SeqList_PCT_FINAL
SEQUENCE LISTING

<110> ALNYLAM PHARMACEUTICALS, INC.

<120> SERPINA1 iRNA COMPOSITIONS AND METHODS OF USE THEREOF

<130> 121301-07820

<140>
<141>

<150> 62/561,514
<151> 2017-09-21

<150> 62/549,099
<151> 2017-08-23

<150> 62/548,589
<151> 2017-08-22

<150> 62/425,907
<151> 2016-11-23

<160> 420

<170> PatentIn version 3.5

<210> 1
<211> 3220
<212> DNA
<213> Homo sapiens

<400> 1
acaatgactc ctttcggtaa gtgcagtgga agctgtacac tgcccaggca aagcgtccgg 60

gcagcgtagg cgggcgactc agatcccagc cagtggactt agcccctgtt tgctcctccg 120

ataactgggg tgaccttggt taatattcac cagcagcctc ccccgttgcc cctctggatc 180

cactgcttaa atacggacga ggacagggcc ctgtctcctc agcttcaggc accaccactg 240

acctgggaca gtgaatcgac aatgccgtct tctgtctcgt ggggcatcct cctgctggca 300

ggcctgtgct gcctggtccc tgtctccctg gctgaggatc ccagggaga tgctgcccag 360

aagacagata catcccacca tgatcaggat cacccaacct tcaacaagat caccccaac 420

ctggctgagt tcgccttcag cctataccgc cagctggcac accagtccaa cagcaccaat 480

atcttcttct ccccagtgag catcgctaca gcctttgcaa tgctctccct ggggaccaag 540

gctgacactc acgatgaaat cctggagggc ctgaatttca acctcacgga gattccggag 600

gctcagatcc atgaaggctt ccaggaactc ctccgtaccc tcaaccagcc agacagccag 660

ctccagctga ccaccggcaa tggcctgttc ctcagcgagg gcctgaagct agtggataag 720

tttttggagg atgttaaaaa gttgtaccac tcagaagcct tcactgtcaa cttcggggac 780

accgaagagg ccaagaaaca gatcaacgat tacgtggaga agggtactca agggaaaatt 840

gtggatttgg tcaaggagct tgacagagac acagtttttg ctctggtgaa ttacatcttc 900

tttaaaggca aatgggagag acccctttgaa gtcaaggaca ccgaggaaga ggacttccac 960

gtggaccagg tgaccaccgt gaaggtgcct atgatgaagc gtttaggcat gtttaacatc 1020

cagcactgta agaagctgtc cagctgggtg ctgctgatga aatacctggg caatgccacc 1080

gccatcttct tcctgcctga tgaggggaaa ctacagcacc tggaaaatga actcacccac 1140

gatatcatca ccaagttcct ggaaaatgaa gacagaaggt ctgccagctt acatttaccc 1200

aaactgtcca ttactggaac ctatgatctg aagagcgtcc tgggtcaact gggcatcact 1260

aaggtcttca gcaatggggc tgacctctcc ggggtcacag aggaggcacc cctgaagctc 1320

tccaaggccg tgcataaggc tgtgctgacc atcgacgaga aagggactga agctgctggg 1380

gccatgtttt tagaggccat acccatgtct atccccccg aggtcaagtt caacaaaccc 1440

tttgtcttct taatgattga acaaaatacc aagtctcccc tcttcatggg aaaagtggtg 1500

aatcccaccc aaaaataact gcctctcgct cctcaacccc tcccctccat ccctggcccc 1560

ctccctggat gacattaaag aagggttgag ctggtccctg cctgcatgtg actgtaaatc 1620

cctcccatgt tttctctgag tctccctttg cctgctgagg ctgtatgtgg gctccaggta 1680

acagtgctgt cttcgggccc cctgaactgt gttcatggag catctggctg ggtaggcaca 1740

tgctgggctt gaatccaggg gggactgaat cctcagctta cggacctggg cccatctgtt 1800

tctggagggc tccagtcttc cttgtcctgt cttggagtcc ccaagaagga atcacagggg 1860

aggaaccaga taccagccat gaccccaggc tccaccaagc atcttcatgt ccccctgctc 1920

atcccccact ccccccccacc cagagttgct catcctgcca gggctggctg tgcccacccc 1980

aaggctgccc tcctgggggc cccagaactg cctgatcgtg ccgtggccca gttttgtggc 2040

atctgcagca acacaagaga gaggacaatg tcctcctctt gacccgctgt cacctaacca 2100

gactcgggcc ctgcacctct caggcacttc tggaaaatga ctgaggcaga ttcttcctga 2160

agcccattct ccatggggca acaaggacac ctattctgtc cttgtccttc catcgctgcc 2220

ccagaaagcc tcacatatct ccgtttagaa tcaggtccct tctccccaga tgaagaggag 2280

ggtctctgct ttgttttctc tatctcctcc tcagacttga ccaggcccag caggccccag 2340

aagaccatta ccctatatcc cttctcctcc ctagtcacat ggccataggc ctgctgatgg 2400

ctcaggaagg ccattgcaag gactcctcag ctatgggaga ggaagcacat cacccattga 2460

cccccgcaac ccctcccttt cctcctctga gtcccgactg gggccacatg cagcctgact 2520

tctttgtgcc tgttgctgtc cctgcagtct tcagagggcc accgcagctc cagtgccacg 2580

gcaggaggct gttcctgaat agcccctgtg gtaagggcca ggagagtcct tccatcctcc 2640

aaggccctgc taaaggacac agcagccagg aagtcccctg ggcccctagc tgaaggacag 2700

cctgctccct ccgtctctac caggaatggc cttgtcctat ggaaggcact gccccatccc 2760

aaactaatct aggaatcact gtctaaccac tcactgtcat gaatgtgtac ttaaaggatg 2820

aggttgagtc ataccaaata gtgatttcga tagttcaaaa tggtgaaatt agcaattcta 2880

catgattcag tctaatcaat ggataccgac tgtttcccac acaagtctcc tgttctctta 2940

agcttactca ctgacagcct ttcactctcc acaaatacat taaagatatg gccatcacca 3000

agcccctag gatgacacca gacctgagag tctgaagacc tggatccaag ttctgacttt 3060

tccccctgac agctgtgtga ccttcgtgaa gtcgccaaac ctctctgagc cccagtcatt 3120

gctagtaaga cctgcctttg agttggtatg atgttcaagt tagataacaa aatgtttata 3180

cccattagaa cagagaataa atagaactac atttcttgca 3220

<210> 2
<211> 3199
<212> DNA
<213> Homo sapiens

<400> 2
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaaggaca 240

atgccgtctt ctgtctcgtg gggcatcctc ctgctggcag gcctgtgctg cctggtccct 300

gtctccctgg ctgaggatcc ccagggagat gctgcccaga agacagatac atcccaccat 360

gatcaggatc acccaacctt caacaagatc acccccaacc tggctgagtt cgccttcagc 420

ctataccgcc agctggcaca ccagtccaac agcaccaata tcttcttctc cccagtgagc 480

atcgctacag cctttgcaat gctctccctg gggaccaagg ctgacactca cgatgaaatc 540

ctggagggcc tgaatttcaa cctcacggag attccggagg ctcagatcca tgaaggcttc 600

caggaactcc tccgtaccct caaccagcca gacagccagc tccagctgac caccggcaat 660

ggcctgttcc tcagcgaggg cctgaagcta gtggataagt ttttggagga tgttaaaaag 720

ttgtaccact cagaagcctt cactgtcaac ttcggggaca ccgaagaggc caagaaacag 780

atcaacgatt acgtggagaa gggtactcaa gggaaaattg tggatttggt caaggagctt 840

gacagagaca cagtttttgc tctggtgaat tacatcttct ttaaaggcaa atgggagaga 900

ccctttgaag tcaaggacac cgaggaagag gacttccacg tggaccaggt gaccaccgtg 960

aaggtgccta tgatgaagcg tttaggcatg tttaacatcc agcactgtaa gaagctgtcc 1020

agctgggtgc tgctgatgaa atacctgggc aatgccaccg ccatcttctt cctgcctgat 1080

gaggggaaac tacagcacct ggaaaatgaa ctcacccacg atatcatcac caagttcctg 1140

gaaaatgaag acagaaggtc tgccagctta catttaccca aactgtccat tactggaacc 1200

tatgatctga agagcgtcct gggtcaactg ggcatcacta aggtcttcag caatggggct 1260

gacctctccg gggtcacaga ggaggcaccc ctgaagctct ccaaggccgt gcataaggct 1320

gtgctgacca tcgacgagaa agggactgaa gctgctgggg ccatgttttt agaggccata 1380

cccatgtcta tccccccga ggtcaagttc aacaaaccct ttgtcttctt aatgattgaa 1440

caaaatacca agtctcccct cttcatggga aaagtggtga atcccaccca aaaataactg 1500

cctctcgctc ctcaacccct cccctccatc cctggccccc tccctggatg acattaaaga 1560

agggttgagc tggtccctgc ctgcatgtga ctgtaaatcc ctcccatgtt ttctctgagt 1620

ctccctttgc ctgctgaggc tgtatgtggg ctccaggtaa cagtgctgtc ttcgggcccc 1680

ctgaactgtg ttcatggagc atctggctgg gtaggcacat gctgggcttg aatccagggg 1740

ggactgaatc ctcagcttac ggacctgggc ccatctgttt ctggagggct ccagtcttcc 1800

ttgtcctgtc ttggagtccc caagaaggaa tcacagggga ggaaccagat accagccatg 1860

accccaggct ccaccaagca tcttcatgtc cccctgctca tcccccactc ccccccaccc 1920

agagttgctc atcctgccag ggctggctgt gcccacccca aggctgccct cctgggggcc 1980

ccagaactgc ctgatcgtgc cgtggcccag ttttgtggca tctgcagcaa cacaagagag 2040

aggacaatgt cctcctcttg acccgctgtc acctaaccag actcgggccc tgcacctctc 2100

aggcacttct ggaaaatgac tgaggcagat tcttcctgaa gcccattctc catggggcaa 2160

caaggacacc tattctgtcc ttgtccttcc atcgctgccc cagaaagcct cacatatctc 2220

cgtttagaat caggtccctt ctccccagat gaagaggagg gtctctgctt tgttttctct 2280

atctcctcct cagacttgac caggcccagc aggccccaga agaccattac cctatatccc 2340

ttctcctccc tagtcacatg gccataggcc tgctgatggc tcaggaaggc cattgcaagg 2400

actcctcagc tatgggagag gaagcacatc acccattgac ccccgcaacc cctccctttc 2460

ctcctctgag tcccgactgg ggccacatgc agcctgactt ctttgtgcct gttgctgtcc 2520

ctgcagtctt cagagggcca ccgcagctcc agtgccacgg caggaggctg ttcctgaata 2580

gcccctgtgg taagggccag gagagtcctt ccatcctcca aggccctgct aaaggacaca 2640

gcagccagga agtcccctgg gcccctagct gaaggacagc ctgctccctc cgtctctacc 2700

aggaatggcc ttgtcctatg gaaggcactg ccccatccca aactaatcta ggaatcactg 2760

tctaaccact cactgtcatg aatgtgtact taaaggatga ggttgagtca taccaaatag 2820

tgatttcgat agttcaaaat ggtgaaatta gcaattctac atgattcagt ctaatcaatg 2880

gataccgact gtttcccaca caagtctcct gttctcttaa gcttactcac tgacagcctt 2940

tcactctcca caaatacatt aaagatatgg ccatcaccaa gccccctagg atgacaccag 3000

acctgagagt ctgaagacct ggatccaagt tctgactttt ccccctgaca gctgtgtgac 3060

cttcgtgaag tcgccaaacc tctctgagcc ccagtcattg ctagtaagac ctgcctttga 3120

gttggtatga tgttcaagtt agataacaaa atgtttatac ccattagaac agagaataaa 3180

tagaactaca tttcttgca 3199

<210> 3
<211> 3513

<212> DNA
<213> Homo sapiens

<400> 3
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaaggggcg 240

gcagtaagtc ttcagcatca ggcattttgg ggtgactcag taaatggtag atcttgctac 300

cagtggaaca gccactaagg attctgcagt gagagcagag ggccagctaa gtggtactct 360

cccagagact gtctgactca cgccaccccc tccaccttgg acacaggacg ctgtggtttc 420

tgagccaggt acaatgactc ctttcgcagc ctcccccgtt gcccctctgg atccactgct 480

taaatacgga cgaggacagg gccctgtctc ctcagcttca ggcaccacca ctgacctggg 540

acagtgaatc gacaatgccg tcttctgtct cgtggggcat cctcctgctg gcaggcctgt 600

gctgcctggt ccctgtctcc ctggctgagg atccccaggg agatgctgcc cagaagacag 660

atacatccca ccatgatcag gatcacccaa ccttcaacaa gatcaccccc aacctggctg 720

agttcgcctt cagcctatac cgccagctgg cacaccagtc caacagcacc aatatcttct 780

tctccccagt gagcatcgct acagcctttg caatgctctc cctggggacc aaggctgaca 840

ctcacgatga aatcctggag ggcctgaatt tcaacctcac ggagattccg gaggctcaga 900

tccatgaagg cttccaggaa ctcctccgta ccctcaacca gccagacagc cagctccagc 960

tgaccaccgg caatggcctg ttcctcagcg agggcctgaa gctagtggat aagtttttgg 1020

aggatgttaa aaagttgtac cactcagaag ccttcactgt caacttcggg gacaccgaag 1080

aggccaagaa acagatcaac gattacgtgg agaagggtac tcaagggaaa attgtggatt 1140

tggtcaagga gcttgacaga gacacagttt ttgctctggt gaattacatc ttctttaaag 1200

