G+C)+2° C.×(A+T)], according to Wallace rules for short oligonucleotides. For longer DNA fragments, the nearest neighbour method, which combines solid thermodynamics and experimental data may be used, according to the principles set out in Breslauer et al., PNAS 83: 3746-3750 (1986). The optimum salt and temperature conditions for hybridisation may be readily determined in preliminary experiments in which DNA samples immobilised on filters are hybridised to the probe of interest and then washed under conditions of different stringencies. While the conditions for PCR may differ from the standard conditions, the T_m may be used as a guide for the expected relative stability of the primers. For short primers of approximately 14 nucleotides, low annealing temperatures of around 44° C. to 50° C. are used. The temperature may be higher depending upon the base composition of the primer sequence used.

[0132] Antisense sequences which hybridise under stringent conditions to the ANGE or CLLD8 or CLLD7 genes may be useful as primers in any of the aspects of the present invention. Pairs of primers for amplification of all or part of the ANGE, CLLD8 or CLLD7 genes, or alleles, or variants thereof, form another aspect of the invention.

[0133] There is also provided the use of an agent or antibody as described above in the manufacture of a medicament for use in preventing or treating an IgE mediated disease such as asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis or non-atopic asthma. The agents of the above aspect, in particular antisense sequences, may also be useful in diagnosing an individual as having atopy.

[0134] According to a twenty-fourth aspect of the invention, there is provided, a pharmaceutical composition or medicament comprising a nucleic acid or polypeptide sequence as defined above according to the invention. Alternatively, the pharmaceutical composition may comprise an agent as defined in relation to the above aspect or an antibody according to the eleventh aspect of the invention.

[0135] Administration of pharmaceutical compositions is accomplished by any effective route, e.g. orally or parenterally. Methods of parental delivery include topical, intra-arterial, subcutaneous, intramedullary, intravenous, or intranasal administration. Administration can also be effected by amniocentesis-related techniques. Oral administration followed by subcutaneous injection would be the preferred routes of uptake; also long acting immobilisations would be used. In addition to the active ingredients, these pharmaceutical compositions may contain suitable pharmaceutically acceptable carriers comprising excipients and other compounds that facilitate processing of the active compounds into preparations which can be used pharmaceutically. Further details on techniques for formulation and administration may be found in the latest edition of "REMINGTON'S PHARMACEUTICAL SCIENCES" (Maack Publishing Co, Easton Pa.).

[0136] Pharmaceutical compositions for oral administration can be formulated using pharmaceutically acceptable carriers well known in the art, in dosages suitable for oral administration. Such carriers enable the pharmaceutical

compositions to be formulated as tablets, pills, dragees, capsules, liquids, gels, syrups, slurries, suspensions, etc., suitable for ingestion by the patient.

[0137] Pharmaceutical compositions suitable for use in the present invention include compositions wherein the active ingredients are contained in an effective amount to achieve the intended purpose. Thus, a therapeutically effective amount is an amount sufficient to ameliorate or eradicate the symptoms of the disease being treated. The amount actually administered will be dependent upon the individual to which treatment is to be applied, and will preferably be an optimised amount such that the desired effect is achieved without significant side-effects. The determination of a therapeutically effective dose is well within the capability of those skilled in the art. Of course, the skilled person will realise that divided and partial doses are also within the scope of the invention.

[0138] For any compound, the therapeutically effective dose can be estimated initially either in cell culture assays or in any appropriate animal model. These assays should take into account receptor activity as well as downstream processing activity. The animal model is also used to achieve a desirable concentration range and route of administration. Such information can then be used to determine useful doses and routes for administration in humans.

[0139] A therapeutically effective amount refers to that amount of agent, which ameliorates the symptoms or condition. Therapeutic efficacy and toxicity of such compounds can be determined by standard pharmaceutical procedures, in cell cultures or experimental animals (e.g. ED_{50}, the dose therapeutically effective in 50% of the population; and LD_{50}, the dose lethal to 50% of the population). The dose ratio between therapeutic and toxic effects is the therapeutic index, and it can be expressed as the ratio ED_{50}/LD_{50}. Pharmaceutical compositions, which exhibit large therapeutic indices, are preferred. The data obtained from cell culture assays and animal studies is used in formulating a range of dosage for human use. The dosage of such compounds lies preferably within a range of circulating concentrations that include the ED_{50} with little or no toxicity. The dosage varies within this range depending upon the dosage form employed, sensitivity of the patient, and the route of administration.

[0140] The exact dosage is chosen by the individual physician in view of the patient to be treated. Dosage and administration are adjusted to provide sufficient levels of the active moiety or to maintain the desired effect. Additional factors, which may be taken into account, include the severity of the disease state. Long acting pharmaceutical compositions might be administered every 3 to 4 days, every week, or once every two weeks depending on half-life and clearance rate of the particular formulation. Guidance as to particular dosages and methods of delivery is provided in the literature (see, U.S. Pat. Nos. 4,657,760; 5,206,344 and 5,225,212 herein incorporated by reference).

[0141] According to a twenty-fifth aspect of the invention, there is provided a method of preventing or treating disease in a subject comprising modulating the activity, expression, half life or post-translational modification of ANGE and/or CLLD7 and/or CLLD8 or any combination of two or more of these genes or any splice variant of the genes in the subject.

[0142] In addition, the treatment of individuals having an IgE mediated disease or non-atopic asthma includes prevention of atopy, and prophylactic and therapeutic measures.

[0143] Preferably, the method is carried out in a subject who has been diagnosed as suffering from, or is susceptible to IgE mediated diseases such as asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis, or non-atopic asthma.

[0144] Preferably, the method comprises determining the presence or absence of a risk allele of a SNP such as one which has an association with IgE mediated disease e.g. at position 185752b4_2, 185752b5_3 and/or 4321017b38_1 of **FIG. 5**; or which has an association with asthma, atopy or a combination thereof e.g. as shown in Table 2c; and if the risk allele is present, administering treatment in order to prevent, delay or reduce the disease.

[0145] Preferably, the step of determining the presence or absence of a risk allele is carried out in accordance with the sixteenth aspect, and therefore also comprises determining the presence or absence of risk alleles of SNPs of Table 1, or any combination thereof, for example as described above.

[0146] There is also provided a method of preventing or treating an IgE mediated disease or of non-atopic asthma in an individual, the method comprising modulating the expression of the CLLD8 and/or ANGE and/or CLLD7 genes or any combination of two or more of the genes or of any splice variant of the genes. Preferably, the method modulates the production of a gene product according to the first to eighth aspects of the invention. In particular, the twenty-fifth aspect may be achieved by modulating the activity of the CLLD8 promoter, or modulating the splicing of the CLLD8 and/or ANGE genes.

[0147] By modulating or influencing is meant inhibiting, enhancing or otherwise altering the expression.

[0148] The prevention or treatment of disease according to the twenty-fifth aspect may include the administration of any agent capable of modulating the effects of the ANGE, CLLD7 or CLLD8 genes or any combination of two or more of these genes or fragments of these genes or any splice variant of the genes or of an allele which has an association with disease. Preferably, the agent is one which is capable of ameliorating the deleterious effects of the risk allele. The methods include, but are not limited to, gene therapy techniques. Gene therapy techniques typically involve replacing the nucleic acid sequence comprising the risk allele, or otherwise down regulating the effects of the risk allele. The nucleic acid sequences of the first to eighth aspect, or sequences anti-sense thereto, will be useful in gene therapy.

[0149] By modulating is meant inhibiting or increasing the activity of the gene or gene product. Preferably, the activity is inhibited. The activity of the gene or gene product includes any aspect of its production or function, including transcription and translation of nucleic acid sequences, and assembly of the protein, post-translational modification of the protein and downstream interactions with other factors.

[0150] The activity of the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes can be modulated in a number of ways. For example, the expression of the gene may be inhibited through the use of antisense sequences, such as

those of the first to eighth aspects of the invention or by the production of antisense RNA sequences. Such sequences when introduced into a subject by gene therapy will hybridise to the ANGE, CLLD7 or CLLD8 gene or to any transcript which is a combination of two or more of these genes or to any splice variant of the genes or to RNA transcribed from the gene or genes, and inhibit its transcription or translation. This method may be particularly useful where it is desirable to modulate the function or expression of certain splice variants of ANGE, CLLD7 or CLLD8 or certain combinations of these genes whilst not affecting others.

[0151] Introduction of a nucleic acid sequence may use gene therapy methods including those known in the art. In general, a nucleic acid sequence will be introduced into the target cells of a subject, usually in the form of a vector and preferably in the form of a pharmaceutically acceptable carrier. Any suitable delivery vehicle may be used, including viral vectors, such as retroviral vector systems, which can package a recombinant genome. The retrovirus could then be used to infect and deliver the polynucleotide to the target cells. Other delivery techniques are also widely available, including the use of adenoviral vectors, adeno-associated vectors, lentiviral vectors, pseudotyped retroviral vectors and pox or vaccinia virus vectors. Liposomes may also be used, including commercially available liposome preparations such as Lipofectin®, Lipofectamine®, (GIBCO-BRL, Inc. Gaitherburg, Md.), Superfect® (Qiagen Inc, Hilden, Germany) and Transfectam® (Promega Biotec Inc, Madison Wis.).

[0152] Other means to modulate a biological activity of the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes includes using agents which may affect interaction of ANGE, CLLD7 or CLLD8 or any combination of two or more of these genes or any splice variant of the genes with downstream factors with which they interact.

