SEQUENCE LISTING

<110> SYNTHETIC GENOMICS, INC.
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LARTIGUE, CAROLE
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ALGIRE, MIKKEL A.
SMITH, HAMILTON O.
MERRYMAN, CHARLES E.
NOSKOV, VLADIMIR N.
CHUANG, RAY-YUAN

<120> METHODS FOR CLONING AND MANIPULATING GENOMES

<130> 616872004140

<140> Not Yet Assigned
<141> Concurrently herewith

<150> 61/158,320
<151> 2009-03-06

<160> 195

<170> PatentIn version 3.5

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<400> 108
agcattagct tcattactaa ag 22

<210> 109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 109
taacatttat gaaaaacgaa 20

<210> 110
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 110
accattttta ataatgtaca tag 23

<210> 111
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 111
ttgccattac tactactact act 23

<210> 112
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

sequence
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 112
tcttcatcaa cttcatca 18

<210> 113
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 113
tatgttcatc ccttcagg 18

<210> 114
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 114
ctctctaatg cagggaga 18

<210> 115
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 115
tgaactcaca aaaacaac 18

<210> 116
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 116
tgcagaagaa gttgttac 18

<210> 117
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 117
acaaaatcac ctaaagaaac aat 23

<210> 118
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 118
ggttaatttg agaagaacat attg 24

<210> 119
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 119
aaccaatcag tacccttgc 19

<210> 120
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 120
agcaaactta attagtggga c 21

<210> 121
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 121
caaacacttt cgtgaaacag g 21

<210> 122
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 122
gtttcaactc caataatagt aggg 24

<210> 123
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 123
caccgcttca gtcactacaa g 21

<210> 124
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 124
gctattgaat cacctgatcc tg 22

<210> 125
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 125
ggcacctaag ttttgaga 18

<210> 126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 126
cttgaaatgc taatttggtg 20

<210> 127
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 127
tgaaaccaag attcagattg c 21

<210> 128
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

sequence

<400> 128
ggtcgtctat gtgtaagtca cc 22

<210> 129
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 129
aatttgactc aacacggg 18

<210> 130
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 130
gacgggcggt gtgtac 16

<210> 131
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 131
tacgaggcgc gtgtaagtta caggcaagcg atcctagtac actctatatc agagcagatt 60

gtactgagag tgcacc 76

<210> 132
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 132
ctacataaga acacctttgg tggagggaac atcgttggta ccattgggcg cgcatctgtg 60

cggtatttca caccgc 76

<210> 133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 133
attattccat cattaaaaga 20

<210> 134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 134
agtcaagtcc agactcctgt 20

<210> 135
<211> 90
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 135
cagatggtat tcctgaaagg atatcaataa taagtgaaag ttttttttctt atttttggtt 60

gcggccgctt gatttcggtt tctttgaaat 90

<210> 136
<211> 85
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 136
ttaattattg ctagttatat aggggttaga acttcatttt tccttgttta tcgatgcagc 60

ggccgcgggt ccttttcatc acgtg 85

<210> 137
<211> 1708
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 137
ttgatttcgg tttctttgaa atttttttga ttcggtaatc tccgaacaga aggaagaacg 60

aaggaaggag cacagactta gattggtata tatacgcata tgtagtgttg aagaaacatg 120

aaattgccca gtattcttaa cccaactgca cagaacaaaa acctgcagga aacgaagata 180

aatcatgtcg aaagctacat ataaggaacg tgctgctact catcctagtc ctgttgctgc 240

caagctattt aatatcatgc acgaaaagca aacaaacttg tgtgcttcat tggatgttcg 300

taccaccaag gaattactgg agttagttga agcattaggt cccaaaattt gtttactaaa 360

aacacatgtg gatatcttga ctgatttttc catggagggc acagttaagc cgctaaaggc 420

attatccgcc aagtacaatt ttttactctt cgaagacaga aaatttgctg acattggtaa 480

tacagtcaaa ttgcagtact ctgcgggtgt atacagaata gcagaatggg cagacattac 540

gaatgcacac ggtgtggtgg gcccaggtat tgttagcggt ttgaagcagg cggcagaaga 600

agtaacaaag gaacctagag gccttttgat gttagcagaa ttgtcatgca agggctccct 660

atctactgga gaatatacta agggtactgt tgacattgcg aagagcgaca aagattttgt 720

tatcggcttt attgctcaaa gagacatggg tggaagagat gaaggttacg attggttgat 780

tatgacaccc ggtgtgggtt tagatgacaa gggagacgca ttgggtcaac agtatagaac 840

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cgtcaaggag aaaaaaccgg cctgagagca ggaagagcaa gataaaaggt agtatttgtt 1560

ggcgatcccc ctagagtctt ttacatcttc ggaaaacaaa aactattttt tctttaattt 1620

ctttttttac tttctatttt taatttatat atttatatta aaaaatttaa attataatta 1680

tttttatagc acgtgatgaa aaggaccc 1708

<210> 138
<211> 302
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 138
ttaaagtcag ttatttatct acagcaattg ctgtcattac tttaattatt tgttcttaaa 60

gcaacattcc cttaccaaaa tttaggtttc ttgcttgtgg agtttaccgc gtttcatacc 120

tggttttcac caagctcgtc tctgtggcac tttcaaaaca tcatcatagt attaacctta 180

gactagttat gtcgttatgg ctatcacatc ctaaatctta tcgctttgat ttacacaaac 240

actacttgca ttccagcaag tgcaagcatg gactttcctc tactttaaat atatctttaa 300

ag 302

<210> 139
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 139
ttaaagtcag ttatttatct acagc 25