gcaaatggga gagacccttt gaagtcaagg acaccgagga agaggacttc cacgtggacc 1260

aggtgaccac cgtgaaggtg cctatgatga agcgtttagg catgtttaac atccagcact 1320

gtaagaagct gtccagctgg gtgctgctga tgaaatacct gggcaatgcc accgccatct 1380

tcttcctgcc tgatgagggg aaactacagc acctggaaaa tgaactcacc cacgatatca 1440

tcaccaagtt cctggaaaat gaagacagaa ggtctgccag cttacattta cccaaactgt 1500

ccattactgg aacctatgat ctgaagagcg tcctgggtca actgggcatc actaaggtct 1560

tcagcaatgg ggctgacctc tccggggtca cagaggaggc acccctgaag ctctccaagg 1620

ccgtgcataa ggctgtgctg accatcgacg agaaagggac tgaagctgct ggggccatgt 1680

ttttagaggc catacccatg tctatccccc ccgaggtcaa gttcaacaaa ccctttgtct 1740

tcttaatgat tgaacaaaat accaagtctc ccctcttcat gggaaaagtg gtgaatccca 1800

cccaaaaata actgcctctc gctcctcaac ccctcccctc catccctggc cccctccctg 1860

gatgacatta aagaagggtt gagctggtcc ctgcctgcat gtgactgtaa atccctccca 1920

tgttttctct gagtctccct ttgcctgctg aggctgtatg tgggctccag gtaacagtgc 1980

tgtcttcggg ccccctgaac tgtgttcatg gagcatctgg ctgggtaggc acatgctggg 2040

cttgaatcca gggggggactg aatcctcagc ttacggacct gggcccatct gtttctggag 2100

ggctccagtc ttccttgtcc tgtcttggag tccccaagaa ggaatcacag gggaggaacc 2160

agataccagc catgacccca ggctccacca agcatcttca tgtccccctg ctcatccccc 2220

actccccccc acccagagtt gctcatcctg ccagggctgg ctgtgcccac cccaaggctg 2280

ccctcctggg ggccccagaa ctgcctgatc gtgccgtggc ccagttttgt ggcatctgca 2340

gcaacacaag agagaggaca atgtcctcct cttgacccgc tgtcacctaa ccagactcgg 2400

gccctgcacc tctcaggcac ttctggaaaa tgactgaggc agattcttcc tgaagcccat 2460

tctccatggg gcaacaagga cacctattct gtccttgtcc ttccatcgct gccccagaaa 2520

gcctcacata tctccgttta gaatcaggtc ccttctcccc agatgaagag gagggtctct 2580

gctttgtttt ctctatctcc tcctcagact tgaccaggcc cagcaggccc cagaagacca 2640

ttaccctata tcccttctcc tccctagtca catggccata ggcctgctga tggctcagga 2700

aggccattgc aaggactcct cagctatggg agaggaagca catcacccat tgacccccgc 2760

aacccctccc tttcctcctc tgagtcccga ctggggccac atgcagcctg acttctttgt 2820

gcctgttgct gtccctgcag tcttcagagg gccaccgcag ctccagtgcc acggcaggag 2880

gctgttcctg aatagcccct gtggtaaggg ccaggagagt ccttccatcc tccaaggccc 2940

tgctaaagga cacagcagcc aggaagtccc ctgggcccct agctgaagga cagcctgctc 3000

cctccgtctc taccaggaat ggccttgtcc tatggaaggc actgccccat cccaaactaa 3060

tctaggaatc actgtctaac cactcactgt catgaatgtg tacttaaagg atgaggttga 3120

gtcataccaa atagtgattt cgatagttca aaatggtgaa attagcaatt ctacatgatt 3180

cagtctaatc aatggatacc gactgtttcc cacacaagtc tcctgttctc ttaagcttac 3240

tcactgacag cctttcactc tccacaaata cattaaagat atggccatca ccaagccccc 3300

taggatgaca ccagacctga gagtctgaag acctggatcc aagttctgac ttttcccct 3360

gacagctgtg tgaccttcgt gaagtcgcca aacctctctg agccccagtc attgctagta 3420

agacctgcct ttgagttggt atgatgttca agttagataa caaaatgttt atacccatta 3480

gaacagagaa taaatagaac tacatttctt gca 3513

<210> 4
<211> 3236
<212> DNA
<213> Homo sapiens

<400> 4
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaaggtgg 240

gacattgctg ctgctgctca ctcagttcca caggacaatg ccgtcttctg tctcgtgggg 300

catcctcctg ctggcaggcc tgtgctgcct ggtccctgtc tccctggctg aggatcccca 360

gggagatgct gcccagaaga cagatacatc ccaccatgat caggatcacc caaccttcaa 420

caagatcacc cccaacctgg ctgagttcgc cttcagccta taccgccagc tggcacacca 480

gtccaacagc accaatatct tcttctcccc agtgagcatc gctacagcct ttgcaatgct 540

ctccctgggg accaaggctg acactcacga tgaaatcctg gagggcctga atttcaacct 600

cacggagatt ccggaggctc agatccatga aggcttccag gaactcctcc gtaccctcaa 660

ccagccagac agccagctcc agctgaccac cggcaatggc ctgttcctca gcgagggcct 720

gaagctagtg gataagtttt tggaggatgt taaaaagttg taccactcag aagccttcac 780

tgtcaacttc ggggacaccg aagaggccaa gaaacagatc aacgattacg tggagaaggg 840

tactcaaggg aaaattgtgg atttggtcaa ggagcttgac agagacacag tttttgctct 900

ggtgaattac atcttcttta aaggcaaatg ggagagaccc tttgaagtca aggacaccga 960

ggaagaggac ttccacgtgg accaggtgac caccgtgaag gtgcctatga tgaagcgttt 1020

aggcatgttt aacatccagc actgtaagaa gctgtccagc tgggtgctgc tgatgaaata 1080

cctgggcaat gccaccgcca tcttcttcct gcctgatgag gggaaactac agcacctgga 1140

aaatgaactc acccacgata tcatcaccaa gttcctggaa aatgaagaca gaaggtctgc 1200

cagcttacat ttacccaaac tgtccattac tggaacctat gatctgaaga gcgtcctggg 1260

tcaactgggc atcactaagg tcttcagcaa tggggctgac ctctccgggg tcacagagga 1320

ggcacccctg aagctctcca aggccgtgca taaggctgtg ctgaccatcg acgagaaagg 1380

gactgaagct gctggggcca tgtttttaga ggccataccc atgtctatcc cccccgaggt 1440

caagttcaac aaacccttttg tcttcttaat gattgaacaa aataccaagt ctcccctctt 1500

catgggaaaa gtggtgaatc ccacccaaaa ataactgcct ctcgctcctc aacccctccc 1560

ctccatccct ggcccccctcc ctggatgaca ttaaagaagg gttgagctgg tccctgcctg 1620

catgtgactg taaatccctc ccatgttttc tctgagtctc cctttgcctg ctgaggctgt 1680

atgtgggctc caggtaacag tgctgtcttc gggccccctg aactgtgttc atggagcatc 1740

tggctgggta ggcacatgct gggcttgaat ccaggggggа ctgaatcctc agcttacgga 1800

cctgggccca tctgtttctg gagggctcca gtcttccttg tcctgtcttg gagtccccaa 1860

gaaggaatca caggggagga accagatacc agccatgacc ccaggctcca ccaagcatct 1920

tcatgtcccc ctgctcatcc cccactcccc cccacccaga gttgctcatc ctgccagggc 1980

tggctgtgcc caccccaagg ctgccctcct gggggcccca gaactgcctg atcgtgccgt 2040

ggcccagttt tgtggcatct gcagcaacac aagagagagg acaatgtcct cctcttgacc 2100

cgctgtcacc taaccagact cgggccctgc acctctcagg cacttctgga aaatgactga 2160

ggcagattct tcctgaagcc cattctccat ggggcaacaa ggacacctat tctgtccttg 2220

tccttccatc gctgccccag aaagcctcac atatctccgt ttagaatcag gtcccttctc 2280

cccagatgaa gaggagggtc tctgctttgt tttctctatc tcctcctcag acttgaccag 2340

gcccagcagg ccccagaaga ccattaccct atatcccttc tcctccctag tcacatggcc 2400

ataggcctgc tgatggctca ggaaggccat tgcaaggact cctcagctat gggagaggaa 2460

gcacatcacc cattgacccc cgcaacccct ccctttcctc ctctgagtcc cgactggggc 2520

cacatgcagc ctgacttctt tgtgcctgtt gctgtccctg cagtcttcag agggccaccg 2580

cagctccagt gccacggcag gaggctgttc ctgaatagcc cctgtggtaa gggccaggag 2640

agtccttcca tcctccaagg ccctgctaaa ggacacagca gccaggaagt cccctgggcc 2700

cctagctgaa ggacagcctg ctccctccgt ctctaccagg aatggccttg tcctatggaa 2760

ggcactgccc catcccaaac taatctagga atcactgtct aaccactcac tgtcatgaat 2820

gtgtacttaa aggatgaggt tgagtcatac caaatagtga tttcgatagt tcaaaatggt 2880

gaaattagca attctacatg attcagtcta atcaatggat accgactgtt tcccacacaa 2940

gtctcctgtt ctcttaagct tactcactga cagcctttca ctctccacaa atacattaaa 3000

gatatggcca tcaccaagcc ccctaggatg acaccagacc tgagagtctg aagacctgga 3060

tccaagttct gacttttccc cctgacagct gtgtgacctt cgtgaagtcg ccaaacctct 3120

ctgagcccca gtcattgcta gtaagacctg cctttgagtt ggtatgatgt tcaagttaga 3180

taacaaaatg tttataccca ttagaacaga gaataaatag aactacattt cttgca 3236

<210> 5
<211> 3532
<212> DNA
<213> Homo sapiens

<400> 5
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaaggtgg 240

gacattgctg ctgctgctca ctcagttcca cagggcggca gtaagtcttc agcatcaggc 300

attttggggt gactcagtaa atggtagatc ttgctaccag tggaacagcc actaaggatt 360

ctgcagtgag agcagagggc cagctaagtg gtactctccc agagactgtc tgactcacgc 420

cacccctcc accttggaca caggacgctg tggtttctga gccagcagcc tcccccgttg 480

cccctctgga tccactgctt aaatacggac gaggacaggg ccctgtctcc tcagcttcag 540

gcaccaccac tgacctggga cagtgaatcg acaatgccgt cttctgtctc gtggggcatc 600

ctcctgctgg caggcctgtg ctgcctggtc cctgtctccc tggctgagga tccccaggga 660

gatgctgccc agaagacaga tacatcccac catgatcagg atcacccaac cttcaacaag 720

atcaccccca acctggctga gttcgccttc agcctatacc gccagctggc acaccagtcc 780

aacagcacca atatcttctt ctccccagtg agcatcgcta cagcctttgc aatgctctcc 840

ctggggacca aggctgacac tcacgatgaa atcctggagg gcctgaattt caacctcacg 900

gagattccgg aggctcagat ccatgaaggc ttccaggaac tcctccgtac cctcaaccag 960

ccagacagcc agctccagct gaccaccggc aatggcctgt tcctcagcga gggcctgaag 1020

ctagtggata agtttttgga ggatgttaaa aagttgtacc actcagaagc cttcactgtc 1080

aacttcgggg acaccgaaga ggccaagaaa cagatcaacg attacgtgga gaagggtact 1140

caagggaaaa ttgtggattt ggtcaaggag cttgacagag acacagtttt tgctctggtg 1200

aattacatct tctttaaagg caaatgggag agacccttg aagtcaagga caccgaggaa 1260

gaggacttcc acgtggacca ggtgaccacc gtgaaggtgc ctatgatgaa gcgtttaggc 1320

atgtttaaca tccagcactg taagaagctg tccagctggg tgctgctgat gaaatacctg 1380

ggcaatgcca ccgccatctt cttcctgcct gatgagggga aactacagca cctggaaaat 1440

gaactcaccc acgatatcat caccaagttc ctggaaaatg aagacagaag gtctgccagc 1500

ttacatttac ccaaactgtc cattactgga acctatgatc tgaagagcgt cctgggtcaa 1560

ctgggcatca ctaaggtctt cagcaatggg gctgacctct ccggggtcac agaggaggca 1620

cccctgaagc tctccaaggc cgtgcataag gctgtgctga ccatcgacga gaaagggact 1680

gaagctgctg gggccatgtt tttagaggcc atacccatgt ctatcccccc cgaggtcaag 1740

ttcaacaaac cctttgtctt cttaatgatt gaacaaaata ccaagtctcc cctcttcatg 1800

ggaaaagtgg tgaatcccac ccaaaaataa ctgcctctcg ctcctcaacc cctcccctcc 1860

atccctggcc ccctccctgg atgacattaa agaagggttg agctggtccc tgcctgcatg 1920

tgactgtaaa tccctcccat gttttctctg agtctccctt tgcctgctga ggctgtatgt 1980

gggctccagg taacagtgct gtcttcgggc cccctgaact gtgttcatgg agcatctggc 2040

tgggtaggca catgctgggc ttgaatccag gggggactga atcctcagct tacggacctg 2100

ggcccatctg tttctggagg gctccagtct tccttgtcct gtcttggagt ccccaagaag 2160

gaatcacagg ggaggaacca gataccagcc atgaccccag gctccaccaa gcatcttcat 2220

gtccccctgc tcatccccca ctccccccca cccagagttg ctcatcctgc cagggctggc 2280

tgtgcccacc ccaaggctgc cctcctgggg gccccagaac tgcctgatcg tgccgtggcc 2340

cagttttgtg gcatctgcag caacacaaga gagaggacaa tgtcctcctc ttgacccgct 2400