[0153] Also provided is an agent capable of influencing expression of the ANGE, CLLD8 or CLLD7 gene, for use in a method of preventing or treating an IgE mediated disease or non-atopic asthma in an individual. Preferably the agent is capable of influencing the activity of the ANGE. CLLD8 or CLLD7 gene promoters or any combination of two or more of the gene promoters. Preferably the agent is capable of influencing RNA splicing of the ANGE, CLLD8 or CLLD7 gene or of any combination of two or more of the transcripts of the genes.

[0154] Agents include nucleic acid sequences of the first to eighth aspects, polypeptide sequences of the tenth aspect, antibodies of the eleventh aspect, and any other agent defined herein, preferably those which are capable of modulating the activity of ANGE, CLLD7 or CLLD8 or any combination of two or more of these genes or any splice variant of the genes.

[0155] The subject may be any animal, preferably a mammal, and more preferably human.

[0156] Also provided is the use of an agent as defined above in the manufacture of a medicament for use in the prevention or treatment of an IgE mediated disease or non-atopic asthma, as defined above, in a subject.

[0157] According to a twenty-sixth aspect of the invention, there is provided a number of screens. A first screen provides for identifying an agent, which modulates the activity of the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes comprising:

[0158] providing a polypeptide sequence as claimed in the tenth aspect of the invention;

[0159] providing a substrate;

[0160] providing an agent to be tested;

[0161] measuring whether the agent to be tested modulates the activity of the polypeptide by measuring processing of the substrate.

[0162] The components of the screen are combined, in any optional order, more than 1 substrate or polypeptide may be included in the assay.

[0163] In the screening assay the polypeptide may be any polypeptide according to the tenth aspect of the invention. Fragments of the ANGE, CLLD7 or CLLD8 genes or any combination of two or more of the genes or any splice variant of the genes may be used. Also, the ANGE, CLLD7 or CLLD8 genes or any combination of these genes or any splice variant of the genes which comprise one or more SNP nucleic acid sequences of the present invention, such as described in the first to eighth aspects may be used. The polypeptide may be purified or non-purified. The polypeptide may be soluble. It may comprise one or more of the domains.

[0164] The agent being tested is being identified for use in the prevention or treatment of an IgE mediated disease or disorder or in non-atopic asthma. IgE mediated diseases or disorders include: asthma, atopy, hayfever, eczema, atopic dermatitis or allergic rhinitis.

[0165] The substrate may be any which is processed by a polypeptide according to the tenth aspect of the invention. By processed is meant any changes which can be measured. These substrates may be fluorescently labelled or modified to allow easy detection of processing. Such labelling or modification is known to the person skilled in the art.

[0166] In a preferred embodiment, the assay is any means of measuring histone methyl transferase activity or nucleotide exchange factor activity known to the person skilled in the art. For example Hama et al J. Biol. Chem., 274: 15284-15291 1999.

[0167] The present invention further provides a screen for identifying an agent which modulates the activity of the ANGE, CLLD7 or CLLD8 genes or any combination of two or more of these genes or any splice variant of the genes comprising:

[0168] providing a polypeptide according to the tenth aspect of the invention;

[0169] providing an agent to be tested;

[0170] providing a cell; and

[0171] measuring whether the agent to be tested modulates the activity of the polypeptide by measuring adhesion of the cell to a surface.

[0172] Such a screen can be referred to as a cell adhesion screen (or assay). The components of the screen are combined, in any optional order.

[0173] Typically cells used in the cell adhesion assay may be maintained in suspension where adhesion is measured by aggregation of the cells due to intercellular adhesion molecule interactions. Alternatively, adhesion to a surface may be measured. The surface may be a non-biological molecule e.g. tissue culture plastic or it may be a biological molecule, which is cellular or non-cellular. Examples of a non-cellular molecule include extracellular matrix components such as fibronectin, collagen and such like. One or more cells or other biological non-cellular molecules may be attached to a surface such as a tissue culture surface or an extracellular matrix component-coated surface. Adhesion is determined by measuring the adhesion of a cell to a surface. Modulation in cell adhesion may be either an increase in cell adhesion or a decrease in cell adhesion. An agent is considered to be a modulator of the polypeptide of the tenth aspect if it affects the activity or expression of the polypeptide, this may be either at the level of expression of the ANGE, CLLD7 or CLLD8 genes or of the expression of any combination of two or more of the genes or any splice variant of the genes or by altering the half life of any of the ANGE, CLLD7 or CLLD8 mRNA or polypeptide molecules or of any combination of two or more of the genes, or of any splice variant of the genes or by affecting the post-translation modification status of the ANGE, CLLD7 or CLLD8 polypeptides or the polypeptide encoded by any combination of two or more of these genes or the polypeptide encoded by any splice variant of the genes.

[0174] The cell may be the host cell of the fourteenth aspect of the invention comprising the vector of the ninth aspect. The twenty-sixth aspect also includes the use of the host cell in screens to identify an agent.

[0175] Yet a further aspect of the invention provides a screen for identifying an agent which modulates the activity of the ANGE, CLLD7 or CLLD8 genes or the activity of any combination of two or more of the genes or the activity of any splice variant of the genes comprising:

[0176] providing a polypeptide according to the tenth aspect of the invention;

[0177] providing an agent to be tested;

[0178] providing a cell;

[0179] measuring a change in differentiation or proliferation of the cell.

[0180] The components of the screen are combined, in any optional order.

[0181] Typically, differentiation may be measured by any means known to the persons skilled in the art for example in the case of a B-lymphocyte, the change in differentiation can be B-cell activation. The cell may express one or more of the polypeptides of the tenth aspect or be the host cell of the fourteenth aspect. In the case of other cell types it may be the induction or prevention of production of a cell signalling factor such as an immunomodulator e.g. a cytokine or growth factor. The cell signalling factor may be secreted. The immunomodulator may be a peptide regulatory factor or may be any other biological substance which expression is altered by an agent which modulates the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes. Typically this assay is performed in vitro for example in tissue or organ culture and the cell may be cultured following removal from a patient or animal or the transgenic animal of the fifteenth aspect.

[0182] The change in phenotype may be any. It may involve a change in B-cell phenotype.

[0183] Such a screen provides an in vitro model for identifying an agent which modulates the activity of the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes.

[0184] Yet a further aspect of the invention provides a screen for identifying an agent which modulates the activity of the ANGE, CLLD7 or the CLLD8 gene or any combination of two or more of the genes or any splice variant of the genes comprising:

[0185] providing a transgenic animal according to the fifteenth aspect of the invention;

[0186] providing an agent to be tested;

[0187] contacting the transgenic animal with the agent to be tested;

[0188] detecting a change in the transgenic animals phenotype.

[0189] The components of the screen are combined, in any optional order.

[0190] The cell against which the agent is tested may be in suspension, tissue culture, as part of an organ or as part of an animal. Preferably the animal is a laboratory animal, such as a rat, rabbit, mouse or other rodent.

[0191] A change in phenotype includes a change in gene expression or in the production of RNA or protein or in cell morphology or behaviour.

[0192] Yet a further aspect of the invention provides a screen for detecting a side effect associated with the use of an agent which modulates the activity of the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of the genes or any splice variant of the genes comprising:

[0193] providing a cell which does not substantially express the nucleic acid sequence of the first to eighth aspects of the invention or the polypeptide of the tenth aspect of the invention;

[0194] providing an agent to be tested;

[0195] contacting the agent to be tested with the cell; and

[0196] measuring any side effect produced by the agent on the cell.

[0197] The components of the screen are combined, in any optional order.

[0198] The side effect to be measured may be any, and may depend on whether the cell is part of a larger tissue or animal. It may involve a change in cell differentiation, or cell proliferation. The side effect may be a measure of the change of phenotype of an organ or animal.

[0199] Yet a further aspect of the invention provides a screen for identifying an agent which modulates the activity

of a polynucleotide according to the first to eighth aspects of the invention or a polypeptide according to the tenth aspect of the invention comprising:

[0200] providing an isolated nucleic acid according to the first to eighth aspects of the invention or a polypeptide according to the tenth aspect of the invention;

[0201] providing an agent to be tested;

[0202] measuring whether the agent to be tested modulates the activity of the isolated nucleic acid or polypeptide by measuring the interaction of the agent with the sample of nucleic acid or polypeptide.

[0203] Preferably this screen is an in vitro transcription assay, measuring transcription of the ANGE, CLLD7 or CLLD8 gene or any combination of two or more of these genes or any splice variant of the genes.

[0204] Alternatively, an agent may be identified by the use of theoretical or model characteristics of the ANGE, CLLD7 or CLLD8 gene or of a transcript produced by a combination of two or more of these genes or any splice variant of the genes. The functional or structural characteristics may be of the protein itself or of a computer generated model, a physical two- or three-dimensional model or an electrical (e.g. computer) generated primary, secondary or tertiary structure, as well as the pharmacaphore (three dimensional electron density map) or its X ray crystal structure.

[0205] Putative agents will include those known to persons skilled in the art or new substances, and include chemical or biological compounds, such as anti-sense nucleotide sequences, polyclonal or monoclonal antibodies which bind to a polypeptide sequence of the tenth aspect.

[0206] According to a twenty-seventh aspect of the invention, there is provided the use of a nucleic acid sequence or polypeptide sequence as defined above in a screen for an agent which modulates the activity of the ANGE, CLLD7 or CLLD8 gene or of any combination of two or more of the genes or of any splice variant of the genes.