gtcacctaac cagactcggg ccctgcacct ctcaggcact tctggaaaat gactgaggca 2460

gattcttcct gaagcccatt ctccatgggg caacaaggac acctattctg tccttgtcct 2520

tccatcgctg ccccagaaag cctcacatat ctccgtttag aatcaggtcc cttctcccca 2580

gatgaagagg agggtctctg ctttgttttc tctatctcct cctcagactt gaccaggccc 2640

agcaggcccc agaagaccat taccctatat cccttctcct ccctagtcac atggccatag 2700

gcctgctgat ggctcaggaa ggccattgca aggactcctc agctatggga gaggaagcac 2760

atcacccatt gacccccgca acccctccct ttcctcctct gagtcccgac tggggccaca 2820

tgcagcctga cttctttgtg cctgttgctg tccctgcagt cttcagaggg ccaccgcagc 2880

tccagtgcca cggcaggagg ctgttcctga atagcccctg tggtaagggc caggagagtc 2940

cttccatcct ccaaggccct gctaaaggac acagcagcca ggaagtcccc tgggccccta 3000

gctgaaggac agcctgctcc ctccgtctct accaggaatg gccttgtcct atggaaggca 3060

ctgccccatc ccaaactaat ctaggaatca ctgtctaacc actcactgtc atgaatgtgt 3120

acttaaagga tgaggttgag tcataccaaa tagtgatttc gatagttcaa aatggtgaaa 3180

ttagcaattc tacatgattc agtctaatca atggataccg actgtttccc acacaagtct 3240

cctgttctct taagcttact cactgacagc ctttcactct ccacaaatac attaaagata 3300

tggccatcac caagcccccc aggatgacac cagacctgag agtctgaaga cctggatcca 3360

agttctgact tttccccctg acagctgtgt gaccttcgtg aagtcgccaa acctctctga 3420

gccccagtca ttgctagtaa gacctgcctt tgagttggta tgatgttcaa gttagataac 3480

aaaatgttta tacccattag aacagagaat aaatagaact acatttcttg ca 3532

<210> 6

<211> 3340
<212> DNA
<213> Homo sapiens

<400> 6
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaaggtgg 240

gacattgctg ctgctgctca ctcagttcca cagcagcctc ccccgttgcc cctctggatc 300

cactgcttaa atacggacga ggacagggcc ctgtctcctc agcttcaggc accaccactg 360

acctgggaca gtgaatcgac aatgccgtct tctgtctcgt ggggcatcct cctgctggca 420

ggcctgtgct gcctggtccc tgtctccctg gctgaggatc cccagggaga tgctgcccag 480

aagacagata catcccacca tgatcaggat cacccaacct tcaacaagat cacccccaac 540

ctggctgagt tcgccttcag cctataccgc cagctggcac accagtccaa cagcaccaat 600

atcttcttct ccccagtgag catcgctaca gcctttgcaa tgctctccct ggggaccaag 660

gctgacactc acgatgaaat cctggagggc ctgaatttca acctcacgga gattccggag 720

gctcagatcc atgaaggctt ccaggaactc ctccgtaccc tcaaccagcc agacagccag 780

ctccagctga ccaccggcaa tggcctgttc ctcagcgagg gcctgaagct agtggataag 840

tttttggagg atgttaaaaa gttgtaccac tcagaagcct tcactgtcaa cttcggggac 900

accgaagagg ccaagaaaca gatcaacgat tacgtggaga agggtactca agggaaaatt 960

gtggatttgg tcaaggagct tgacagagac acagtttttg ctctggtgaa ttacatcttc 1020

tttaaaggca aatgggagag acccttttgaa gtcaaggaca ccgaggaaga ggacttccac 1080

gtggaccagg tgaccaccgt gaaggtgcct atgatgaagc gtttaggcat gtttaacatc 1140

cagcactgta agaagctgtc cagctgggtg ctgctgatga aatacctggg caatgccacc 1200

gccatcttct tcctgcctga tgaggggaaa ctacagcacc tggaaaatga actcacccac 1260

gatatcatca ccaagttcct ggaaaatgaa gacagaaggt ctgccagctt acatttaccc 1320

aaactgtcca ttactggaac ctatgatctg aagagcgtcc tgggtcaact gggcatcact 1380

aaggtcttca gcaatggggc tgacctctcc ggggtcacag aggaggcacc cctgaagctc 1440

tccaaggccg tgcataaggc tgtgctgacc atcgacgaga aagggactga agctgctggg 1500

gccatgtttt tagaggccat acccatgtct atccccccg aggtcaagtt caacaaaccc 1560

tttgtcttct taatgattga acaaaatacc aagtctcccc tcttcatggg aaaagtggtg 1620

aatcccaccc aaaaataact gcctctcgct cctcaacccc tcccctccat ccctggcccc 1680

ctccctggat gacattaaag aagggttgag ctggtccctg cctgcatgtg actgtaaatc 1740

cctcccatgt tttctctgag tctccctttg cctgctgagg ctgtatgtgg gctccaggta 1800

acagtgctgt cttcgggccc cctgaactgt gttcatggag catctggctg ggtaggcaca 1860

tgctgggctt gaatccaggg gggactgaat cctcagctta cggacctggg cccatctgtt 1920

tctggagggc tccagtcttc cttgtcctgt cttggagtcc ccaagaagga atcacagggg 1980

aggaaccaga taccagccat gaccccaggc tccaccaagc atcttcatgt ccccctgctc 2040

atcccccact ccccccccacc cagagttgct catcctgcca gggctggctg tgcccacccc 2100

aaggctgccc tcctgggggc cccagaactg cctgatcgtg ccgtggccca gttttgtggc 2160

atctgcagca acacaagaga gaggacaatg tcctcctctt gacccgctgt cacctaacca 2220

gactcgggcc ctgcacctct caggcacttc tggaaaatga ctgaggcaga ttcttcctga 2280

agcccattct ccatggggca acaaggacac ctattctgtc cttgtccttc catcgctgcc 2340

ccagaaagcc tcacatatct ccgtttagaa tcaggtccct tctccccaga tgaagaggag 2400

ggtctctgct ttgttttctc tatctcctcc tcagacttga ccaggcccag caggccccag 2460

aagaccatta ccctatatcc cttctcctcc ctagtcacat ggccataggc ctgctgatgg 2520

ctcaggaagg ccattgcaag gactcctcag ctatgggaga ggaagcacat cacccattga 2580

cccccgcaac ccctcccttt cctcctctga gtcccgactg gggccacatg cagcctgact 2640

tctttgtgcc tgttgctgtc cctgcagtct tcagagggcc accgcagctc cagtgccacg 2700

gcaggaggct gttcctgaat agcccctgtg gtaagggcca ggagagtcct tccatcctcc 2760

aaggccctgc taaaggacac agcagccagg aagtcccctg ggcccctagc tgaaggacag 2820

cctgctccct ccgtctctac caggaatggc cttgtcctat ggaaggcact gccccatccc 2880

aaactaatct aggaatcact gtctaaccac tcactgtcat gaatgtgtac ttaaaggatg 2940

aggttgagtc ataccaaata gtgatttcga tagttcaaaa tggtgaaatt agcaattcta 3000

catgattcag tctaatcaat ggataccgac tgtttcccac acaagtctcc tgttctctta 3060

agcttactca ctgacagcct ttcactctcc acaaatacat taaagatatg gccatcacca 3120

agcccctag gatgacacca gacctgagag tctgaagacc tggatccaag ttctgacttt 3180

tccccctgac agctgtgtga ccttcgtgaa gtcgccaaac ctctctgagc cccagtcatt 3240

gctagtaaga cctgcctttg agttggtatg atgttcaagt tagataacaa aatgtttata 3300

cccattagaa cagagaataa atagaactac atttcttgca 3340

<210> 7
<211> 3495
<212> DNA
<213> Homo sapiens

<400> 7
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaagggcg 240

gcagtaagtc ttcagcatca ggcattttgg ggtgactcag taaatggtag atcttgctac 300

cagtggaaca gccactaagg attctgcagt gagagcagag ggccagctaa gtggtactct 360

cccagagact gtctgactca cgccaccccc tccaccttgg acacaggacg ctgtggtttc 420

tgagccagca gcctcccccg ttgcccctct ggatccactg cttaaatacg gacgaggaca 480

gggccctgtc tcctcagctt caggcaccac cactgacctg ggacagtgaa tcgacaatgc 540

cgtcttctgt ctcgtggggc atcctcctgc tggcaggcct gtgctgcctg gtccctgtct 600

ccctggctga ggatccccag ggagatgctg cccagaagac agatacatcc caccatgatc 660

aggatcaccc aaccttcaac aagatcaccc ccaacctggc tgagttcgcc ttcagcctat 720

accgccagct ggcacaccag tccaacagca ccaatatctt cttctcccca gtgagcatcg 780

ctacagcctt tgcaatgctc tccctgggga ccaaggctga cactcacgat gaaatcctgg 840

agggcctgaa tttcaacctc acggagattc cggaggctca gatccatgaa ggcttccagg 900

aactcctccg taccctcaac cagccagaca gccagctcca gctgaccacc ggcaatggcc 960

tgttcctcag cgagggcctg aagctagtgg ataagttttt ggaggatgtt aaaaagttgt 1020

accactcaga agccttcact gtcaacttcg gggacaccga agaggccaag aaacagatca 1080

acgattacgt ggagaagggt actcaaggga aaattgtgga tttggtcaag gagcttgaca 1140

gagacacagt ttttgctctg gtgaattaca tcttctttaa aggcaaatgg gagagaccct 1200

ttgaagtcaa ggacaccgag gaagaggact tccacgtgga ccaggtgacc accgtgaagg 1260

tgcctatgat gaagcgttta ggcatgttta acatccagca ctgtaagaag ctgtccagct 1320

gggtgctgct gatgaaatac ctgggcaatg ccaccgccat cttcttcctg cctgatgagg 1380

ggaaactaca gcacctggaa aatgaactca cccacgatat catcaccaag ttcctggaaa 1440

atgaagacag aaggtctgcc agcttacatt tacccaaact gtccattact ggaacctatg 1500

atctgaagag cgtcctgggt caactgggca tcactaaggt cttcagcaat ggggctgacc 1560

tctccggggt cacagaggag gcacccctga agctctccaa ggccgtgcat aaggctgtgc 1620

tgaccatcga cgagaaaggg actgaagctg ctggggccat gtttttagag gccataccca 1680

tgtctatccc ccccgaggtc aagttcaaca aaccctttgt cttcttaatg attgaacaaa 1740

ataccaagtc tcccctcttc atgggaaaag tggtgaatcc cacccaaaaa taactgcctc 1800

tcgctcctca acccctcccc tccatccctg gccccctccc tggatgacat taaagaaggg 1860

ttgagctggt ccctgcctgc atgtgactgt aaatccctcc catgttttct ctgagtctcc 1920

ctttgcctgc tgaggctgta tgtgggctcc aggtaacagt gctgtcttcg ggccccctga 1980

actgtgttca tggagcatct ggctgggtag gcacatgctg ggcttgaatc caggggggac 2040

tgaatcctca gcttacggac ctgggcccat ctgtttctgg agggctccag tcttccttgt 2100

cctgtcttgg agtccccaag aaggaatcac aggggaggaa ccagatacca gccatgaccc 2160

caggctccac caagcatctt catgtccccc tgctcatccc ccactccccc ccacccagag 2220

ttgctcatcc tgccagggct ggctgtgccc accccaaggc tgccctcctg ggggccccag 2280

aactgcctga tcgtgccgtg gcccagtttt gtggcatctg cagcaacaca agagagagga 2340

caatgtcctc ctcttgaccc gctgtcacct aaccagactc gggccctgca cctctcaggc 2400

acttctggaa aatgactgag gcagattctt cctgaagccc attctccatg gggcaacaag 2460

gacacctatt ctgtccttgt ccttccatcg ctgccccaga aagcctcaca tatctccgtt 2520

tagaatcagg tcccttctcc ccagatgaag aggagggtct ctgctttgtt ttctctatct 2580

cctcctcaga cttgaccagg cccagcaggc cccagaagac cattacccta tatcccttct 2640

cctccctagt cacatggcca taggcctgct gatggctcag gaaggccatt gcaaggactc 2700

ctcagctatg ggagaggaag cacatcaccc attgaccccc gcaacccctc cctttcctcc 2760

tctgagtccc gactggggcc acatgcagcc tgacttcttt gtgcctgttg ctgtccctgc 2820

agtcttcaga gggccaccgc agctccagtg ccacggcagg aggctgttcc tgaatagccc 2880

ctgtggtaag ggccaggaga gtccttccat cctccaaggc cctgctaaag gacacagcag 2940

ccaggaagtc ccctgggccc ctagctgaag gacagcctgc tccctccgtc tctaccagga 3000

atggccttgt cctatggaag gcactgcccc atcccaaact aatctaggaa tcactgtcta 3060

accactcact gtcatgaatg tgtacttaaa ggatgaggtt gagtcatacc aaatagtgat 3120

ttcgatagtt caaaatggtg aaattagcaa ttctacatga ttcagtctaa tcaatggata 3180

ccgactgttt cccacacaag tctcctgttc tcttaagctt actcactgac agcctttcac 3240

tctccacaaa tacattaaag atatggccat caccaagccc cctaggatga caccagacct 3300

gagagtctga agacctggat ccaagttctg acttttcccc ctgacagctg tgtgaccttc 3360

gtgaagtcgc caaacctctc tgagccccag tcattgctag taagacctgc ctttgagttg 3420

gtatgatgtt caagttagat aacaaaatgt ttatacccat tagaacagag aataaataga 3480

actacatttc ttgca 3495

<210> 8
<211> 3492
<212> DNA
<213> Homo sapiens

<400> 8
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaagggcg 240

gcagtaagtc ttcagcatca ggcattttgg ggtgactcag taaatggtag atcttgctac 300

cagtggaaca gccactaagg attctgcagt gagagcagag ggccagctaa gtggtactct 360

cccagagact gtctgactca cgccaccccc tccaccttgg acacaggacg ctgtggtttc 420

tgagccagcc tcccccgttg cccctctgga tccactgctt aaatacggac gaggacaggg 480

ccctgtctcc tcagcttcag gcaccaccac tgacctggga cagtgaatcg acaatgccgt 540

cttctgtctc gtggggcatc ctcctgctgg caggcctgtg ctgcctggtc cctgtctccc 600

tggctgagga tccccaggga gatgctgccc agaagacaga tacatcccac catgatcagg 660

atcacccaac cttcaacaag atcaccccca acctggctga gttcgccttc agcctatacc 720

gccagctggc acaccagtcc aacagcacca atatcttctt ctccccagtg agcatcgcta 780

cagcctttgc aatgctctcc ctggggacca aggctgacac tcacgatgaa atcctggagg 840

gcctgaattt caacctcacg gagattccgg aggctcagat ccatgaaggc ttccaggaac 900

tcctccgtac cctcaaccag ccagacagcc agctccagct gaccaccggc aatggcctgt 960

tcctcagcga gggcctgaag ctagtggata agtttttgga ggatgttaaa aagttgtacc 1020

actcagaagc cttcactgtc aacttcgggg acaccgaaga ggccaagaaa cagatcaacg 1080

attacgtgga gaagggtact caagggaaaa ttgtggattt ggtcaaggag cttgacagag 1140

acacagtttt tgctctggtg aattacatct tctttaaagg caaatgggag agacccttg 1200

aagtcaagga caccgaggaa gaggacttcc acgtggacca ggtgaccacc gtgaaggtgc 1260

ctatgatgaa gcgtttaggc atgtttaaca tccagcactg taagaagctg tccagctggg 1320

tgctgctgat gaaatacctg ggcaatgcca ccgccatctt cttcctgcct gatgagggga 1380

aactacagca cctggaaaat gaactcaccc acgatatcat caccaagttc ctggaaaatg 1440

aagacagaag gtctgccagc ttacatttac ccaaactgtc cattactgga acctatgatc 1500

tgaagagcgt cctgggtcaa ctgggcatca ctaaggtctt cagcaatggg gctgacctct 1560

ccggggtcac agaggaggca cccctgaagc tctccaaggc cgtgcataag gctgtgctga 1620

ccatcgacga gaaagggact gaagctgctg gggccatgtt tttagaggcc atacccatgt 1680

ctatcccccc cgaggtcaag ttcaacaaac cctttgtctt cttaatgatt gaacaaaata 1740

ccaagtctcc cctcttcatg ggaaaagtgg tgaatcccac ccaaaaataa ctgcctctcg 1800

ctcctcaacc cctcccctcc atccctggcc ccctccctgg atgacattaa agaagggttg 1860

agctggtccc tgcctgcatg tgactgtaaa tccctcccat gttttctctg agtctccctt 1920

tgcctgctga ggctgtatgt gggctccagg taacagtgct gtcttcgggc cccctgaact 1980

gtgttcatgg agcatctggc tgggtaggca catgctgggc ttgaatccag gggggactga 2040

atcctcagct tacggacctg ggcccatctg tttctggagg gctccagtct tccttgtcct 2100

gtcttggagt ccccaagaag gaatcacagg ggaggaacca gataccagcc atgaccccag 2160

gctccaccaa gcatcttcat gtccccctgc tcatccccca ctcccccccа cccagagttg 2220

ctcatcctgc cagggctggc tgtgcccacc ccaaggctgc cctcctgggg gccccagaac 2280

tgcctgatcg tgccgtggcc cagttttgtg gcatctgcag caacacaaga gagaggacaa 2340

tgtcctcctc ttgacccgct gtcacctaac cagactcggg ccctgcacct ctcaggcact 2400

tctggaaaat gactgaggca gattcttcct gaagcccatt ctccatgggg caacaaggac 2460

acctattctg tccttgtcct tccatcgctg ccccagaaag cctcacatat ctccgtttag 2520

aatcaggtcc cttctcccca gatgaagagg agggtctctg ctttgttttc tctatctcct 2580

cctcagactt gaccaggccc agcaggcccc agaagaccat taccctatat cccttctcct 2640

ccctagtcac atggccatag gcctgctgat ggctcaggaa ggccattgca aggactcctc 2700

agctatggga gaggaagcac atcacccatt gacccccgca acccctccct ttcctcctct 2760

gagtcccgac tggggccaca tgcagcctga cttctttgtg cctgttgctg tccctgcagt 2820

cttcagaggg ccaccgcagc tccagtgcca cggcaggagg ctgttcctga atagcccctg 2880

tggtaagggc caggagagtc cttccatcct ccaaggccct gctaaaggac acagcagcca 2940

ggaagtcccc tgggccccta gctgaaggac agcctgctcc ctccgtctct accaggaatg 3000

gccttgtcct atggaaggca ctgccccatc ccaaactaat ctaggaatca ctgtctaacc 3060

actcactgtc atgaatgtgt acttaaagga tgaggttgag tcataccaaa tagtgatttc 3120

gatagttcaa aatggtgaaa ttagcaattc tacatgattc agtctaatca atggataccg 3180

actgtttccc acacaagtct cctgttctct taagcttact cactgacagc ctttcactct 3240

ccacaaatac attaaagata tggccatcac caagcccccт aggatgacac cagacctgag 3300

agtctgaaga cctggatcca agttctgact tttccccctg acagctgtgt gaccttcgtg 3360

aagtcgccaa acctctctga gccccagtca ttgctagtaa gacctgcctt tgagttggta 3420

tgatgttcaa gttagataac aaaatgttta tacccattag aacagagaat aaatagaact 3480

acatttcttg ca 3492

<210> 9
<211> 3510
<212> DNA
<213> Homo sapiens

<400> 9
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaagggcg 240

gcagtaagtc ttcagcatca ggcattttgg ggtgactcag taaatggtag atcttgctac 300

cagtggaaca gccactaagg attctgcagt gagagcagag ggccagctaa gtggtactct 360

cccagagact gtctgactca cgccaccccc tccaccttgg acacaggacg ctgtggtttc 420

tgagccaggt acaatgactc ctttcgcctc ccccgttgcc cctctggatc cactgcttaa 480

atacggacga ggacagggcc ctgtctcctc agcttcaggc accaccactg acctgggaca 540

gtgaatcgac aatgccgtct tctgtctcgt ggggcatcct cctgctggca ggcctgtgct 600

gcctggtccc tgtctccctg gctgaggatc cccagggaga tgctgcccag aagacagata 660

catcccacca tgatcaggat cacccaacct tcaacaagat caccccccaac ctggctgagt 720

tcgccttcag cctataccgc cagctggcac accagtccaa cagcaccaat atcttcttct 780

ccccagtgag catcgctaca gcctttgcaa tgctctccct ggggaccaag gctgacactc 840

acgatgaaat cctggagggc ctgaatttca acctcacgga gattccggag gctcagatcc 900

atgaaggctt ccaggaactc ctccgtaccc tcaaccagcc agacagccag ctccagctga 960

ccaccggcaa tggcctgttc ctcagcgagg gcctgaagct agtggataag tttttggagg 1020

atgttaaaaa gttgtaccac tcagaagcct tcactgtcaa cttcggggac accgaagagg 1080

ccaagaaaca gatcaacgat tacgtggaga agggtactca agggaaaatt gtggatttgg 1140

tcaaggagct tgacagagac acagtttttg ctctggtgaa ttacatcttc tttaaaggca 1200

aatgggagag acccttttgaa gtcaaggaca ccgaggaaga ggacttccac gtggaccagg 1260

tgaccaccgt gaaggtgcct atgatgaagc gtttaggcat gtttaacatc cagcactgta 1320

agaagctgtc cagctgggtg ctgctgatga aatacctggg caatgccacc gccatcttct 1380

tcctgcctga tgaggggaaa ctacagcacc tggaaaatga actcacccac gatatcatca 1440

ccaagttcct ggaaaatgaa gacagaaggt ctgccagctt acatttaccc aaactgtcca 1500

ttactggaac ctatgatctg aagagcgtcc tgggtcaact gggcatcact aaggtcttca 1560

gcaatggggc tgacctctcc ggggtcacag aggaggcacc cctgaagctc tccaaggccg 1620

tgcataaggc tgtgctgacc atcgacgaga aagggactga agctgctggg gccatgtttt 1680

tagaggccat acccatgtct atccccccg aggtcaagtt caacaaaccc tttgtcttct 1740

taatgattga acaaaatacc aagtctcccc tcttcatggg aaaagtggtg aatcccaccc 1800

aaaaataact gcctctcgct cctcaacccc tcccctccat ccctggcccc ctccctggat 1860

gacattaaag aagggttgag ctggtccctg cctgcatgtg actgtaaatc cctcccatgt 1920

tttctctgag tctccctttg cctgctgagg ctgtatgtgg gctccaggta acagtgctgt 1980

cttcgggccc cctgaactgt gttcatggag catctggctg ggtaggcaca tgctgggctt 2040

gaatccaggg gggactgaat cctcagctta cggacctggg cccatctgtt tctggagggc 2100

tccagtcttc cttgtcctgt cttggagtcc ccaagaagga atcacagggg aggaaccaga 2160

taccagccat gaccccaggc tccaccaagc atcttcatgt ccccctgctc atcccccact 2220

ccccccccacc cagagttgct catcctgcca gggctggctg tgcccacccc aaggctgccc 2280

tcctgggggc cccagaactg cctgatcgtg ccgtggccca gttttgtggc atctgcagca 2340

acacaagaga gaggacaatg tcctcctctt gacccgctgt cacctaacca gactcgggcc 2400

ctgcacctct caggcacttc tggaaaatga ctgaggcaga ttcttcctga agcccattct 2460

ccatggggca acaaggacac ctattctgtc cttgtccttc catcgctgcc ccagaaagcc 2520

tcacatatct ccgtttagaa tcaggtccct tctccccaga tgaagaggag ggtctctgct 2580

ttgttttctc tatctcctcc tcagacttga ccaggcccag caggccccag aagaccatta 2640

ccctatatcc cttctcctcc ctagtcacat ggccataggc ctgctgatgg ctcaggaagg 2700

ccattgcaag gactcctcag ctatgggaga ggaagcacat cacccattga cccccgcaac 2760

ccctcccttt cctcctctga gtcccgactg gggccacatg cagcctgact tctttgtgcc 2820

tgttgctgtc cctgcagtct tcagagggcc accgcagctc cagtgccacg gcaggaggct 2880

gttcctgaat agcccctgtg gtaagggcca ggagagtcct tccatcctcc aaggccctgc 2940

taaaggacac agcagccagg aagtcccctg ggcccctagc tgaaggacag cctgctccct 3000

ccgtctctac caggaatggc cttgtcctat ggaaggcact gccccatccc aaactaatct 3060

aggaatcact gtctaaccac tcactgtcat gaatgtgtac ttaaaggatg aggttgagtc 3120

ataccaaata gtgatttcga tagttcaaaa tggtgaaatt agcaattcta catgattcag 3180

tctaatcaat ggataccgac tgtttcccac acaagtctcc tgttctctta agcttactca 3240

ctgacagcct ttcactctcc acaaatacat taaagatatg gccatcacca agcccctag 3300

gatgacacca gacctgagag tctgaagacc tggatccaag ttctgacttt tccccctgac 3360

agctgtgtga ccttcgtgaa gtcgccaaac ctctctgagc cccagtcatt gctagtaaga 3420

cctgcctttg agttggtatg atgttcaagt tagataacaa aatgtttata cccattagaa 3480

cagagaataa atagaactac atttcttgca 3510

<210> 10
<211> 3303
<212> DNA
<213> Homo sapiens

<400> 10
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaagcagc 240

ctcccccgtt gcccctctgg atccactgct taaatacgga cgaggacagg gccctgtctc 300

ctcagcttca ggcaccacca ctgacctggg acagtgaatc gacaatgccg tcttctgtct 360

cgtggggcat cctcctgctg gcaggcctgt gctgcctggt ccctgtctcc ctggctgagg 420

atccccaggg agatgctgcc cagaagacag atacatccca ccatgatcag gatcacccaa 480

ccttcaacaa gatcaccccc aacctggctg agttcgcctt cagcctatac cgccagctgg 540

cacaccagtc caacagcacc aatatcttct tctccccagt gagcatcgct acagcctttg 600

caatgctctc cctggggacc aaggctgaca ctcacgatga aatcctggag ggcctgaatt 660

tcaacctcac ggagattccg gaggctcaga tccatgaagg cttccaggaa ctcctccgta 720

ccctcaacca gccagacagc cagctccagc tgaccaccgg caatggcctg ttcctcagcg 780

agggcctgaa gctagtggat aagtttttgg aggatgttaa aaagttgtac cactcagaag 840

ccttcactgt caacttcggg gacaccgaag aggccaagaa acagatcaac gattacgtgg 900

agaagggtac tcaagggaaa attgtggatt tggtcaagga gcttgacaga gacacagttt 960

ttgctctggt gaattacatc ttctttaaag gcaaatggga gagacccttt gaagtcaagg 1020

acaccgagga agaggacttc cacgtggacc aggtgaccac cgtgaaggtg cctatgatga 1080