[0207] The method preferably comprises contacting a putative agent with a nucleic acid or polypeptide sequence according to an aforementioned aspect of the present invention and monitoring expression and/or activity of the nucleotide or polypeptide sequence. Potential agents are those which alter the activity or expression of the polynucleotide or polypeptide sequence compared to the activity or expression in the absence of the agent. The present method may be carried out by contacting a putative agent with a host cell, tissue culture, or transgenic non-human animal comprising a nucleotide or polypeptide according to the invention, and displaying inflammatory disease.

[0208] Also provided are agents identified by the methods of the twenty-sixth aspect.

[0209] Preferred features for the second and subsequent aspects of the invention are as for the first aspect *mutatis mutandis*.

[0210] **FIG. 1** shows a Linkage Disequilibrium map of the atopy locus.

[0211] a) Linkage Disequilibrium Map of the Atopy Locus

[0212] A GOLD plot[28] of colour coded pair-wise disequilibrium statistics (D') between markers is shown. The locus extends from the bottom left of the figure to the top right. Red and yellow indicate areas of strong LD. LD is approximately divided into four regions. The scale bar at the bottom indicates a distance of 200 Kb.

[0213] b) Detail of LD Around the ANGE (NY-REN-34) Gene Complex

[0214] Association to IgE levels is shown above the figure. Genes are shown as black arrows, pointing in the direction of transcription. The scale bar at the bottom indicates a distance of 100 Kb

[0215] **FIG. 2** shows the extent of linkage disequilibrium between SNPs on chromosome 13q14.

[0216] **FIG. 3**

[0217] a) shows the schematic structure of the gene ANGE

[0218] b) Detail of structure of ANGE promoter and alternate exons

[0219] c) Pile up of transcripts by amplification between alternative Exon I and Exon III

[0220] d) shows transcription of ANGE to immune tissue from alternate Exon 1.

[0221] **FIG. 4** shows splice variation in ANGE.

[0222] a) PCR Amplification of Exons 1-3 in Multiple Tissue cDNA Panels

[0223] The presence of a smaller band indicating absence of exon 2 is observed in all tissues.

[0224] b) PCR Amplification of Exons 4-6 in Multiple Tissue cDNA Panels

[0225] The presence of additional bands indicating retention of a additional exons (Va and Vb) is observed in lung and immune tissues. The band is present in cDNAs from unactivated lymphocytes, and absent in activated lymphocytes.

[0226] c) PCR Amplification of Exons 7-8 in Multiple Tissue cDNA Panels

[0227] The presence of additional bands, indicating retention of exon 7 is observed in lung liver, kidney and pancreas, and immune tissues. The band is most highly expressed in cDNAs from resting T and B cells.

[0228] **FIG. 5** shows the nucleotide sequence of the ANGE 1 gene (NY-REN-34) as nucleotides 313649-346509 the nucleotide sequence of CLLD8 as nucleotides 294727-309803 and the sequence of CLLD8 as nucleotides 349634-410846 of BAC bA103J18.03548.

[0229] **FIG. 5*a*** shows the following sequences for the ANGE gene:

[0230] (i) Exon sequences;

[0231] (ii) Protein sequence;

[0232] **FIG. 5*b*** shows the following sequences for the NY-REN-34 gene:

[0233] (i) mRNA sequence;

[0234] (ii) Protein sequence;

[0235] (iii) Alternative protein sequence;

[0236] **FIG. 5***c* shows the following sequences for the CLLD7 gene:

[0237] (i) Exon sequences;

[0238] (ii) Protein sequence.

[0239] **FIG. 5***d* shows the following sequences for the CLLD8 gene:

[0240] (i) Exon structure and nucleic acid sequence;

[0241] (ii) Protein sequence.

[0242] **FIG. 6** shows the nucleotide sequence of BAC bA101d11.01116.

[0243] **FIG. 7** shows the nucleotide sequence of BAC bA236 m15.00303.

[0244] **FIG. 8** shows domain architectures of CLLD8, ANGE and related proteins, drawn approximately to scale.

[0245] Proteins are described in the text. The SET domains of CLLD8 and ESET are bifurcated due to the presence of large insertions. The IL-5 promoter REII-region-binding protein, that arises from an mRNA initiated within a middle intron of the WHSC1/MMSET gene[46], is shown.

[0246] Domain symbols: AT, AT-hook DNA-binding motif; B, bromodomain; C (white-on-black), cysteine-rich regions flanking SET domains; C, FYRC domain; C_5HCH, zinc finger domain; CpG, methyl-CpG-binding domains; CXXC, CXXC-type zinc finger; HMG, high mobility group domains; N, FYRN domain; P, PHD domains with two (blue rectangle) and one (yellow rectangle) Zn2+-coordinating groups; PW, PWWP domains; SET, Su(var)3-9, Enhancer-of-zeste, trithorax methyltransferase domains; and, T, tudor domains.

[0247] **FIG. 9** shows co-expression of the CLLD8/ANGE gene complex.

[0248] **FIG. 10** shows Northern Blots of the gene for ANGE (NY-REN-34) and CLLD8. The presence of large bands and differential splicing in PBMC is apparent.

[0249] The figures show alternative probings of the same Northern blot. The expected transcript size of approximately 1.6 Kb for ANGE is seen in all tissues. A 3.0 Kb band is prominent in lymph node and thymus, and polymorphic higher molecular weight bands between 6.0 and 8.0 Kb are visible in immune tissues. The expected 4.0 Kb band is seen for CLLD8 in all tissues. Additional higher molecular weight bands may also been seen, but their distribution does not coincide with that of ANGE.

[0250] **FIG. 11**—Western blot of Cos-7 cells lysates after transient transfection with pcDNA4 expression vectors.

[0251] 3×10^5 cells were transfected with 1 μg pcDNA4His/MaxLacZ only (lane 1) or with 1 μg pcDNA4His/MaxLacZ plus 6 μg pcDNA4His/Max-CLLD7 (lane 2), 6 μg pcDNA4His/Max-CLLD8 (lane 3), 6 μg pcDNA4His[Max-REN34 (lane 4) and 6 μg pcDNA4His/Max-ANGE (lane 5). Cells were harvested 24 hours post-transfection and whole cell lysates run on a 10% polyacrylamide gel. Proteins were transferred to PVDF membrane, which was probed with an anti-polyhistidine antibody.

[0252] **FIG. 12**—HMT radioactive assay using nuclear extracts from Cos7 cells transfected with pcDNA CLLD8.

[0253] Cells were harvested either 24 or 48 hrs post-transfection with nuclear extracts being tested for HBT activity. The control extracts were treated with Fugene only. All Cos7 extracts equivalent to 11 ug total protein. Positive control=bacterial SUV39H1(82412) 10 ug; negative control=no protein.

[0254] **FIG. 13** shows examples of results obtained with each of the DNA probes containing a potentially functional SNP.

[0255] **FIG. 14** shows the results of such immunolocalisation experiments. CLLD7 (a) and ANGE (b) have a punctate cytoplasmic localisation whereas CLLD8 (c) appears to be restricted to the nucleus of the COS-7 cells.

[0256] TABLE 1 shows associations between LnIgE and the identified SNPs in BAC bA103J18.03548, BAC bA101d11.0116 and BAC bA236 m15.00303.

[0257] The position is in base pairs from the beginning of the reference sequence from the BAC/PAC contig.

[0258] TABLE 2 shows association of common b4_2.b5_3.b43_1 haplotypes to total IgE in subject panels.

[0259] a) SNP/marker associations with total serum IgE.

[0260] b) Association of common b42.b5_3.b43_1 haplotypes to total IgE in subject panels.

[0261] c) Association with categorical traits (asthma and atopy).

[0262] TABLE 3 shows the full length cDNAs isolated from a 1 mb region of **FIG. 5**.

[0263] TABLE 4 shows the primer pairs used in the identification of the SNPs.

[0264] a) SNPS identified in region.

[0265] b) Shows the primer pairs used in RFLP assays.

[0266] c) SNP sequences.

[0267] PCR amplification between exon XII of CLLD8 and exon III of ANGE. Three bands are observed (A, B and C) and their splice structure is depicted in the insert. Band B, which lacks ANGE exon II, has an open reading frame that continues from CLLD8 through to ANGE. The highest molecular weight band arises from priming from a homologous sequence within the IgGFc locus.

[0268] TABLE 5 shows peptide sequences used to generate antibodies.

[0269] TABLE 6 shows putative functional promoter SNPs tested by EMSAs.

EXAMPLE 1

[0270] Subjects

[0271] The primary mapping was carried out on 364 subjects in 80 nuclear families sub-selected from a population sample of 230 families from the rural town of Busselton in Western Australia[3,51] (The AUS1 panel). Families in the panel included both atopic and non-atopic members, and sibships of three or greater were not exclusively atopic or non-atopic. The AUS2 panel consisted of the remaining 150

nuclear families from the population sample. The UK2 panel consisted of 87 nuclear families recruited through a child attending an asthma clinic in the Oxford region. The families contained 216 offspring (148 sibling pairs). The ECZ panel consisted of 150 nuclear families recruited from the dermatology clinics at the Great Ormond Street Hospital for Children, through a child or children with active AD, as previously described[30].

[0272] Phenotypes

[0273] Skin tests to House Dust Mite (HDM) and mixed grass pollen (less the response of negative controls), specific IgE titres to HDM and Timothy Grass, and the total serum IgE were measured as previously described (Hill, M. R., James, A. L., Faux, J. A. & et al *British Medical Journal* 311, 776-9 (1995)). A "Skin Test Index (STI)" was calculated as the sum of the prick skin test results to HDM and grass mix (95% of individuals in this population who were atopic reacted either to HDM, or to grass pollen or both). Bronchial responsiveness to methacholine was measured as previously described: the maximum dose administered was 12 μmol. The slope of the dose-response curve was calculated as (pre-dose forced expiratory volume in one second (FEV1)—last FEV1), the cumulative dose of methacholine. A constant of 0.01 was added to each measurement, to allow $\log_e$ transformation when Slope was 0. Eosinophils in peripheral blood were Coulter-counted and the values $\log_e$ transformed before analysis.

[0274] "Atopy" was defined as a STI>5 mm, or a RAST score to HDM and Timothy Grass>2, or a total serum 1 gE> the 7th decile of the age-corrected population. "Normal" was defined as a STI of 0 and a RAST Index of 0, and a total serum IgE< the 7th decile of the age and sex-matched population. Intermediate phenotypes were classified as unknown. The subjects were administered a modified British MRC questionnaire as previously described. "Asthma" was defined as a positive answer to the questions "Have you ever had an attack of asthma?" and "If yes, has this happened on more than one occasion?".

[0275] SNP Discovery and Typing

[0276] Discovery of SNPs was performed through direct sequencing of non-repetitive DNA fragments that were greater than 1000 Bp in length. For each sequence reaction, primers designed covering 500-600 bps genomic sequence. Five individual samples and one pooled DNA panel of 32 individuals were sequenced. Traces were assembled by the Polyphred/Phrap programmes. Following this random SNP discovery, sequencing of all exons with 250 bp leading and trailing DNA was carried out for all potential candidate genes from the region.

[0277] SNP typing was by PCR and restriction digestion. In the absence of a natural restriction site, one primer was modified to generate a restriction site. PCR was carried out in 10 μl reaction which contained 1) 5 μl 10 ng/μl individual DNA; 2) 5 pmol forward and reverse primers; 3) 0.08 u TaqGold; 4) 1.5-3 mM Mg^{2+}. PCR carried at 94° C. for 15 minutes then 35 cycles for 1) 94° C. 30 s; 2) 50-60° C. 30 s; 3) 72° C. 45 s. After finishing PCR, the plates were tested for checking if the PCR worked, then 5 μl digestion solution which contained 1-2 u restriction enzyme added to each reaction. Samples were run in 24% agrose gels after 3-5 hours digestion. Total 40 SNPs were typed in the Busselton and UK1 family sets.

[0278] Statistical Analysis of Association

[0279] Errors in SNP typing were detected by testing for Mendelian errors and by the MERLIN computer program (http://bioinformatics.well.ox.ac.uk/Merlin), which identifies improbable recombination events from dense SNP maps. SNP haplotypes were generated by MERLIN and recoded as individual alleles.

[0280] Tests of association to quantitative traits were carried out by the QTDT program, which allowed use of markers and phenotypes as covariates in analyses[29]. Association to asthma and categorical traits was examined by the Monks test routine of QTDT[29,31].

[0281] Sequence Analyses

[0282] Genomic sequence was analysed using a modification of HPREP (G. Micklem, unpublished); screening for repeat elements in RepBase[52] using REPEATMASKER (Smit, A. F. and Green, P. http://repeatmasker.genome.washington.edu); for matches to human, rodent, EST, STS and other DNA databases, SWISSPROT, TREMBL and TREMBLNEW peptide databases, CpG islands using CPG[53], transcription factor elements and putative promoter regions using PROMOTERSCAN[54], and exon predictions using GRAIL[55], GENSCAN[56], GENEPARSER[57] and MZEF58. Annotations were collated using ACeDB (http://www.acedb.or/). Known genes were identified using BLASTN[59] against the EMBL DNA database. The peptide databases SWISSPROT, TREMBL and TREMBLNEW were searched using BLASTX[59] for homologues to transcripts of unknown function. Putative roles for remaining transcripts were established using PSI-BLAST[59] and SMART[60].

[0283] IMAGE Clone Sequence and Extension

[0284] IMAGE clones mapping to the region were obtained from Research Genetics and sequenced on a 377 DNA sequencer using ABI Prism Big Dye Terminator (PE Applied Biosystems). Consensus sequences for each IMAGE clone was aligned by the GCG program. Marathon-Ready™ cDNA RACE libraries were obtained form CLONTECH to extend 5' and 3' cDNA ends of the IMAGE clones. Two gene-specific primers(GSP) were designed for each direction for each consensus. Distinct bands from RACE PCR were cut from gels and purified. The bands were cloned with ZERO Blunt™ PCR Cloning kit from Invitrogen. The inserts were sequenced using Big Dye Terminator, and integrated into consensus sequences with GCG.

[0285] Tissue Expression

[0286] Human Multiple Tissue Northern (MTN™) Blots and Human Immune System MTN blots were obtained from CLONTECH. Human Multiple Tissue, Human Immune System and Human Blood Fractions Multiple Tissues cDNA Panels from CLONTECH were used for expression analysis by PCR amplification of target sequences.

[0287] Systematic investigation of the exonic and intronic structure of the splice variants of ANGE was carried out by selective PCR, gel separation of products, cloning with ZERO Blunt™ PCR Cloning kit, and Big Dye Terminator sequencing.

EXAMPLE 2

[0288] A saturation genetic map of chromosome 13q14 identified a one lod support unit for the location of the atopy

locus within a 7.5 cM region centred on D13S161[17]. A 1.5 Mb BAC and PAC contig was constructed, centring on D13S273. A positive association between the total serum IgE and alleles of the microsatellite USA724GI in two panels of families[4] was found.

[0289] The limit of detection of linkage disequilibrium (LD) between a disease and a marker given our sample size is likely to be less than 100 Kb[18,19], suggesting that the atopy gene was within 100 Kb in either direction of USA724G]. This region of chromosome 13q14 is commonly deleted in B-cell chronic lymphocytic leukaemia (BCLL)[20].

[0290] Scaffold sequence tag sites (STSs) from our BAC/PAC contig were then used to prioritise genomic sequencing of the central 1 Mb of the locus. These STSs were mapped on to BAC contigs built by a combination of Hind m digest fingerprinting and STS content[23,24]. An overlapping set of clones from the RPCI-11 BAC library[25] was sequenced using a hierarchical shotgun sequencing strategy[26]. The sequence of the region (in the form of 3 BACs) is shown in **FIGS. 5, 6** and **7**.

[0291] Linkage Disequilibrium Mapping

[0292] SNPs were detected by sequencing repeat-free contigs than 1.5 Kb in length in 5 unrelated atopic subjects and 5 unrelated controls, together with a pool of DNA from 32 unrelated individuals.

[0293] Association to Quantitative Traits

[0294] Forty-seven SNPs and a 15 bp deletion-insertion polymorphism were identified with minor allele frequencies $ 20%. These were genotyped in our primary panel of 364 individuals in 80 nuclear families[3]4. Error checking and haplotype generation was carried out by the MERLIN computer program 27. Linkage disequilibrium (ID) between markers was assessed by estimation of D' from the parental haplotypes[18] and portrayed by the GOLD program[28]. LD was roughly distributed into three major and one minor islands (A, Aii, B and C)(**FIG. 1***a*), defining regions in which association to disease could be localised.

[0295] Association was sought between the Loge(IgE concentration) (LnIgE) and the SNPs by variance components analyses[29] (Table 1).

[0296] Association to LnIgE clustered around the 185752b4_2 SNP and extended for approximately 100 Kb within the A and Aii islands of LD (Table 1). Association to the STI was less well defined, but seemed to be centred around 4321017b38_1 and extend for 150 kb. The distance between the two peaks was approximately 160 kb.

[0297] In order to test if these peaks corresponded to distinct QTLs, associations to the LnIgE were tested with the STI as a covariate and vice versa (Table 1). Associations were similarly tested with 185752b4_2 and as covariates. In each case the LnIgE/185752b4_2 complex appeared as distinct from the STI/4321017b38_1 complex.

[0298] The region of association to LnIgE extended across 3 genes (Table 1)(**FIG. 1***b*). The identification of the genes is described below. Inclusion of markers in the first or third genes as covariates (b1_1 or 44593_15) did not abolish the association within the middle gene, whereas the use of a marker in this gene as a covariate (b4_2) removed the evidence for association in the outer regions. These results suggested that the QTL is contained within the centre of markers, which show association to the LnIgE.

[0299] In order to test for replication, six markers (b11_2, b4_2, b5_3, b43_1, b38_1 and b28_2) were typed in other panels of subjects. In order to minimise the numbers of comparisons, the markers were assembled into 3-marker haplotypes, and multi-allelic tests of association were performed before examining individual haplotypes. The b4_2, b5_3, b43_1 haplotype showed consistent association to the LnIgE in each of the panels tested (Table 2). Two haplotypes containing the b4_2*2 and the b5_3*1 alleles (A and D, Table 2) showed negative association with the LnIgE, although they differed at the b43_1 locus. Positive association was observed with the C haplotype (containing b4_2*1 and b5_3*2) in a panel of families with atopic dermatitis[30]. These results further suggest that the polymorphism influencing IgE levels is nearest to b4_2 and b5_3.