agcgtttagg catgtttaac atccagcact gtaagaagct gtccagctgg gtgctgctga 1140

tgaaatacct gggcaatgcc accgccatct tcttcctgcc tgatgagggg aaactacagc 1200

acctggaaaa tgaactcacc cacgatatca tcaccaagtt cctggaaaat gaagacagaa 1260

ggtctgccag cttacattta cccaaactgt ccattactgg aacctatgat ctgaagagcg 1320

tcctgggtca actgggcatc actaaggtct tcagcaatgg ggctgacctc tccggggtca 1380

cagaggaggc acccctgaag ctctccaagg ccgtgcataa ggctgtgctg accatcgacg 1440

agaaagggac tgaagctgct ggggccatgt ttttagaggc catacccatg tctatccccc 1500

ccgaggtcaa gttcaacaaa ccctttgtct tcttaatgat tgaacaaaat accaagtctc 1560

ccctcttcat gggaaaagtg gtgaatccca cccaaaaata actgcctctc gctcctcaac 1620

ccctcccctc catccctggc cccctccctg gatgacatta aagaagggtt gagctggtcc 1680

ctgcctgcat gtgactgtaa atccctccca tgttttctct gagtctccct ttgcctgctg 1740

aggctgtatg tgggctccag gtaacagtgc tgtcttcggg ccccctgaac tgtgttcatg 1800

gagcatctgg ctgggtaggc acatgctggg cttgaatcca ggggggactg aatcctcagc 1860

ttacggacct gggcccatct gtttctggag ggctccagtc ttccttgtcc tgtcttggag 1920

tccccaagaa ggaatcacag gggaggaacc agataccagc catgacccca ggctccacca 1980

agcatcttca tgtccccctg ctcatccccc actccccccc acccagagtt gctcatcctg 2040

ccagggctgg ctgtgcccac cccaaggctg ccctcctggg ggccccagaa ctgcctgatc 2100

gtgccgtggc ccagttttgt ggcatctgca gcaacacaag agagaggaca atgtcctcct 2160

cttgacccgc tgtcacctaa ccagactcgg gccctgcacc tctcaggcac ttctggaaaa 2220

tgactgaggc agattcttcc tgaagcccat tctccatggg gcaacaagga cacctattct 2280

gtccttgtcc ttccatcgct gccccagaaa gcctcacata tctccgttta gaatcaggtc 2340

ccttctcccc agatgaagag gagggtctct gctttgtttt ctctatctcc tcctcagact 2400

tgaccaggcc cagcaggccc cagaagacca ttaccctata tcccttctcc tccctagtca 2460

catggccata ggcctgctga tggctcagga aggccattgc aaggactcct cagctatggg 2520

agaggaagca catcacccat tgacccccgc aacccctccc tttcctcctc tgagtcccga 2580

ctggggccac atgcagcctg acttctttgt gcctgttgct gtccctgcag tcttcagagg 2640

gccaccgcag ctccagtgcc acggcaggag gctgttcctg aatagcccct gtggtaaggg 2700

ccaggagagt ccttccatcc tccaaggccc tgctaaagga cacagcagcc aggaagtccc 2760

ctgggcccct agctgaagga cagcctgctc cctccgtctc taccaggaat ggccttgtcc 2820

tatggaaggc actgccccat cccaaactaa tctaggaatc actgtctaac cactcactgt 2880

catgaatgtg tacttaaagg atgaggttga gtcataccaa atagtgattt cgatagttca 2940

aaatggtgaa attagcaatt ctacatgatt cagtctaatc aatggatacc gactgtttcc 3000

cacacaagtc tcctgttctc ttaagcttac tcactgacag cctttcactc tccacaaata 3060

cattaaagat atggccatca ccaagccccc taggatgaca ccagacctga gagtctgaag 3120

acctggatcc aagttctgac ttttcccct gacagctgtg tgaccttcgt gaagtcgcca 3180

aacctctctg agccccagtc attgctagta agacctgcct ttgagttggt atgatgttca 3240

agttagataa caaaatgttt atacccatta gaacagagaa taaatagaac tacatttctt 3300

gca 3303

<210> 11
<211> 3300
<212> DNA
<213> Homo sapiens

<400> 11
tgggcaggaa ctgggcactg tgcccagggc atgcactgcc tccacgcagc aaccctcaga 60

gtcctgagct gaaccaagaa ggaggagggg gtcgggcctc cgaggaaggc ctagccgctg 120

ctgctgccag gaattccagg ttggaggggc ggcaacctcc tgccagcctt caggccactc 180

tcctgtgcct gccagaagag acagagcttg aggagagctt gaggagagca ggaaagcctc 240

ccccgttgcc cctctggatc cactgcttaa atacggacga ggacagggcc ctgtctcctc 300

agcttcaggc accaccactg acctgggaca gtgaatcgac aatgccgtct tctgtctcgt 360

ggggcatcct cctgctggca ggcctgtgct gcctggtccc tgtctccctg gctgaggatc 420

cccagggaga tgctgcccag aagacagata catcccacca tgatcaggat cacccaacct 480

tcaacaagat caccccccaac ctggctgagt tcgccttcag cctataccgc cagctggcac 540

accagtccaa cagcaccaat atcttcttct ccccagtgag catcgctaca gcctttgcaa 600

tgctctccct ggggaccaag gctgacactc acgatgaaat cctggagggc ctgaatttca 660

acctcacgga gattccggag gctcagatcc atgaaggctt ccaggaactc ctccgtaccc 720

tcaaccagcc agacagccag ctccagctga ccaccggcaa tggcctgttc ctcagcgagg 780

gcctgaagct agtggataag tttttggagg atgttaaaaa gttgtaccac tcagaagcct 840

tcactgtcaa cttcggggac accgaagagg ccaagaaaca gatcaacgat tacgtggaga 900

agggtactca agggaaaatt gtggatttgg tcaaggagct tgacagagac acagtttttg 960

ctctggtgaa ttacatcttc tttaaaggca aatgggagag acccttttgaa gtcaaggaca 1020

ccgaggaaga ggacttccac gtggaccagg tgaccaccgt gaaggtgcct atgatgaagc 1080

gtttaggcat gtttaacatc cagcactgta agaagctgtc cagctgggtg ctgctgatga 1140

aatacctggg caatgccacc gccatcttct tcctgcctga tgaggggaaa ctacagcacc 1200

tggaaaatga actcacccac gatatcatca ccaagttcct ggaaaatgaa gacagaaggt 1260

ctgccagctt acatttaccc aaactgtcca ttactggaac ctatgatctg aagagcgtcc 1320

tgggtcaact gggcatcact aaggtcttca gcaatggggc tgacctctcc ggggtcacag 1380

aggaggcacc cctgaagctc tccaaggccg tgcataaggc tgtgctgacc atcgacgaga 1440

aagggactga agctgctggg gccatgtttt tagaggccat acccatgtct atccccccg 1500

aggtcaagtt caacaaaccc tttgtcttct taatgattga acaaaatacc aagtctcccc 1560

tcttcatggg aaaagtggtg aatcccaccc aaaaataact gcctctcgct cctcaacccc 1620

tcccctccat ccctggcccc ctccctggat gacattaaag aagggttgag ctggtccctg 1680

cctgcatgtg actgtaaatc cctcccatgt tttctctgag tctccctttg cctgctgagg 1740

ctgtatgtgg gctccaggta acagtgctgt cttcgggccc cctgaactgt gttcatggag 1800

catctggctg ggtaggcaca tgctgggctt gaatccaggg gggactgaat cctcagctta 1860

cggacctggg cccatctgtt tctggagggc tccagtcttc cttgtcctgt cttggagtcc 1920

ccaagaagga atcacagggg aggaaccaga taccagccat gaccccaggc tccaccaagc 1980

atcttcatgt ccccctgctc atcccccact ccccccccacc cagagttgct catcctgcca 2040

gggctggctg tgcccacccc aaggctgccc tcctgggggc cccagaactg cctgatcgtg 2100

ccgtggccca gttttgtggc atctgcagca acacaagaga gaggacaatg tcctcctctt 2160

gacccgctgt cacctaacca gactcgggcc ctgcacctct caggcacttc tggaaaatga 2220

ctgaggcaga ttcttcctga agcccattct ccatggggca acaaggacac ctattctgtc 2280

cttgtccttc catcgctgcc ccagaaagcc tcacatatct ccgtttagaa tcaggtccct 2340

tctccccaga tgaagaggag ggtctctgct ttgttttctc tatctcctcc tcagacttga 2400

ccaggcccag caggccccag aagaccatta ccctatatcc cttctcctcc ctagtcacat 2460

ggccataggc ctgctgatgg ctcaggaagg ccattgcaag gactcctcag ctatgggaga 2520

ggaagcacat cacccattga cccccgcaac ccctcccttt cctcctctga gtcccgactg 2580

gggccacatg cagcctgact tctttgtgcc tgttgctgtc cctgcagtct tcagagggcc 2640

accgcagctc cagtgccacg gcaggaggct gttcctgaat agcccctgtg gtaagggcca 2700

ggagagtcct tccatcctcc aaggccctgc taaaggacac agcagccagg aagtcccctg 2760

ggcccctagc tgaaggacag cctgctccct ccgtctctac caggaatggc cttgtcctat 2820

ggaaggcact gccccatccc aaactaatct aggaatcact gtctaaccac tcactgtcat 2880

gaatgtgtac ttaaaggatg aggttgagtc ataccaaata gtgatttcga tagttcaaaa 2940

tggtgaaatt agcaattcta catgattcag tctaatcaat ggataccgac tgtttcccac 3000

acaagtctcc tgttctctta agcttactca ctgacagcct ttcactctcc acaaatacat 3060

taaagatatg gccatcacca agcccctag gatgacacca gacctgagag tctgaagacc 3120

tggatccaag ttctgacttt tccccctgac agctgtgtga ccttcgtgaa gtcgccaaac 3180

ctctctgagc cccagtcatt gctagtaaga cctgcctttg agttggtatg atgttcaagt 3240

tagataacaa aatgtttata cccattagaa cagagaataa atagaactac atttcttgca 3300

<210> 12
<211> 1321
<212> DNA
<213> Macaca mulatta

<400> 12
caggacaatg ccatcttctg tctcatgggg cgtcctcctg ctggcaggcc tgtgctgcct 60

gctccccggc tctctggctg aggatcccca gggagatgct gcccagaaga cggatacatc 120

ccaccatgat caggaccacc caaccctcaa caagatcacc cccagcctgg ctgagttcgg 180

cttcagccta taccgccagc tggcacacca gtccaacagc accaatatct tcttctcccc 240

agtgagcatc gctacagcct ttgcaatgct ctccctgggg accaaggctg acactcacag 300

tgaaatcctg gagggcctga atttcaacgt cacggagatt ccggaggctc aggtccatga 360

aggcttccag gaactcctcc ataccctcaa caagccagac agccagctcc agctgaccac 420

cggcaacggc ctgttcctca acaagagcct gaaggtagtg gataagtttt tggaggatgt 480

caaaaaactg taccactcag aagccttctc tgtcaacttt gaggacaccg aagaggccaa 540

gaaacagatc aacaattacg tggagaagga aactcaaggg aaaattgtgg atttggtcaa 600

ggagcttgac agagacacag tttttgctct ggtgaattac atcttcttta aaggcaaatg 660

ggagagaccc tttgacgttg aggccaccaa ggaagaggac ttccacgtgg accaggcgac 720

caccgtgaag gtgcccatga tgaggcgttt aggcatgttt aacatctacc actgtgagaa 780

gctgtccagc tgggtgctgc tgatgaaata cctgggcaat gccaccgcca tcttcttcct 840

gcctgatgag gggaaactgc agcacctgga aaatgaactc acccatgata tcatcaccaa 900

gttcctggaa aatgaaaaca gcaggtctgc caacttacat ttacccagac tggccattac 960

tggaacctat gatctgaaga cagtcctggg ccacctgggt atcactaagg tcttcagcaa 1020

tggggctgac ctctcgggga tcacggagga ggcacccctg aagctctcca aggccgtgca 1080

taaggctgtg ctgaccatcg atgagaaagg gactgaagct gctggggcca tgtttttaga 1140

ggccataccc atgtctattc cccccgaggt caagttcaac aaaccctttg tcttcttaat 1200

gattgaacaa aataccaagt ctcccctctt catgggaaaa gtggtgaatc ccacccagaa 1260

ataactgcct gtcactcctc agcccctccc ctccatccct ggcccccctcc ctgaatgaca 1320

t 1321

<210> 13
<211> 2064
<212> DNA
<213> Macaca mulatta

<400> 13
gcccagtctt gtgtctgcct ggcaatgggc aaggcccctt cctgcccaag ctccccgccc 60

ctccccaacc tattgcctcc gccacccgcc acccgaggcc aacttcctgg gtgggcagga 120

actgggccct gtgcccaggg cgtgcactgc ctccacgcag caaccctcag agtactgagc 180

tgagcaaagg aggaggaggg gatcagcact ctgaggaagg cctagccact gctgctgcca 240

ggaattccag ggcggcatca gtcttcagca tcaggcattt cggggtgaat tagtaaatgg 300

tagatcttgc taccagtgga acagccgcta aggattctgc agtgagagca gagggccagc 360

aaagtggtac tctcccagcg actggctgac tcacgccacc ccctccacct tggacgcagg 420

acactgtggt ttctgagcca ggtacaatga ctccttttgg tacgtgcagt ggaggctgta 480

tgctgctcag gcagagcgtc cggacagcgt gggcgggcga ctcagcgccc agcctgtgaa 540

cttagtccct gtttgctcct ccggtaactg gggtgatctt ggttaatatt caccagcagc 600

ctcccccgtt gcccctctgc acccactgct taaatacgga caaggacagg gctctgtctc 660

ctcagcctca ggcaccacca ctgacctggg acggtgaatc gacaatgcca tcttctgtct 720