[0300] The combined panel of Busselton families (AUS1 and AUS2) may be taken to be representative of the general population. Association was seen to asthma in these subjects with the b4_2 and b5_3 markers (p=0.024 and p=0.017 respectively) using a transmission disequilibrium test[31].

[0301] Association to Categorical Traits

[0302] Gene Identification and Domain Homologies

[0303] Unfinished BAC sequence of the region was assembled and annotated. Systematic identification of expressed sequences was carried out by examination of EST databases and from a cDNA selection experiment[4]. Partial sequences from these sources were consolidated into cDNA contigs, and further extended these by 3' and 5' RACE and Northern blotting was carried out to determine transcript sizes, and to examine tissue expression of the genes.

[0304] Six full length cDNAs were identified from the 1 Mb region of genomic sequence (Table 3).

[0305] Four other sequences were found in the EST databases, but did not have open reading frames (ORFs) or a splice structure and were likely to be genomic contaminants (UniGene clusters Hs.58452, Hs.268773, and Hs.212161).

[0306] Physical mapping of the chromosome 13q14 BCLL locus cell has recently identified 5 of these genes[22]. Three were considered novel candidate genes for leukemogenesis and were named as CLLD6, CLLD7, and CLLD8. The other genes are karyopherin-∀3 (KPNA3) and the gene corresponding to the NY-REN-34 antigen (ANGE). The sixth gene is Emopamil-binding related protein (EBRP).

[0307] Sequence homologies for the three distal genes do not suggest an obvious role in atopy or asthma: EBRP may act as a D8-D7 sterol isomerase in cholesterol biosynthesis, the sequence of KPNA3 suggests that it is involved in the nuclear transport system[32], and CLLD6 contains a SPRY domain, suggesting possible microtubule-binding. The three remaining genes form a tight cluster which contains the region of association to LnIgE levels (Table 1)(**FIG. 1***b*).

[0308] CLLD8

[0309] The most proximal gene, CLLD8, contains both a methyl-CpG-binding domain (MBD) and a SET domain[22] (**FIG. 8**). The MBD appears to lack amino acids required to bind methylated CpG[33,34], but remains likely to bind DNA. SET domains modulate gene expression epigenetically

through histone H3 methylation[35-37]. CLLD8 is likely to be a H3 methyltransferase since it contains both active site and flanking cysteine residues that are important for catalytic activity[37].

[0310] Histone Methyl Transferases

[0311] The expression of genes in eukaryotic organisms is dependent on DNA accessibility. In its natural state, DNA is packaged around a set of histones, H2A, H_2B, H3 and H4. Further higher order compaction is facilitated by the interaction with H1 histone and other non-histone proteins. In this condensed state, chromatin is inaccessible to the transcription machinery and thus genes contained within it are silent. Histone methyl transferases play a critical role in the regulation of gene expression. In mammalian cells, these enzymes are known to methylate histones H3 and H4 at specific lysine residues. The most widely studied member of this protein family is SUV39H1, which selectively methylates histone H3 at lysine residue 9 (K9). The catalytic domain of this enzyme is contained within a highly conserved sequence known as the SET domain. This sequence is required in combination with two flanking cysteine-rich sequences (Pre-SET and Post-SET) to facilitate histone methylation. Thus the PreSET-SET-PostSET domain is regarded as a characteristic signature of histone methyltransferase proteins. CLLD8 contains an expanded SET domain and a methyl binding domain, a structure that is capable of recognising methylated DNA.

[0312] Reference: Kouzarides, T. "Histone Methylation in transcriptional control" (2002) Curr Opin Genet and Devel 12:198-209.

[0313] ANGE (NY-REN-34)

[0314] The next gene is approximately 4 Kb distal to the 3' end of CLLD8 and is transcribed in the same direction. It encodes NY-REN-34 antigen which was identified by serological analyses of cDNA products from four patients with renal cell carcinoma[38]. Transcripts of the gene are also highly represented in stomach, tonsil and in B-cells (UniGene cluster 279799). The gene product contains two PHD (plant homeo domain) zinc fingers, which suggest its involvement in chromatin-mediated transcriptional regulation[39] (**FIG. 8**). PHD fingers normally posses two Zn^{2+} co-ordinating groups which contain cysteine and histidine residues. The N-terminal (5') of the NY-REN-34 finger pair however lacks one of the two coordinating groups.

[0315] The arrangement of PHD fingers in NY-REN-34 is characteristic of human proteins such as ALL-1 and AF10 whose genes are fused in some cases of acute lymphoblastic leukaemia[40] (**FIG. 8**). Analogy to AF10[41] and ALL[42] PHD fingers suggests that the NY-REN-34 PHD finger pair is likely to possess a homodimerisation or a protein-binding role or both. NY-REN-34 has also been called BCAP (BRCA1-C terminus associated protein)(EMBL accession AB011031) and is likely to interact with the BRCT domains of BRCA1. These domains are capable of stimulating transcription, remodelling chromatin and interacting with histone-modifying enzymes such as the histone acetyltransferase p300 and the human histone deacetylase, HDAC[43].

[0316] CLLD7

[0317] CLLD7 follows only 3 Kb from the end of ANGE, but is transcribed in the opposite direction. It shows strong protein sequence similarity to RLG and RCC1 (regulator of chromatin condensation 1). RCC1 binds to DNA and to histones H2A and H2B44. CLLD7 contains a BTB/POZ domain, which classically form homophilic and heterophilic dimers.

[0318] Remodelling of chromatin structure is important in transcriptional regulation of genes influencing IgE production[45], so CLLD8, ANGE and CLLD7 may all be considered candidates for influencing atopic processes. However, CLLD8 and ANGE both contain domain homologies to the IL-5 promoter REII-region-binding protein (RE-IIBP)[46], as well as to genes found in leukaemia (ALL)[40] and multiple myeloma (MMSET)[46,47] (**FIG. 8**). This suggests a role in immune regulation and immunoglobulin production.

[0319] CLLD8 and ANGE (NY-REN-34) Co-Expression

[0320] The close genomic proximity of CLLD8 and ANGE raises the possibility of co-ordinate expression of both genes, or expression of a combined gene product that would be similar to RE-IIBP[46]. PCR between exon XII of CLLD8 and exon III of ANGE identified three bands (A, B and C) which were expressed in most tissues (**FIG. 10**). Each band contained a specific splice structure (**FIG. 3**), but our sequence did not identify an extended open reading frame in any of the bands. Despite the absence of an open reading frame, the non-random splice structure suggests a function, which may be regulatory.

[0321] Tissue Expression and Splice Variation

[0322] We examined northern blots of CLLD8, ANGE and CLLD7. The northern for ANGE showed polymorphic high molecular weight bands (**FIG. 10**). High molecular weight bands were also seen with CLLD8, but these did not match the tissues in which similar bands were seen with ANGE (**FIG. 2**). CLLD6 and the other genes from the contig showed the expected size bands with a uniform and ubiquitous tissue distribution.

[0323] The ANGE gene contains 10 exons. Examination of the public databases identified a number of alternative first exons with alternative start methionines for protein translation (EMBL:AF155105, AL552215, B1463029, BG759124). We have been able to identify all of these variants by sequencing of specific PCR products from cDNA panels (data not shown). In addition, versions of the cDNA show skipping of exon II were found (ESTHUM: BF662927 and BE787177, EMBL:AL552215). The AL552215 variant results in an incomplete first PHD domain, that would not be anticipated to be functional.

[0324] Exon-specific PCR of cDNA from multiple tissue panels identified exon II skipping variants to be present at approximately the same concentration in all tissues (**FIG. 4*a***).

[0325] Highly tissue-specific splice variants were found which contained additional exons between exons V and VI (named exon Va and Vb). These variants differed by 54 bps, and were present in lung and peripheral blood leucocytes (PBL) (**FIG. 4*b***). Examination of PBL fractions showed that the splice variants were present in unactivated CD4+, CD8+ and CD19+ cells, but absent in activated cells. Both exons result in a premature stop codon. Alternative splicing with a premature stop codon has previously been identified as mechanism for negative control of transcription[48], and a

negative role for these variants is consistent with their expression in inactive T and B Cells.

[0326] A splice variant in which intron VII was retained between exons VII and VIII (ESTHUM: BE141730), which was most strongly expressed in active CD4+ and CD8+ leukocytes was observed (**FIG. 4***c*). This variant also results in a premature stop codon.

[0327] ANGE

[0328] The identification of ANGE (NY-REN-34) by positional cloning rests on three lines of evidence: genetic localisation, tissue expression, and inferred or demonstrated gene function. In the present case, although the region of association to the total serum IgE concentration extends across three genes, our analysis suggests that this is attributable to polymorphism within the gene for ANGE (**FIG. 1**, Table 1, and Table 2). Domains from CLLD8 and ANGE have homologies with known B-Cell transcription factors. Only one gene, ANGE, has differential expression in immune cells and tissues, and is likely to be responsible for atopy at this locus.

[0329] We have carried out further sequencing of ANGE and CLLD8 for 5' regions, all exons, and non-repetitive areas of introns. One conservative coding (Glu-Gly) variant was found in CLLD8, and showed only weak association with the IgE($p<0.01$). One non conservative (Pro-Ser) variant was found in ANGE (ANGE1×3C148T). A non conservative coding (Val-Ala) variant was found in CLLD7 (CLD703).

[0330] The SNPs within the A island of LID were in strong disequilibrium. Control regions for genes may extend for 100 Kb[49], and we have observed at least two haplotypes with different effects on serum IgE levels. Our results indicate that loci underlying complex traits will contain several polymorphisms with different functional consequences[50].

EXAMPLE 3

[0331] Sequence Analyses

[0332] DNA sequence from overlapping, unfinished BACs was assembled to form larger contigs using contigwalk, a systematic comparison and extension tool using BLASTN (S. J. Broxholme, unpublished). A framework map of the region of interest was prepared using vector scores of STS markers from the critical region in the Genebridge4 Radiation Hybrid panel and the Radiation Hybrid mapping software RHMAPPER (Stein, L., Kruglyak, L., Slonim, D., Lander, E. (1995) http://www.genome.wi.mit.edu/ftp/pub/software/rhmapper.) RHMAPPER was then used to find markers in RHDB (Rodriguez-Tome, P. & Lijnzaad, P *Nucleic Acids Res* 29, 165-6. (2001)) that could be placed within this framework.

[0333] For each RHDB entry placed within the framework, the accession number was found from its annotation, and ESTs were selected for the next stage. TIGR Assembler (Sutton G. G., White O., Adams, M. D. and Kerlavage, A. R. (1995) *Genome Science & Technology,* 1, 9-19) was used to make a non-redundant set of sequences.

[0334] Genomic sequence was analysed using a modification of hprep (G. Micklem, unpublished); screening for repeat elements in RepBase (Jurka, J. *Trends Genet* 16, 418-20. (2000)) using RepeatMasker (Smit, A. F. A. and Green, P. http://repeatmasker.genome.washington.edu); for matches to human, rodent, EST, STS and other DNA databases, SWISSPROT, TREMBL and TREMBLNEW peptide databases, CPG islands using cpg (Larsen, F., Gundersen, G., Lopez, R. & Prydz, H. *Genomics* 13, 1095-107. (1992)), transcription factor elements and putative promoter regions using promoterscan (Prestridge, D. S *J Mol Biol* 249, 923-32. (1995)), and exon predictions using GRAIL (Xu, Y., Mural, R. J. & Uberbacher, E. C. *Comput Appl Biosci* 10, 613-23. (1994)), GENSCAN (Burge, C. & Karlin, S. *J Mol Biol* 268, 78-94. (1997)), geneparser (Snyder, E. E. & Stormo, G. D. *Nucleic Acids Res* 21, 607-13. (1993)) and MZEF (Zhang, M. Q. *Proc Natl Acad Sci USA* 94, 565-8. (1997)). Annotations were collated using ACeDB (http://www.acedb.org/).

[0335] Known genes were identified using BLASTN (Altschul, S. F. et al. *Nucleic Acids Res* 25, 3389-402. (1997)) against the EMBL DNA database. The peptide databases SWISSPROT, TREMBL and TREMBLNEW were searched using BLASTX (Altschul et al., supra) for homologues to transcripts of unknown function. Putative roles for remaining transcripts were established using PSI-BLAST (Altschul et al., supra) and SMART (Schultz, J., Copley, R. R., Doerks, T., Ponting, C. P. & Bork, P *Nucleic Acids Res* 28, 2314. (2000)).

[0336] IMAGE Clone Sequence and Extension

[0337] IMAGE clones mapping to the region were obtained from Research Genetics and sequenced on a 377 DNA sequencer using ABI Prism Big Dye Terminator (PE Applied Biosystems). The reaction contained 2 μl Bigdye, 2 μl Half Bigdye, 1 μl primer (5 pmol/μl), 1-4 μl plasmid DNA (400 ng) and 14-1 μl dsH_2O. The sequence reactions were performed in MJ thermal cycler. 1); 95° C.-1 min; 2) 95° C.—1 is; 3) 50° C.—10s; 4) 60° C.—4 mins; 5) repeated step 2 to 4 for 24 cycles [25 cycles total]; 6) 15° C.—hold. Consensus sequences for each IMAGE clone was aligned by the GCG program.

[0338] Marathon-Ready™ cDNA RACE libraries were obtained form CLONTECH to extend 5' and 3' cDNA ends of the IMAGE clone sequences. Two gene-specific primers(GSP) were designed for each direction for each consensus. There were about 150-200 bps overlapping sequence between the two GSP primers. GSP primers were designed to have 25-28 bps, 50-70% GC and Tm 65° C. Touchdown PCRs were used for the RACE the ends as: 1) 94° C. for 30 s, 2) 25-30 cycles at 94° C. for 5 s, 68-72° C. for 4 min.

[0339] Distinct bands from RACE PCR were cut from gels and purified. The bands were cloned with ZERO Blunt™ PCR Cloning kit from Invitrogen. The inserts were sequenced using Big Dye Terminator, and integrated into consensus sequences with GCG.

[0340] Northern Blot Analysis

[0341] Human Multiple Tissue Northern (MTN™) Blots and Human Immune System MTN blots were obtained from CLONTECH. The Human MTN Blot contained RNA from: heart, brain (Whole), placenta, lung, liver, skeletal muscle, kidney and pancreas. The Human Immune System MTN contained: spleen, lymph node, thymus, peripheral blood leukocyte, bone marrow and fetal liver. The Blots were hybridised with probes generated from cDNA colon or tissue

cDNA solution. The average size of probes was 500-1000 bps. For gene i154016, the probe was 1180 bps from exon 1 to exon 10. The probes were radioactively labelled with [^{32}P]dATP using random primer method. All probes were hybridised at 42° C. overnight in Hybridisation solution (10% Dextran sulphate; 4×SSC; 50 mM sodium phosphate buffer pH7.2; 1 mM EDTA pH 8.0; 10× Denhardts; 50 mg/ml herring DNA sonicated; 1% SDS).

[0342] PCR Screening of MTC Panels

[0343] Human Multiple Tissue cDNA Panels and Human Immune System Multiple Tissues cDNA Panels from CLONTECH were used for expression analysis. The Human Multiple Tissues cDNA panel contained cDNA from: heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. The Human Immune System Multiple Tissues contained cDNA from: spleen, lymph node, thymus, tonsil, leukocyte, marrow and fetal liver. MTC panels were examined in all cDNA consensus sequence over the five BACs genomic sequence. PCRs were carried out in 50 μl which contained: 1)$_{36}$ μl deionised H_2O; 2) 5 μl PCR buffer; 3) 1 μl advanTaq Plus; 4) 5 μl 8 mM dNTP and 5) 4 μl 5 pmol forward and reverse primers. PCR was performed as 1) 30 s at 94° C.; 2)22-38 cycles at 94° C. for 30 s, 68° C. for 2 min; 3) 68° C. for 5 min. In order to observe the abundance of the particular target, a total 5 μl sample each time was removed from the reactions at 22, 26, 30, 34 and 38 cycles.

[0344] For ANGE (NY-REN-34), the CLONETECH Human Blood Fractions MTC panel was also tested as above.

[0345] Systematic investigation of the exonic and intronic structure of the splice variants of ANGE was carried out by selective PCR, gel separation of products, cloning with ZERO Blunt™ PCR Cloning kit, and Big Dye Terminator sequencing.

[0346] Results

[0347] We then investigated the genes within the region of association. Unfinished BAC sequence of the region was assembled and annotated. Systematic identification of expressed sequences was carried out by examination of EST databases and from a cDNA selection experiment (G. Anderson. DPhil Thesis, Oxford University 2001). Partial sequences from these sources were consolidated into cDNA contigs and were further extended by 3' and 5' RACE. Northern blotting was carried out to determine transcript sizes, and to examine tissue expression of the genes.

[0348] Six full length cDNAs were eventually identified from the lMb region of genomic sequence (Table 3). Five other sequences were found in the EST databases, but did not have open reading frames (ORFS) or a splice structure and were likely to be genomic contaminants (i274117, i46536, i513822, i143317 and i447262). Physical mapping of the chromosome 13q14 BCLL locus cell has recently identified three of the genes we found, which were named as CLLD6 (i2350400), CLLD7 (i44593), and CLLD8 (i626548) (Mabuchi, H. et al. *Cancer Res* 61, 2870-7. (2001)). These genes were considered novel candidate genes for leukemogenesis. Our analysis of the domain content of these genes agrees with the assessment of Mabuchi et al that CLLD7 might be involved in cell cycle regulation by chromatin remodelling and that CLLD8, which contains a SET domain, might be associated with methylation-mediated transcriptional repression. We have observed a SPRY domain in CLLD6, which might be involved in microtubule-binding. CLLD6 seems to be beyond the region of association to LnIgE or the STI.

[0349] The gene corresponding to image clone i154016 has been previously recognised to code for NY-REN-34 antigen, which was identified by serological analyses of cDNA from four patients with renal cell carcinoma (Scanlan, M. J. et al. *Int J Cancer* 83, 456-64. (1999)). Transcripts of the gene have also been consistently found in breast carcinoma and in tonsil. The gene contains two PHD domains, one of which is complete and the second of which is N-terminal (5') to the first and is missing one of its two zinc co-ordinating residue groups (mostly Cys). These two PHD domains are very similar to pairs of PHD domains in *Drosophila*/human trithorax and human ALL-1, suggesting that the gene for NY-REN-34 antigen is involved in chromatin-mediated transcriptional regulation (Aasland, R., Gibson, T. J. & Stewart, A. F. *Trends Biochem Sci* 20, 56-9. (1995)).