catggggcgt cctcctgctg gcaggcctgt gctgcctgct ccccggctct ctggctgagg 780

atccccaggg agatgctgcc cagaagacgg atacatccca ccatgatcag gaccacccaa 840

ccctcaacaa gatcaccccc agcctggctg agttcggctt cagcctatac cgccagctgg 900

cacaccagtc caacagcacc aatatcttct tctccccagt gagcatcgct acagcctttg 960

caatgctctc cctggggacc aaggctgaca ctcacagtga aatcctggag ggcctgaatt 1020

tcaacgtcac ggagattccg gaggctcagg tccatgaagg cttccaggaa ctcctccata 1080

ccctcaacaa gccagacagc cagctccagc tgaccaccgg caacggcctg ttcctcaaca 1140

agagcctgaa ggtagtggat aagtttttgg aggatgtcaa aaaactgtac cactcagaag 1200

ccttctctgt caactttgag gacaccgaag aggccaagaa acagatcaac aattacgtgg 1260

agaaggaaac tcaagggaaa attgtggatt tggtcaagga gcttgacaga gacacagttt 1320

ttgctctggt gaattacatc ttctttaaag gcaaatggga gagacccttt gacgttgagg 1380

ccaccaagga agaggacttc cacgtggacc aggcgaccac cgtgaaggtg cccatgatga 1440

ggcgtttagg catgtttaac atctaccact gtgagaagct gtccagctgg gtgctgctga 1500

tgaaatacct gggcaatgcc accgccatct tcttcctgcc tgatgagggg aaactgcagc 1560

acctggaaaa tgaactcacc catgatatca tcaccaagtt cctggaaaat gaaaacagca 1620

ggtctgccaa cttacattta cccagactgg ccattactgg aacctatgat ctgaagacag 1680

tcctgggcca cctgggtatc actaaggtct tcagcaatgg ggctgacctc tcggggatca 1740

cggaggaggc acccctgaag ctctccaagg ccgtgcataa ggctgtgctg accatcgatg 1800

agaaagggac tgaagctgct ggggccatgt ttttagaggc catacccatg tctattcccc 1860

ccgaggtcaa gttcaacaaa ccctttgtct tcttaatgat tgaacaaaat accaagtctc 1920

ccctcttcat gggaaaagtg gtgaatccca cccagaaata actgcctgtc actcctcagc 1980

ccctcccctc catccctggc cccctccctg aatgacatta aagaagggtt gagctggtcc 2040

ctgcctgcgt gtgtgactgc aaac 2064

<210> 14
<211> 1608
<212> DNA
<213> Macaca mulatta

<400> 14
tcttgtgtct gcctggcaat gggcaaggcc ccttcctgcc caagctcccc gcccctcccc 60

aacctattgc ctccgccacc cgccacccga ggccaacttc ctgggtgggc aggaactggg 120

ccctgtgccc agggcgtgca ctgcctccac gcagcaaccc tcagagtact gagctgagca 180

aaggaggagg aggggatcag cactctgagg aaggcctagc cactgctgct gccaggaatt 240

ccaggacaat gccatcttct gtctcatggg gcgtcctcct gctggcaggc ctgtgctgcc 300

tgctccccgg ctctctggct gaggatcccc agggagatgc tgcccagaag acggatacat 360

cccaccatga tcaggaccac ccaaccctca acaagatcac ccccagcctg gctgagttcg 420

gcttcagcct ataccgccag ctggcacacc agtccaacag caccaatatc ttcttctccc 480

cagtgagcat cgctacagcc tttgcaatgc tctccctggg gaccaaggct gacactcaca 540

gtgaaatcct ggagggcctg aatttcaacg tcacggagat tccggaggct caggtccatg 600

aaggcttcca ggaactcctc cataccctca acaagccaga cagccagctc cagctgacca 660

ccggcaacgg cctgttcctc aacaagagcc tgaaggtagt ggataagttt ttggaggatg 720

tcaaaaaact gtaccactca gaagccttct ctgtcaactt tgaggacacc gaagaggcca 780

agaaacagat caacaattac gtggagaagg aaactcaagg gaaaattgtg gatttggtca 840

aggagcttga cagagacaca gtttttgctc tggtgaatta catcttcttt aaaggcaaat 900

gggagagacc ctttgacgtt gaggccacca aggaagagga cttccacgtg gaccaggcga 960

ccaccgtgaa ggtgcccatg atgaggcgtt taggcatgtt taacatctac cactgtgaga 1020

agctgtccag ctgggtgctg ctgatgaaat acctgggcaa tgccaccgcc atcttcttcc 1080

tgcctgatga ggggaaactg cagcacctgg aaaatgaact cacccatgat atcatcacca 1140

agttcctgga aaatgaaaac agcaggtctg ccaacttaca tttacccaga ctggccatta 1200

ctggaaccta tgatctgaag acagtcctgg gccacctggg tatcactaag gtcttcagca 1260

atggggctga cctctcgggg atcacggagg aggcacccct gaagctctcc aaggccgtgc 1320

ataaggctgt gctgaccatc gatgagaaag ggactgaagc tgctggggcc atgtttttag 1380

aggccatacc catgtctatt ccccccgagg tcaagttcaa caaacccttt gtcttcttaa 1440

tgattgaaca aaataccaag tctcccctct tcatgggaaa agtggtgaat cccacccaga 1500

aataactgcc tgtcactcct cagcccctcc cctccatccc tggccccctc cctgaatgac 1560

attaaagaag ggttgagctg gtccctgcct gcgtgtgtga ctgcaaac 1608

<210> 15
<211> 3220
<212> DNA
<213> Homo sapiens

<400> 15
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctagggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctgctg gtgaatatta accaaggtca ccccagttat cggaggagca aacaggggct 3120

aagtccactg gctgggatct gagtcgcccg cctacgctgc ccggacgctt tgcctgggca 3180

gtgtacagct tccactgcac ttaccgaaag gagtcattgt 3220

<210> 16
<211> 3199
<212> DNA
<213> Homo sapiens

<400> 16

tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctaggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcctttcct gctctcctca agctctcctc aagctctgtc 3000

tcttctggca ggcacaggag agtggcctga aggctggcag gaggttgccg cccctccaac 3060

ctggaattcc tggcagcagc agcggctagg ccttcctcgg aggcccgacc ccctcctcct 3120

tcttggttca gctcaggact ctgagggttg ctgcgtggag gcagtgcatg ccctgggcac 3180

agtgcccagt tcctgccca 3199

<210> 17
<211> 3513
<212> DNA
<213> Homo sapiens

<400> 17
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctaggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctgcga aaggagtcat tgtacctggc tcagaaacca cagcgtcctg tgtccaaggt 3120

ggagggggtg gcgtgagtca gacagtctct gggagagtac cacttagctg gccctctgct 3180

ctcactgcag aatccttagt ggctgttcca ctggtagcaa gatctaccat ttactgagtc 3240

accccaaaat gcctgatgct gaagacttac tgccgccctt tcctgctctc ctcaagctct 3300

cctcaagctc tgtctcttct ggcaggcaca ggagagtggc ctgaaggctg gcaggaggtt 3360

gccgcccctc caacctggaa ttcctggcag cagcagcggc taggccttcc tcggaggccc 3420

gacccctcc tccttcttgg ttcagctcag gactctgagg gttgctgcgt ggaggcagtg 3480

catgccctgg gcacagtgcc cagttcctgc cca 3513

<210> 18
<211> 3236
<212> DNA
<213> Homo sapiens

<400> 18
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctagggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcctgtgga actgagtgag cagcagcagc aatgtcccac 3000

ctttcctgct ctcctcaagc tctcctcaag ctctgtctct tctggcaggc acaggagagt 3060

ggcctgaagg ctggcaggag gttgccgccc ctccaacctg gaattcctgg cagcagcagc 3120

ggctaggcct tcctcggagg cccgaccccc tcctccttct tggttcagct caggactctg 3180

agggttgctg cgtggaggca gtgcatgccc tgggcacagt gcccagttcc tgccca 3236

<210> 19
<211> 3532
<212> DNA
<213> Homo sapiens

<400> 19
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctagggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctgctg gctcagaaac cacagcgtcc tgtgtccaag gtggaggggg tggcgtgagt 3120

cagacagtct ctgggagagt accacttagc tggccctctg ctctcactgc agaatcctta 3180

gtggctgttc cactggtagc aagatctacc atttactgag tcaccccaaa atgcctgatg 3240

ctgaagactt actgccgccc tgtggaactg agtgagcagc agcagcaatg tcccaccttt 3300

cctgctctcc tcaagctctc ctcaagctct gtctcttctg gcaggcacag gagagtggcc 3360

tgaaggctgg caggaggttg ccgcccctcc aacctggaat tcctggcagc agcagcggct 3420

aggccttcct cggaggcccg acccccctcct ccttcttggt tcagctcagg actctgaggg 3480

ttgctgcgtg gaggcagtgc atgccctggg cacagtgccc agttcctgcc ca 3532

<210> 20
<211> 3340
<212> DNA
<213> Homo sapiens

<400> 20
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctagggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctgctg tggaactgag tgagcagcag cagcaatgtc ccacctttcc tgctctcctc 3120

aagctctcct caagctctgt ctcttctggc aggcacagga gagtggcctg aaggctggca 3180

ggaggttgcc gcccctccaa cctggaattc ctggcagcag cagcggctag gccttcctcg 3240

gaggcccgac cccctcctcc ttcttggttc agctcaggac tctgagggtt gctgcgtgga 3300

ggcagtgcat gccctgggca cagtgcccag ttcctgccca 3340

<210> 21
<211> 3495
<212> DNA
<213> Homo sapiens

<400> 21
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctaggggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctgctg gctcagaaac cacagcgtcc tgtgtccaag gtggaggggg tggcgtgagt 3120

cagacagtct ctgggagagt accacttagc tggccctctg ctctcactgc agaatcctta 3180

gtggctgttc cactggtagc aagatctacc atttactgag tcaccccaaa atgcctgatg 3240

ctgaagactt actgccgccc tttcctgctc tcctcaagct ctcctcaagc tctgtctctt 3300

ctggcaggca caggagagtg gcctgaaggc tggcaggagg ttgccgcccc tccaacctgg 3360

aattcctggc agcagcagcg gctaggcctt cctcggaggc ccgaccccct cctccttctt 3420

ggttcagctc aggactctga gggttgctgc gtggaggcag tgcatgccct gggcacagtg 3480

cccagttcct gccca 3495

<210> 22
<211> 3492
<212> DNA
<213> Homo sapiens

<400> 22
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctaggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctggct cagaaaccac agcgtcctgt gtccaaggtg gaggggtgg cgtgagtcag 3120

acagtctctg ggagagtacc acttagctgg ccctctgctc tcactgcaga atccttagtg 3180

gctgttccac tggtagcaag atctaccatt tactgagtca ccccaaaatg cctgatgctg 3240

aagacttact gccgcccttt cctgctctcc tcaagctctc ctcaagctct gtctcttctg 3300

gcaggcacag gagagtggcc tgaaggctgg caggaggttg ccgcccctcc aacctggaat 3360

tcctggcagc agcagcggct aggccttcct cggaggcccg acccccctcct ccttcttggt 3420

tcagctcagg actctgaggg ttgctgcgtg gaggcagtgc atgccctggg cacagtgccc 3480

agttcctgcc ca 3492

<210> 23
<211> 3510
<212> DNA
<213> Homo sapiens

<400> 23
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctagggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggcgaaag gagtcattgt acctggctca gaaaccacag cgtcctgtgt ccaaggtgga 3120

gggggtggcg tgagtcagac agtctctggg agagtaccac ttagctggcc ctctgctctc 3180

actgcagaat ccttagtggc tgttccactg gtagcaagat ctaccattta ctgagtcacc 3240

ccaaaatgcc tgatgctgaa gacttactgc cgcccctttcc tgctctcctc aagctctcct 3300

caagctctgt ctcttctggc aggcacagga gagtggcctg aaggctggca ggaggttgcc 3360

gcccctccaa cctggaattc ctggcagcag cagcggctag gccttcctcg gaggcccgac 3420

cccctcctcc ttcttggttc agctcaggac tctgagggtt gctgcgtgga ggcagtgcat 3480

gccctgggca cagtgcccag ttcctgccca 3510

<210> 24
<211> 3303
<212> DNA
<213> Homo sapiens

<400> 24
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctaggggct tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctgctt tcctgctctc ctcaagctct cctcaagctc tgtctcttct ggcaggcaca 3120