[0350] Image clone i1895799 is Emopamil-binding related protein, which acts as a D8-D7 sterol isomerase. Image clone i626789 is karyopherin alpha 3, with homologies that suggest that it may be involved in the nuclear transport system (Takeda, S. et al. *Cytogenet Cell Genet* 76, 87-93 (1997)).

[0351] Chromatin structure is important in transcriptional regulation of genes influencing IgE production (Lavender, P., Cousins, D., Smith, P. & Lee, T. Presentation at the National Asthma Campaign International Congress, June 1999. *Clin Exp Allergy* 30, 1697-708. (2000)) so that the SET domain and PHD domain-containing proteins (CLLD8 and NY-REN-34) are prime candidates for influencing atopic processes.

[0352] Mapping of the transcribed sequences back onto the SNP/LD map showed that three of the genes were contained under the peak of association to the LnIgE and STI (**FIG. 1**). These genes were NY-REN-34, CLLD7 and the D8-D7 sterol isomerase.

[0353] Further examination of the genes was based on their tissue expression. Northern blots of CLLD8 and CLLD7 and Karyophern—showed ubiquitous expression of a single sized transcript, as previously described. However, NY-REN-34 showed differential splicing, with higher molecular weight bands present in immune tissues (**FIG. 2**).

[0354] This gene was therefore examined in more detail. It consists of 10 exons, and an alternative exon 1 has been seen in W tissue (**FIG. 3**). Only one of these exons has a promoter (**FIG. 3**). We could only identify PCR products that contained the promoter-associated exon from multiple cDNA (MTC) panels. Further exon-specific PCR amplification of cDNA from the panels showed a number of unexpected bands (**FIG. 4**) in tissues. An alternative version within and without exon two was seen, and was present at approximately the same concentration in all tissues (**FIG. 4*a***). We observed further additional bands when amplifying exons 4-6. These bands were highly tissue-specific, being present in lung and peripheral blood leucocytes (PBL) (**FIG. 4*b***). Examination of PBL fractions showed that the splice variants were present in unactivated CD4+, CD8+ and CD19+ cells, but absent in activated cells. Sequencing of the

splice variant band revealed the presence of an additional exon between exons 5 and 6. This resulted in an immature stop codon. Further splice variants were seen with amplification of exons 7-8 (**FIG. 4***c*), which were specific to leukocytes.

[**0355**] The evidence therefore suggested that the gene for NY-REN-34 is responsible for atopy at this locus. It is situated at the peak of association to the LnIgE and the STI, its sequence homology suggests that it acts as a regulatory factor, and is differentially spliced in the specific tissues known to be involved in the regulation of IgE and the allergic response. We therefore have named the NY-REN-34 gene ANGE (atopy new gene).

[**0356**] There are many cell types and phenotypic readouts which can be measured to assess the contribution of these genes to the disease phenotype, including cell-cell interactions, inflammatory cell recruitment, inflammatory mediator release, and effector functions. We primarily used B cell lines as the model system for the cell based assays and IgE promoter activity as the main readout of B cell function.

EXAMPLE 4

[**0357**] It is of interest that CLLD8 is in close proximity (approximately 4 Kb) to ANGE, that ANGE has an alternate first exon without a promoter, and that high molecular weight bands were observed on Northern Blots of ANGE. In order to establish if CLLD8-ANGE may on occasion form a single gene product, PCR was performed between CLLD8 and ANGE exons in placental cDNA. A band was observed, indicating the presence with a gene with the domain structure CpGBD-PreSET-SET-PostSET-PHD-PHD. A similar domain structure has been observed in IL-5 promoter REII-region-binding protein (Garlisi, C. G. et al. *Am J Respir Cell Mol Biol* 24, 90-98. (2001)).

[**0358**] Mutations associated with 13q14 have not been identified in any of the genes mapped to this locus. However, the recognition that CLLD8/ANGE form a single transcript with differential splicing (**FIG. 9**) suggests that this gene may cause atopy.

EXAMPLE 5

[**0359**] Mammalian Cell Electroporation

[**0360**] Below is the protocol for the transfection of B cells by electroporation used in the IgE-luciferase reporter assay. These electroporation conditions have been optimised for B cells by measuring β-galactosidase activity after transfection with pcDNA4/HisMax-LacZ. The conditions used in the optimisation experiments are given in the Results section.

[**0361**] The human Burkitt lymphoma cell line DG-75 (DSMZ) was cultured in fresh RPMI plus 10% FCS 24 hours before transfection. The cells were harvested by centrifugation at 1000 rpm for 10 minutes and washed once in cold RPMI. 5×10^6 cells were resuspended in 400 μl cold RPMI and transferred to a 0.4 cm gap electroporation cuvette (BioRad) containing 10 μg pGL2 reporter vector, 10 μg pcDNA4/HisMax expression vector, and 1 μg pRL-TK (Promega) for normalisation of data to account for differences in transfection efficiency. A pulse was delivered at 100 μF and 250V at room temperature using a Gene Pulser II Electroporator (Bio-Rad). Immediately after transfection 600 μl warm RPMI plus 10% FCS was added to the cells which were transferred to 1 ml warm RPMI plus 10% FCS in a 6-well plate. The cells were cultured at 37° C. for up to 24 hours in the presence or absence of human recombinant I14 (Sigma).

Measurement of β-galactosidase Activity in pcDNA4His/MaxLacZ-Transfected Cells

[**0362**] 24 hours post-electroporation the transfection of B-cells was monitored by measuring β-galactosidase activity in cell lysates. Cells were harvested by centrifugation, washed twice in PBS and resuspended in Reporter Lysis Buffer (Promega). After incubating at room temperature for 15 minutes the lysates were centrifuged at 14,000 rpm for 10 minutes and the supernatants added to an equal volume of 2×β-galactosidase assay buffer (200 mM sodium phosphate pH7.3, 2 mM $MgCl_2$, 100 mM β-mercaptoethanol, 1.33 mg/ml ONPG). The reactions were incubated at room temperature or 37° C. until a yellow coloration had developed. 1 ml of 1M $NaCO_3$ was added and the absorbance read immediately at 420 nm.

X-gal Staining of pcDNA4His/MaxLacZ-Transfected Cells

[**0363**] Transfected cells were harvested by centrifugation, washed twice in PBS and fixed in 3.7% formaldehyde in PBS for 15 minutes at room temperature. After washing three times with PBS the cells were incubated in X-gal solution (0.2% X-gal, 2 mM $MgCl_2$, 5 mM $K_4Fe(CN)_6.3H_2O$, 5 mM $K_3Fe(CN)_6$) for 2-16 hours at 37° C.

[**0364**] Dual Luciferase Assay

[**0365**] 800 μl of transfected-cell suspension was centrifuged at 300 rpm for 10 minutes and washed with 1 ml PBS. The cell pellet was resuspended in 50 μl passive lysis buffer and incubated for 20 minutes at room temperature on a rotating wheel. The lysates were briefly centrifuged at 14,000 rpm and dual luciferase activity was measured in 201 μl of the supernatant using the Dual-Luciferase Reporter System (Promega) according to the manufacturer's instructions.

[**0366**] WST-1 Proliferation Assay

[**0367**] U20S cells were seeded in a 96-well plate at 3×10^3 cells per well and cultured at 37° C. for 24 hours in DMEM plus 10% FCS. Transfections were performed in triplicate using 300 ng pcDNA4/HisMax expressing CLLD7, CLLD8, REN34 or ANGE and 0.21 μl FuGENE 6 transfection reagent mixed in 201 μl Optimem, as described in section a. The cells were cultured for 24, 48, or 72 hours before adding 10 μl per well of WST-1 cell proliferation reagent. Absorbance was measured at 450/690 nm after a one-hour incubation at 37° C.

[**0368**] Histone Methyltransferase Assay

[**0369**] 10 μg of SUV39H1(82412)-GST protein (1 mg/ml) was added to 5 μg biotinylated H3 peptide (first 21 amino acids of Histone H3 with a Biotin label on the CO_2H terminus from Upstate Biotechnology) in MAB (methylation activity buffer as described in Regulation of chromatin structure by site specific Histone H3 methyltransferases, Rea et al. Nature 406, 593-599, 2000. but using Tris-Ci pH 8.0) and water to a final volume of 100 μl, allowing for the

addition of 600nCi of ^{14}C s-adenosyl methionine as the radioactive substrate to initiate the reaction. This was incubated at 30° C. for 90 minutes. 30-50%1 of PBS washed Streptavidin Agarose beads (Sigma) were added at room temperature for 30 minutes with gentle agitation, to bind all biotinylated H3 peptide. Unbound reaction components were removed by washing beads in at least 10 volumes of PBS, spinning at low speed (~5000 rpm) and removing supernatant to aqueous waste, taking care not to remove any Agarose beads. The beads were then resuspended in 100 μl of PBS and added to 3 ml of scintillant fluid for counting of ^{14}C labelled methylated H3 peptide.

[0370] Screening Methods for Modulators of Methyltransferase Activity are disclosed in Patent WO 01/94621. The screening methods in this patent relate to modulators of murine SUV39H2-methyltransferase.

[0371] Screening for modulators of Suv39h2 Mtase activity (from WO 01/94621).

[0372] All steps are automated and the position of the different compounds being tested are registered on computer for later reference. Compounds being tested for modulating activity are aliquoted into 384 well plates in duplicate. 20-200 nmol of recombinant GST tagged human SUV39H2 in MAB buffer, is then added to the reaction. 20 nmol of branched peptide ([TARKST]$_4$-K$_2$-K-cys) which has been labelled with europium is then added, followed by 100 nmol of S-adenosyl methionine. This reaction is left at room temperature for 40 mins, then transferred onto a second plate to which the α-methH3-K9 antibody has been coated. This reaction is then left at room temperature for 40 mins to allow the antibody to bind methylated substrate. Following capture of methylated substrate, unbound non-methylated substrate is washed off in 50 mM tris pH 8.5. The europium label is then cleaved from the peptide in 50 μl pH 4.5 enhancement solution for 25 mins. The chelated europium molecules are then excited at 360 nm and the level of emitted fluorescence at 620 nm is then calculated using time-resolved fluorescence in a PolarStar plate reader. The results are then automatically graphed.

[0373] The level of fluorescence is directly related to the level of MTase activity. The effect of the different compounds on the MTase activity can be clearly seen on the graph when compared to control reactions with no compounds added or with no enzyme added. The principle of the screening method is as follows:

[0374] a) Suv39h2 is incubated with S-Adenosyl Methionine (SAM) and a chromogenically labelled unmodified peptide substrate (e.g. branched peptide [TARKST]4-K2-K-cys).

[0375] Following methylation of this substrate the substrate becomes an epitope for a Lys9-methyl specific antibody which has been immobilised on a microtiter plate. The level of bound peptide can then be quantified by the level of fluorescence of from the chromogenic label.

[0376] b) In the presence of a modulator (e.g. an inhibitor, I) the transfer of methyl groups by the MTase will be affected (decreased), this in turn will affect the amount of substrate captured by the immobilised antibody, which is quantified by the level of fluorescence. A compound with inhibitory effects will result in a decrease in fluorescence signal, whereas a compound with inhibitory effects will result in a decrease in fluorescent signal, whereas a compound with enhancing effects will result in an increase in fluorescent signal.

[0377] A truncated SUV39H1 (82-412), without the Chromo domain, was amplified by PCR from a Jurkat cDNA library and cloned into pGEX-2T. Histone methyl transferase activity of truncated protein was confirmed by radioactive assay.

[0378] Cloning of cDNAs into bacterial expression plasmids.

[0379] All genes, CLLD7, CLLD8 and ANGE, were successfully amplified from I.M.A.G.E. consortium clones and cloned into the appropriate vectors: pET28a, pGEx4T and pGEx6P.

[0380] Expression of Proteins in Mammalian Cells

[0381] Full-length cDNAs for CLLD7, CLLD8, and ANGE 1 were cloned into pcDNA4His/Max plasmid (Invitrogen) for use in over-expression studies in B cells. Whole cell lysates were prepared 24 hours post-transfection and protein expression was detected by western blotting using an anti-polyhistidine monoclonal antibody. The bands that were detected in the western blot migrated at approximately the expected sizes for the recombinant proteins; CLLD7, 58 kDa; CLLD8, 82 kDa; REN34, 22 kDa; ANGE, 37 kDa **(FIG. 11)**. This indicates that pcDNA4His/Max constructs are functional and express the genes of interest. Confirmation of these results was obtained by probing transfected Cos-7 cell lysates with an antibody to the Express Epitope (Invitrogen) for detection of ANGE and with specific antibodies to CLLD8 and ANGE.

[0382] IgE Reporter Assays

[0383] The human germline IgE promoter was cloned into the luciferase reporter vector pGL-2 Basic (Promega) in both forward and reverse orientations. pGL-2 Control, in which the luciferase gene is under the control of the SV40 promoter (Promega), was used as a positive control for luciferase activity. For normalisation of data due to differences in transfection efficiency, cells were co-transfected with pRL-TK (Promega).

[0384] The effect of over-expression of CLLD7 on IgE promoter activity was measured. Cells were co-transfected with the IgE reporter construct +/−pcDNA4-CLLD7. Luciferase activity was measured 24-hours post-transfection and IgE promoter activity expressed as a ratio of firefly luciferase to renilla luciferase activity.

[0385] Histone Methyltransferase Assays

[0386] Histone methyltransferases (HMT) are chromatin-modifying enzymes functioning mainly in the nucleus but could have a role in the cytoplasmic compartment. Therefore, both nuclear and cytoplasmic extracts were purified from transfected Cos7 cells, for use in the HMT assay. Human SUV39H1 (used as a positive control in the assay) is a Lysine specific Histone methyltransferase that specifically methylates lysine 9 of Histone H3. Methylation of H3 has been shown to recruit HPI protein resulting in formation of heterochromatin and may thus be involved in gene regulation/gene silencing (Rea et al.).

[0387] Nuclear extracts from Cos7 cells transfected with pcDNA CLLD8 were tested for HMT activity. In experiments transfected Cos cells showed increased HMT activity relative to the untransfected control (see **FIG. 12**).

EXAMPLE 6

[0388] Identification of SNPs that alter the function of a gene is of importance when the SNP is in a genomic region, which is known to be associated with the disease. This example describes one approach to functionally validate a SNP in a putative gene regulatory region such as a promoter or enhancer. Alterations in the normal function of these genomic regions influences the levels of transcription of the gene potentially affecting the levels of protein, the consequence of which leads to a disease state. The ability of proteins to bind to DNA with or without the SNP was demonstrated by electromobility shift assays (EMSAs). An alteration in the shifting pattern or intensity when comparing the wildtype and mutant DNA is indicative of differential binding of transcription factors. This differential effect potentially will result in differing expression patterns of the gene.

[0389] SNPs Tested

[0390] Four SNPs were identified by in-silico analysis using DB and Celera SNP databases which lay within predicted regions of the CLLD7, CLLD8 and ANGE gene promoters. The description of the SNP, oligonucleotide probes and potential transcription factor binding sites are shown in Table 7.

[0391] Labelling of Oligos

[0392] The DNA target was produced by 3' biotin end labelling of complementary oligos with or without the SNP then incubated together to allow annealing to form a double stranded target DNA.

[0393] EMSA

[0394] Optimisation of double stranded oligo probe and nuclear extract was performed as demonstrated in the table. After incubation at room temperature, the samples were run on 5% polyacrylamide gels, electroblotted onto Biodyne charged membrane and the position of the biotin labelled oligos identified using the LightShift chemiluminescent EMSA kit (Pierce) as described by the manufacturers instructions and visualised by exposure to film or CCD camera.

[0395] Results

[0396] NR1 Oligos, hcv9873896, **FIG. 13***a*

[0397] The results showed a difference in protein binding to the wild-type and the mutant oligos for NR1. There was an increase in the migration distance for the DNA-protein complex with the mutant oligo. This is possibly due to a decrease in affinity for the mutant oligo, the protein could be dissociating ot it is possible that a different protein from the nuclear extract could be binding to the DNA.

[0398] NR2 Oligos, clld7×1a295t, **FIG. 13***b*

[0399] There was protein-DNA complex formation for both the wild-type and the mutant oligos but there did not appear to be any difference between the two.

[0400] NR3 Oligos, clld7prom1a351g, **FIG. 13***c*

[0401] There was evidence of protein binding with the NR3 wild-type oligo but there was no binding detected with the mutant oligo.

[0402] NR4 Oligos, clld8×1a384g, **FIG. 13***d*

[0403] There was a very strong affinity for the protein by both the wild-type and the mutant oligos.

[0404] There did not appear to be any difference in the affinity between the wild-type and the mutant oligo.

EXAMPLE 6a

[0405] In order to identify the cellular localisation of the CLLD7, CLLD8 and ANGE proteins we generated mammalian expression constructs which when transfected into cells have the ability to express the recombinant protein. Using antibodies specific to an epitope tag fused in frame with the protein of interest allows for visualisation of the protein within the cell.

[0406] Expression Cloning

[0407] The open reading frames of CLLD7 (1590 bp), CLLD8 (2157 bp) and ANGE (993 bp) were generated by PCR using full-length EST clones and the PCR product cloned into pcDNA-His.Max-TOPO (Invitrogen).

[0408] The frame and integrity of the orf was verified by double stranded sequencing of the insert. The plasmid expression construct was grown in bulk and purified ready for transfection of COS-7 cells.

[0409] Transfection and Analysis

[0410] Each purified plasmid clone was then transfected into the COS-7 cells using Fugene transfection reagent (Roche). Prior to transfection the COS-7 cells were cultured on cover slips overnight at 0.5×10^5 per well in a 24 well plate. Cover slips were then fixed and labelled with Xpress antibody (Invitrogen) and detected using the anti-mouse Cy3 antibody. Images were obtained by immunofluorescence microscopy (**FIG. 14***a, b, c*).

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1. An isolated or recombinant nucleic acid sequence comprising an ANGE mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

2. An isolated or recombinant nucleic acid sequence comprising a CLLD8 mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

3. An isolated or recombinant nucleic acid sequence comprising a CLLD7 mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

4. An isolated or recombinant nucleic acid sequence comprising an ANGE CLLD8 hybrid mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

5. An isolated or recombinant nucleic acid sequence comprising an ANGE CLLD7 hybrid mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

6. An isolated or recombinant nucleic acid sequence comprising a CLLD7-CLLD8 hybrid mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

7. An isolated or recombinant nucleic acid sequence comprising an ANGE-CLLD8-CLLD7 hybrid mRNA sequence or a sequence complementary or substantially homologous thereto, or a fragment thereof.

8-86. (canceled)

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