ggagagtggc ctgaaggctg gcaggaggtt gccgcccctc caacctggaa ttcctggcag 3180

cagcagcggc taggccttcc tcggaggccc gacccctcc tccttcttgg ttcagctcag 3240

gactctgagg gttgctgcgt ggaggcagtg catgccctgg gcacagtgcc cagttcctgc 3300

cca 3303

<210> 25
<211> 3300
<212> DNA
<213> Homo sapiens

<400> 25
tgcaagaaat gtagttctat ttattctctg ttctaatggg tataaacatt ttgttatcta 60

acttgaacat cataccaact caaaggcagg tcttactagc aatgactggg gctcagagag 120

gtttggcgac ttcacgaagg tcacacagct gtcaggggga aaagtcagaa cttggatcca 180

ggtcttcaga ctctcaggtc tggtgtcatc ctaggggget tggtgatggc catatcttta 240

atgtatttgt ggagagtgaa aggctgtcag tgagtaagct taagagaaca ggagacttgt 300

gtgggaaaca gtcggtatcc attgattaga ctgaatcatg tagaattgct aatttcacca 360

ttttgaacta tcgaaatcac tatttggtat gactcaacct catcctttaa gtacacattc 420

atgacagtga gtggttagac agtgattcct agattagttt gggatggggc agtgccttcc 480

ataggacaag gccattcctg gtagagacgg agggagcagg ctgtccttca gctaggggcc 540

caggggactt cctggctgct gtgtccttta gcagggcctt ggaggatgga aggactctcc 600

tggcccttac cacaggggct attcaggaac agcctcctgc cgtggcactg gagctgcggt 660

ggccctctga agactgcagg gacagcaaca ggcacaaaga agtcaggctg catgtggccc 720

cagtcgggac tcagaggagg aaagggaggg gttgcggggg tcaatgggtg atgtgcttcc 780

tctcccatag ctgaggagtc cttgcaatgg ccttcctgag ccatcagcag gcctatggcc 840

atgtgactag ggaggagaag ggatataggg taatggtctt ctggggcctg ctgggcctgg 900

tcaagtctga ggaggagata gagaaaacaa agcagagacc ctcctcttca tctggggaga 960

agggacctga ttctaaacgg agatatgtga ggctttctgg ggcagcgatg gaaggacaag 1020

gacagaatag gtgtccttgt tgccccatgg agaatgggct tcaggaagaa tctgcctcag 1080

tcattttcca gaagtgcctg agaggtgcag ggcccgagtc tggttaggtg acagcgggtc 1140

aagaggagga cattgtcctc tctcttgtgt tgctgcagat gccacaaaac tgggccacgg 1200

cacgatcagg cagttctggg gcccccagga gggcagcctt ggggtgggca cagccagccc 1260

tggcaggatg agcaactctg ggtgggggggg agtgggggat gagcaggggg acatgaagat 1320

gcttggtgga gcctggggtc atggctggta tctggttcct cccctgtgat tccttcttgg 1380

ggactccaag acaggacaag gaagactgga gccctccaga aacagatggg cccaggtccg 1440

taagctgagg attcagtccc ccctggattc aagcccagca tgtgcctacc cagccagatg 1500

ctccatgaac acagttcagg gggcccgaag acagcactgt tacctggagc ccacatacag 1560

cctcagcagg caaagggaga ctcagagaaa acatgggagg gatttacagt cacatgcagg 1620

cagggaccag ctcaaccctt ctttaatgtc atccagggag ggggccaggg atggagggga 1680

ggggttgagg agcgagaggc agttattttt gggtgggatt caccactttt cccatgaaga 1740

ggggagactt ggtattttgt tcaatcatta agaagacaaa gggtttgttg aacttgacct 1800

cgggggggat agacatgggt atggcctcta aaaacatggc cccagcagct tcagtccctt 1860

tctcgtcgat ggtcagcaca gccttatgca cggccttgga gagcttcagg ggtgcctcct 1920

ctgtgacccc ggagaggtca gccccattgc tgaagacctt agtgatgccc agttgaccca 1980

ggacgctctt cagatcatag gttccagtaa tggacagttt gggtaaatgt aagctggcag 2040

accttctgtc ttcattttcc aggaacttgg tgatgatatc gtgggtgagt tcattttcca 2100

ggtgctgtag tttcccctca tcaggcagga agaagatggc ggtggcattg cccaggtatt 2160

tcatcagcag cacccagctg gacagcttct tacagtgctg gatgttaaac atgcctaaac 2220

gcttcatcat aggcaccttc acggtggtca cctggtccac gtggaagtcc tcttcctcgg 2280

tgtccttgac ttcaaagggt ctctcccatt tgcctttaaa gaagatgtaa ttcaccagag 2340

caaaaactgt gtctctgtca agctccttga ccaaatccac aattttccct tgagtaccct 2400

tctccacgta atcgttgatc tgtttcttgg cctcttcggt gtccccgaag ttgacagtga 2460

aggcttctga gtggtacaac tttttaacat cctccaaaaa cttatccact agcttcaggc 2520

cctcgctgag gaacaggcca ttgccggtgg tcagctggag ctggctgtct ggctggttga 2580

gggtacggag gagttcctgg aagccttcat ggatctgagc ctccggaatc tccgtgaggt 2640

tgaaattcag gccctccagg atttcatcgt gagtgtcagc cttggtcccc agggagagca 2700

ttgcaaaggc tgtagcgatg ctcactgggg agaagaagat attggtgctg ttggactggt 2760

gtgccagctg gcggtatagg ctgaaggcga actcagccag gttgggggtg atcttgttga 2820

aggttgggtg atcctgatca tggtgggatg tatctgtctt ctgggcagca tctccctggg 2880

gatcctcagc cagggagaca gggaccaggc agcacaggcc tgccagcagg aggatgcccc 2940

acgagacaga agacggcatt gtcgattcac tgtcccaggt cagtggtggt gcctgaagct 3000

gaggagacag ggccctgtcc tcgtccgtat ttaagcagtg gatccagagg ggcaacgggg 3060

gaggctttcc tgctctcctc aagctctcct caagctctgt ctcttctggc aggcacagga 3120

gagtggcctg aaggctggca ggaggttgcc gcccctccaa cctggaattc ctggcagcag 3180

cagcggctag gccttcctcg gaggcccgac cccctcctcc ttcttggttc agctcaggac 3240

tctgagggtt gctgcgtgga ggcagtgcat gccctgggca cagtgcccag ttcctgccca 3300

<210> 26
<211> 1321
<212> DNA
<213> Macaca mulatta

<400> 26
atgtcattca gggagggggc cagggatgga ggggaggggc tgaggagtga caggcagtta 60

tttctgggtg ggattcacca cttttcccat gaagagggga gacttggtat tttgttcaat 120

cattaagaag acaaagggtt tgttgaactt gacctcgggg ggaatagaca tgggtatggc 180

ctctaaaaac atggccccag cagcttcagt ccctttctca tcgatggtca gcacagcctt 240

atgcacggcc ttggagagct tcaggggtgc ctcctccgtg atccccgaga ggtcagcccc 300

attgctgaag accttagtga tacccaggtg gcccaggact gtcttcagat cataggttcc 360

agtaatggcc agtctgggta aatgtaagtt ggcagacctg ctgttttcat tttccaggaa 420

cttggtgatg atatcatggg tgagttcatt ttccaggtgc tgcagtttcc cctcatcagg 480

caggaagaag atggcggtgg cattgcccag gtatttcatc agcagcaccc agctggacag 540

cttctcacag tggtagatgt taaacatgcc taaacgcctc atcatgggca ccttcacggt 600

ggtcgcctgg tccacgtgga agtcctcttc cttggtggcc tcaacgtcaa agggtctctc 660

ccatttgcct ttaaagaaga tgtaattcac cagagcaaaa actgtgtctc tgtcaagctc 720

cttgaccaaa tccacaattt tcccttgagt ttccttctcc acgtaattgt tgatctgttt 780

cttggcctct tcggtgtcct caaagttgac agagaaggct tctgagtggt acagtttttt 840

gacatcctcc aaaaacttat ccactacctt caggctcttg ttgaggaaca ggccgttgcc 900

ggtggtcagc tggagctggc tgtctggctt gttgagggta tggaggagtt cctggaagcc 960

ttcatggacc tgagcctccg gaatctccgt gacgttgaaa ttcaggccct ccaggatttc 1020

actgtgagtg tcagccttgg tccccaggga gagcattgca aaggctgtag cgatgctcac 1080

tggggagaag aagatattgg tgctgttgga ctggtgtgcc agctggcggt ataggctgaa 1140

gccgaactca gccaggctgg gggtgatctt gttgagggtt gggtggtcct gatcatggtg 1200

ggatgtatcc gtcttctggg cagcatctcc ctggggatcc tcagccagag agccggggag 1260

caggcagcac aggcctgcca gcaggaggac gccccatgag acagaagatg gcattgtcct 1320

g 1321

<210> 27
<211> 2064
<212> DNA
<213> Macaca mulatta

<400> 27
gtttgcagtc acacacgcag gcagggacca gctcaaccct tctttaatgt cattcaggga 60

gggggccagg gatggagggg aggggctgag gagtgacagg cagttatttc tgggtgggat 120

tcaccacttt tcccatgaag aggggagact tggtattttg ttcaatcatt aagaagacaa 180

agggtttgtt gaacttgacc tcgggggggaa tagacatggg tatggcctct aaaaacatgg 240

ccccagcagc ttcagtccct ttctcatcga tggtcagcac agccttatgc acggccttgg 300

agagcttcag gggtgcctcc tccgtgatcc ccgagaggtc agccccattg ctgaagacct 360

tagtgatacc caggtggccc aggactgtct tcagatcata ggttccagta atggccagtc 420

tgggtaaatg taagttggca gacctgctgt tttcattttc caggaacttg gtgatgatat 480

catgggtgag ttcattttcc aggtgctgca gtttcccctc atcaggcagg aagaagatgg 540

cggtggcatt gcccaggtat ttcatcagca gcacccagct ggacagcttc tcacagtggt 600

agatgttaaa catgcctaaa cgcctcatca tgggcacctt cacggtggtc gcctggtcca 660

cgtggaagtc ctcttccttg gtggcctcaa cgtcaaaggg tctctcccat ttgcctttaa 720

agaagatgta attcaccaga gcaaaaactg tgtctctgtc aagctccttg accaaatcca 780

caattttccc ttgagtttcc ttctccacgt aattgttgat ctgtttcttg gcctcttcgg 840

tgtcctcaaa gttgacagag aaggcttctg agtggtacag ttttttgaca tcctccaaaa 900

acttatccac taccttcagg ctcttgttga ggaacaggcc gttgccggtg gtcagctgga 960

gctggctgtc tggcttgttg agggtatgga ggagttcctg gaagccttca tggacctgag 1020

cctccggaat ctccgtgacg ttgaaattca ggccctccag gatttcactg tgagtgtcag 1080

ccttggtccc cagggagagc attgcaaagg ctgtagcgat gctcactggg gagaagaaga 1140

tattggtgct gttggactgg tgtgccagct ggcggtatag gctgaagccg aactcagcca 1200

ggctgggggt gatcttgttg agggttgggt ggtcctgatc atggtgggat gtatccgtct 1260

tctgggcagc atctccctgg ggatcctcag ccagagagcc ggggagcagg cagcacaggc 1320

ctgccagcag gaggacgccc catgagacag aagatggcat tgtcgattca ccgtcccagg 1380

tcagtggtgg tgcctgaggc tgaggagaca gagccctgtc cttgtccgta tttaagcagt 1440

gggtgcagag gggcaacggg ggaggctgct ggtgaatatt aaccaagatc accccagtta 1500

ccggaggagc aaacagggac taagttcaca ggctgggcgc tgagtcgccc gcccacgctg 1560

tccggacgct ctgcctgagc agcatacagc ctccactgca cgtaccaaaa ggagtcattg 1620

tacctggctc agaaaccaca gtgtcctgcg tccaaggtgg agggggtggc gtgagtcagc 1680

cagtcgctgg gagagtacca ctttgctggc cctctgctct cactgcagaa tccttagcgg 1740

ctgttccact ggtagcaaga tctaccattt actaattcac cccgaaatgc ctgatgctga 1800

agactgatgc cgccctggaa ttcctggcag cagcagtggc taggccttcc tcagagtgct 1860

gatcccctcc tcctcctttg ctcagctcag tactctgagg gttgctgcgt ggaggcagtg 1920

cacgccctgg gcacagggcc cagttcctgc ccacccagga agttggcctc gggtggcggg 1980

tggcggaggc aataggttgg ggaggggcgg ggagcttggg caggaagggg ccttgcccat 2040

tgccaggcag acacaagact gggc 2064

<210> 28
<211> 1608
<212> DNA
<213> Macaca mulatta

<400> 28
gtttgcagtc acacacgcag gcagggacca gctcaaccct tctttaatgt cattcaggga 60

gggggccagg gatggagggg aggggctgag gagtgacagg cagttatttc tgggtgggat 120

tcaccacttt tcccatgaag aggggagact tggtattttg ttcaatcatt aagaagacaa 180

agggtttgtt gaacttgacc tcgggggggaa tagacatggg tatggcctct aaaaacatgg 240

ccccagcagc ttcagtccct ttctcatcga tggtcagcac agccttatgc acggccttgg 300

agagcttcag gggtgcctcc tccgtgatcc ccgagaggtc agccccattg ctgaagacct 360

tagtgatacc caggtggccc aggactgtct tcagatcata ggttccagta atggccagtc 420

tgggtaaatg taagttggca gacctgctgt tttcattttc caggaacttg gtgatgatat 480

catgggtgag ttcattttcc aggtgctgca gtttcccctc atcaggcagg aagaagatgg 540

cggtggcatt gcccaggtat ttcatcagca gcacccagct ggacagcttc tcacagtggt 600

agatgttaaa catgcctaaa cgcctcatca tgggcacctt cacggtggtc gcctggtcca 660

cgtggaagtc ctcttccttg gtggcctcaa cgtcaaaggg tctctcccat ttgcctttaa 720

agaagatgta attcaccaga gcaaaaactg tgtctctgtc aagctccttg accaaatcca 780

caattttccc ttgagtttcc ttctccacgt aattgttgat ctgtttcttg gcctcttcgg 840

tgtcctcaaa gttgacagag aaggcttctg agtggtacag ttttttgaca tcctccaaaa 900

acttatccac taccttcagg ctcttgttga ggaacaggcc gttgccggtg gtcagctgga 960

gctggctgtc tggcttgttg agggtatgga ggagttcctg gaagccttca tggacctgag 1020

cctccggaat ctccgtgacg ttgaaattca ggccctccag gatttcactg tgagtgtcag 1080

ccttggtccc cagggagagc attgcaaagg ctgtagcgat gctcactggg gagaagaaga 1140

tattggtgct gttggactgg tgtgccagct ggcggtatag gctgaagccg aactcagcca 1200

ggctgggggt gatcttgttg agggttgggt ggtcctgatc atggtgggat gtatccgtct 1260

tctgggcagc atctccctgg ggatcctcag ccagagagcc ggggagcagg cagcacaggc 1320

ctgccagcag gaggacgccc catgagacag aagatggcat tgtcctggaa ttcctggcag 1380

cagcagtggc taggccttcc tcagagtgct gatcccctcc tcctcctttg ctcagctcag 1440

tactctgagg gttgctgcgt ggaggcagtg cacgccctgg gcacagggcc cagttcctgc 1500

ccacccagga agttggcctc gggtggcggg tggcggaggc aataggttgg ggaggggcgg 1560

ggagcttggg caggaagggg ccttgcccat tgccaggcag acacaaga 1608

<210> 29
<211> 16
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown:
RFGF peptide

<400> 29
Ala Ala Val Ala Leu Leu Pro Ala Val Leu Leu Ala Leu Leu Ala Pro
1 5 10 15

<210> 30
<211> 11
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown:
RFGF analogue peptide

<400> 30
Ala Ala Leu Leu Pro Val Leu Leu Ala Ala Pro
1 5 10

<210> 31
<211> 13
<212> PRT
<213> Human immunodeficiency virus

<400> 31
Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln
1 5 10

<210> 32
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 32
Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
1 5 10 15

<210> 33
<211> 21
<212> RNA
<213> Artificial Sequence

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

<400> 33
cuucuuaaug auugaacaaa a 21

<210> 34
<211> 23
<212> DNA
<213> Artificial Sequence

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

<220>
<223> Description of Combined DNA/RNA Molecule: Synthetic
oligonucleotide

<400> 34
uuuugutcaa ucauuaagaa gac 23

<210> 35
<211> 21
<212> RNA
<213> Artificial Sequence

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

<400> 35
cuucuuaaug auugaacaaa a 21

<210> 36
<211> 21
<212> RNA
<213> Artificial Sequence

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

<400> 36
cuucuuaaug auugaacaaa a 21

<210> 37
<211> 23
<212> RNA
<213> Artificial Sequence

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

<400> 37
uuuuguucaa ucauuaagaa gac 23

<210> 38
<211> 23
<212> DNA
<213> Artificial Sequence

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

<220>
<223> Description of Combined DNA/RNA Molecule: Synthetic oligonucleotide

<400> 38
uuuugtucaa ucauuaagaa gac 23

<210> 39
<211> 23
<212> DNA
<213> Artificial Sequence

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

<220>
<223> Description of Combined DNA/RNA Molecule: Synthetic oligonucleotide

<400> 39
uuuugutcaa ucauuaagaa gac 23

<210> 40

<400> 40
000

<210> 41

<400> 41
000

<210> 42

<400> 42
000

<210> 43

<400> 43
000

<210> 44

<400> 44
000

<210> 45

<400> 45
000

<210> 46

<400> 46
000

<210> 47

<400> 47
000

<210> 48

<400> 48
000

<210> 49

<400> 49
000

<210> 50

<400> 50
000

<210> 51

<400> 51
000

<210> 52

<400> 52
000

<210> 53

<400> 53
000

<210> 54

<400> 54
000

<210> 55

<400> 55
000

<210> 56

<400> 56
000

<210> 57

<400> 57
000

<210> 58

<400> 58
000

<210> 59

<400> 59

000

<210> 60

<400> 60
000

<210> 61

<400> 61
000

<210> 62

<400> 62
000

<210> 63

<400> 63
000

<210> 64

<400> 64
000

<210> 65

<400> 65
000

<210> 66

<400> 66
000

<210> 67

<400> 67
000

<210> 68

<400> 68
000

<210> 69

<400> 69
000

<210> 70

<400> 70
000

<210> 71

<400> 71
000

<210> 72

<400> 72
000

<210> 73

<400> 73
000

<210> 74

<400> 74
000

<210> 75

<400> 75
000

<210> 76

<400> 76
000

<210> 77

<400> 77
000

<210> 78

<400> 78
000

<210> 79

<400> 79
000

<210> 80

<400> 80
000

<210> 81

<400> 81
000

<210> 82

<400> 82
000

<210> 83

<400> 83
000

<210> 84

<400> 84
000

<210> 85

<400> 85

000

<210> 86

<400> 86
000

<210> 87

<400> 87
000

<210> 88

<400> 88
000

<210> 89

<400> 89
000

<210> 90

<400> 90
000

<210> 91

<400> 91
000

<210> 92

<400> 92
000

<210> 93

<400> 93
000

<210> 94

<400> 94
000

<210> 95

<400> 95
000

<210> 96

<400> 96
000

<210> 97

<400> 97
000

<210> 98

<400> 98
000

<210> 99

<400> 99
000

<210> 100

<400> 100
000

<210> 101

<400> 101
000

<210> 102

<400> 102
000

<210> 103

<400> 103
000

<210> 104

<400> 104
000

<210> 105

<400> 105
000

<210> 106

<400> 106
000

<210> 107

<400> 107
000

<210> 108

<400> 108
000

<210> 109

<400> 109
000

<210> 110

<400> 110
000

<210> 111

<400> 111

000

<210> 112

<400> 112
000

<210> 113

<400> 113
000

<210> 114

<400> 114
000

<210> 115

<400> 115
000

<210> 116

<400> 116
000

<210> 117

<400> 117
000

<210> 118

<400> 118
000

<210> 119

<400> 119
000

<210> 120

<400> 120
000

<210> 121

<400> 121
000

<210> 122

<400> 122
000

<210> 123

<400> 123
000

<210> 124

<400> 124
000

<210> 125

<400> 125
000

<210> 126

<400> 126
000

<210> 127

<400> 127
000

<210> 128

<400> 128
000

<210> 129

<400> 129
000

<210> 130

<400> 130
000

<210> 131

<400> 131
000

<210> 132

<400> 132
000

<210> 133

<400> 133
000

<210> 134

<400> 134
000

<210> 135

<400> 135
000

<210> 136

<400> 136
000

<210> 137

<400> 137

000

<210> 138

<400> 138
000

<210> 139

<400> 139
000

<210> 140

<400> 140
000

<210> 141

<400> 141
000

<210> 142

<400> 142
000

<210> 143

<400> 143
000

<210> 144

<400> 144
000

<210> 145

<400> 145
000

<210> 146

<400> 146
000

<210> 147

<400> 147
000

<210> 148

<400> 148
000

<210> 149

<400> 149
000

<210> 150

<400> 150
000

<210> 151

<400> 151
000

<210> 152

<400> 152
000

<210> 153

<400> 153
000

<210> 154

<400> 154
000

<210> 155

<400> 155
000

<210> 156

<400> 156
000

<210> 157

<400> 157
000

<210> 158

<400> 158
000

<210> 159

<400> 159
000

<210> 160

<400> 160
000

<210> 161

<400> 161
000

<210> 162

<400> 162
000

<210> 163

<400> 163

000

<210> 164

<400> 164
000

<210> 165

<400> 165
000

<210> 166

<400> 166
000

<210> 167

<400> 167
000

<210> 168

<400> 168
000

<210> 169

<400> 169
000

<210> 170

<400> 170
000

<210> 171

<400> 171
000

<210> 172

<400> 172
000

<210> 173

<400> 173
000

<210> 174

<400> 174
000

<210> 175

<400> 175
000

<210> 176

<400> 176
000

<210> 177

<400> 177
000

<210> 178

<400> 178
000

<210> 179

<400> 179
000

<210> 180

<400> 180
000

<210> 181

<400> 181
000

<210> 182

<400> 182
000

<210> 183

<400> 183
000

<210> 184

<400> 184
000

<210> 185

<400> 185
000

<210> 186

<400> 186
000

<210> 187

<400> 187
000

<210> 188

<400> 188
000

<210> 189

<400> 189

000

<210> 190

<400> 190
000

<210> 191

<400> 191
000

<210> 192

<400> 192
000

<210> 193

<400> 193
000

<210> 194

<400> 194
000

<210> 195

<400> 195
000

<210> 196

<400> 196
000

<210> 197

<400> 197
000

<210> 198

<400> 198
000

<210> 199

<400> 199
000

<210> 200

<400> 200
000

<210> 201

<400> 201
000

<210> 202

<400> 202
000

<210> 203

<400> 203
000

<210> 204

<400> 204
000

<210> 205

<400> 205
000

<210> 206

<400> 206
000

<210> 207

<400> 207
000

<210> 208

<400> 208
000

<210> 209

<400> 209
000

<210> 210

<400> 210
000

<210> 211

<400> 211
000

<210> 212

<400> 212
000

<210> 213

<400> 213
000

<210> 214

<400> 214
000

<210> 215

<400> 215

000

<210> 216

<400> 216
000

<210> 217

<400> 217
000

<210> 218

<400> 218
000

<210> 219

<400> 219
000

<210> 220

<400> 220
000

<210> 221

<400> 221
000

<210> 222

<400> 222
000

<210> 223

<400> 223
000

<210> 224

<400> 224
000

<210> 225

<400> 225
000

<210> 226

<400> 226
000

<210> 227

<400> 227
000

<210> 228

<400> 228
000

<210> 229

<400> 229
000

<210> 230

<400> 230
000

<210> 231

<400> 231
000

<210> 232

<400> 232
000

<210> 233

<400> 233
000

<210> 234

<400> 234
000

<210> 235

<400> 235
000

<210> 236

<400> 236
000

<210> 237

<400> 237
000

<210> 238

<400> 238
000

<210> 239

<400> 239
000

<210> 240

<400> 240
000

<210> 241

<400> 241

000

<210> 242

<400> 242
000

<210> 243

<400> 243
000

<210> 244

<400> 244
000

<210> 245

<400> 245
000

<210> 246

<400> 246
000

<210> 247

<400> 247
000

<210> 248

<400> 248
000

<210> 249

<400> 249
000

<210> 250

<400> 250
000

<210> 251

<400> 251
000

<210> 252

<400> 252
000

<210> 253

<400> 253
000

<210> 254

<400> 254
000

<210> 255

<400> 255
000

<210> 256

<400> 256
000

<210> 257

<400> 257
000

<210> 258

<400> 258
000

<210> 259

<400> 259
000

<210> 260

<400> 260
000

<210> 261

<400> 261
000

<210> 262

<400> 262
000

<210> 263

<400> 263
000

<210> 264

<400> 264
000

<210> 265

<400> 265
000

<210> 266

<400> 266
000

<210> 267

<400> 267

000

<210> 268

<400> 268
000

<210> 269

<400> 269
000

<210> 270

<400> 270
000

<210> 271

<400> 271
000

<210> 272

<400> 272
000

<210> 273

<400> 273
000

<210> 274

<400> 274
000

<210> 275

<400> 275
000

<210> 276

<400> 276
000

<210> 277

<400> 277
000

<210> 278

<400> 278
000

<210> 279

<400> 279
000

<210> 280

<400> 280
000

<210> 281

<400> 281
000

<210> 282

<400> 282
000

<210> 283

<400> 283
000

<210> 284

<400> 284
000

<210> 285

<400> 285
000

<210> 286

<400> 286
000

<210> 287

<400> 287
000

<210> 288

<400> 288
000

<210> 289

<400> 289
000

<210> 290

<400> 290
000

<210> 291

<400> 291
000

<210> 292

<400> 292
000

<210> 293

<400> 293

000

<210> 294

<400> 294
000

<210> 295

<400> 295
000

<210> 296

<400> 296
000

<210> 297

<400> 297
000

<210> 298

<400> 298
000

<210> 299

<400> 299
000

<210> 300

<400> 300
000

<210> 301

<400> 301
000

<210> 302

<400> 302
000

<210> 303

<400> 303
000

<210> 304

<400> 304
000

<210> 305

<400> 305
000

<210> 306

<400> 306
000

<210> 307

<400> 307
000

<210> 308

<400> 308
000

<210> 309

<400> 309
000

<210> 310

<400> 310
000

<210> 311

<400> 311
000

<210> 312

<400> 312
000

<210> 313

<400> 313
000

<210> 314

<400> 314
000

<210> 315

<400> 315
000

<210> 316

<400> 316
000

<210> 317

<400> 317
000

<210> 318

<400> 318
000

<210> 319

<400> 319

000

<210> 320

<400> 320
000

<210> 321

<400> 321
000

<210> 322

<400> 322
000

<210> 323

<400> 323
000

<210> 324

<400> 324
000

<210> 325

<400> 325
000

<210> 326

<400> 326
000

<210> 327

<400> 327
000

<210> 328

<400> 328
000

<210> 329

<400> 329
000

<210> 330

<400> 330
000

<210> 331

<400> 331
000

<210> 332

<400> 332
000

<210> 333

<400> 333
000

<210> 334

<400> 334
000

<210> 335

<400> 335
000

<210> 336

<400> 336
000

<210> 337

<400> 337
000

<210> 338

<400> 338
000

<210> 339

<400> 339
000

<210> 340

<400> 340
000

<210> 341

<400> 341
000

<210> 342

<400> 342
000

<210> 343

<400> 343
000

<210> 344

<400> 344
000

<210> 345

<400> 345

000

<210> 346

<400> 346
000

<210> 347

<400> 347
000

<210> 348

<400> 348
000

<210> 349

<400> 349
000

<210> 350

<400> 350
000

<210> 351

<400> 351
000

<210> 352

<400> 352
000

<210> 353

<400> 353
000

<210> 354

<400> 354
000

<210> 355

<400> 355
000

<210> 356

<400> 356
000

<210> 357

<400> 357
000

<210> 358

<400> 358
000

<210> 359

<400> 359
000

<210> 360

<400> 360
000

<210> 361

<400> 361
000

<210> 362

<400> 362
000

<210> 363

<400> 363
000

<210> 364

<400> 364
000

<210> 365

<400> 365
000

<210> 366

<400> 366
000

<210> 367

<400> 367
000

<210> 368

<400> 368
000

<210> 369

<400> 369
000

<210> 370

<400> 370
000

<210> 371

<400> 371

000

<210> 372

<400> 372
000

<210> 373

<400> 373
000

<210> 374

<400> 374
000

<210> 375

<400> 375
000

<210> 376

<400> 376
000

<210> 377

<400> 377
000

<210> 378

<400> 378
000

<210> 379

<400> 379
000

<210> 380

<400> 380
000

<210> 381

<400> 381
000

<210> 382

<400> 382
000

<210> 383

<400> 383
000

<210> 384

<400> 384
000

<210> 385

<400> 385
000

<210> 386

<400> 386
000

<210> 387

<400> 387
000

<210> 388

<400> 388
000

<210> 389

<400> 389
000

<210> 390

<400> 390
000

<210> 391

<400> 391
000

<210> 392

<400> 392
000

<210> 393

<400> 393
000

<210> 394

<400> 394
000

<210> 395

<400> 395
000

<210> 396

<400> 396
000

<210> 397

<400> 397

000

<210> 398

<400> 398
000

<210> 399

<400> 399
000

<210> 400

<400> 400
000

<210> 401

<400> 401
000

<210> 402

<400> 402
000

<210> 403

<400> 403
000

<210> 404

<400> 404
000

<210> 405

<400> 405
000

<210> 406

<400> 406
000

<210> 407

<400> 407
000

<210> 408

<400> 408
000

<210> 409

<400> 409
000

<210> 410

<400> 410
000

<210> 411

<400> 411
000

<210> 412

<400> 412
000

<210> 413

<400> 413
000

<210> 414

<400> 414
000

<210> 415

<400> 415
000

<210> 416

<400> 416
000

<210> 417
<211> 21
<212> RNA
<213> Artificial Sequence

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

<400> 417
cuucuuaaug auugaacaaa a 21

<210> 418
<211> 21
<212> RNA
<213> Artificial Sequence

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

<400> 418
cuucuuaaug auugaacaaa a 21

<210> 419
<211> 23
<212> RNA
<213> Artificial Sequence

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

<400> 419
uuuuguucaa ucauuaagaa gac 23

<210> 420
<211> 23
<212> RNA
<213> Artificial Sequence

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

<400> 420
uuuuguucaa ucauuaagaa gac 23