<210> 140
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 140
ctttaaagat atatttaaag tagagg 26

<210> 141
<211> 80
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 141
cagatggtat tcctgaaagg atatcaataa taagtgaaag ttttttttctt atttttggtt 60

cagagcagat tgtactgaga 80

<210> 142
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 142
ttaattattg ctagttatat aggggttaga acttcatttt tccttgttta tcgatgcacg 60

catctgtgcg gtatttca 78

<210> 143
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 143
gccattgttt cactaattgc 20

<210> 144
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 144
taatcctatc tttggagctt 20

<210> 145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 145
ctccatcatg cgcagtaata 20

<210> 146
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 146
ctttaaagat atatttaaag tagagg 26

<210> 147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 147
ttgatttcgg tttctttgaa 20

<210> 148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 148
caggcaggaa tttgattccc 20

<210> 149
<211> 7451
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 149
gacgaaaggg cctcgtgata cgcctatttt ataggttaa tgtcatgata ataatggttt 60

cttagacgtc aggtggcact tttcggggaa atgtgcgcgg aacccctatt tgtttatttt 120

tctaaataca ttcaaatatg tatccgctca tgagacaata accctgataa atgcttcaat 180

aatattgaaa aaggaagagt atgagtattc aacatttccg tgtcgccctt attccctttt 240

ttgcggcatt ttgccttcct gtttttgctc acccagaaac gctggtgaaa gtaaaagatg 300
ctgaagatca gttgggtgca cgagtgggtt acatcgaact ggatctcaac agcggtaaga 360
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<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

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agggtaatac ggat 74

<210> 153
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 153
atcttgtcta tttaattcta aaacagggta ataactgata taattaaatt gaag 54

<210> 154
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 154
aatttaatta tatcagttat taccctgttt tagaattaaa tagacaagat aatgg 55

<210> 155
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 155
ataagtaatt ttttatttta acaatttaat aatcttcttt aacaatatct tgcactacaa 60

attcttgttt attagtta 78

<210> 156
<211> 7477
<212> DNA
<213> Artificial Sequence

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

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atattgaaaa aggaagagta tgagtattca acatttccgt gtcgccctta ttcccttttt 180

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<210> 157
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<220>
<221> source
<223> Description of Artificial Sequence: Synthetic oligonucleotide

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<210> 158
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic oligonucleotide

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<210> 159
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<212> DNA
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<220>
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<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 160
ttgatttcgg tttctttgaa 20

<210> 161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 161
gggtaataac tgatataatt 20

<210> 162
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 162
gcttctaatt actagtgagt taactgataa aatcaaacaa caattaaagt ttgatttcgg 60

tttctttgaa 70

<210> 163
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 163
ttaaagcaat ggctaaagta cctgaaccac aacaaaggtc aagtgcagtt gggtaataac 60

tgata 65

<210> 164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 164
caatattgga acactatggt 20

<210> 165
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 165
acatcaagtg tatcacactt 20

<210> 166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 166
gttagtttac caatccagtc 20

<210> 167
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<212> DNA
<213> Artificial Sequence

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

<400> 167
aatgcttgga tatcaatatc 20

<210> 168
<211> 20
<212> DNA
<213> Artificial Sequence

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

<400> 168
acggattaga agccgccgag 20

<210> 169
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 169
gatctgactt attatttcag 20

<210> 170
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 170
ttaaagaaac cgaaatcaag atctgactta ttatttca 38

<210> 171
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 171
ctgaaataat aagtcagatc ttgatttcgg tttctttgaa 40

<210> 172
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 172
aagtgtgata cacttgatgt ttatggtagt gatattgata tccaagcatt tagggataac 60

agggtaatac ggattagaag ccgccgag 88

<210> 173
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 173
aagactagac tctgaataac taattaatcc catttgtgta tcagtattta gggtaataac 60

tgatataatt 70

<210> 174
<211> 40
<212> DNA
<213> Artificial Sequence

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

<400> 174
aattatatca gttattaccc caatattgga acactatggt 40

<210> 175
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 175
accatagtgt tccaatattg gggtaataac tgatataatt 40

<210> 176
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 176
aagtgtgata cacttgatgt ttatggtagt gatattgata tccaagcatt ttgatttcgg 60

tttctttgaa 70

<210> 177
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 177
aagactagac tctgaataac taattaatcc catttgtgta tcagtattta aatgcttgga 60

tatcaatatc 70

<210> 178
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 178
aagtaactag caatttgttg 20

<210> 179
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 179
aagtgtgata cacttgatgt ttatggtagt gatattgata tccaagcatt tagggataac 60

agggtaatac ggattagaag ccgccgag 88

<210> 180
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<223> Description of Artificial Sequence: Synthetic primer

<400> 180
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tatcaatatc 70

<210> 181
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 181
ggtttttttct ccttgacgtt aa 22

<210> 182
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 182
atgtccaatt tactgaccgt 20

<210> 183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 183
ctaatcgcca tcttccagca 20

<210> 184
<211> 40
<212> DNA
<213> Artificial Sequence

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

<400> 184
aacgtcaagg agaaaaaacc atgtccaatt tactgaccgt 40

<210> 185
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 185
acggtcagta aattggacat ggtttttct ccttgacgtt 40

<210> 186
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 186
tgctggaaga tggcgattag ttgatttcgg tttctttgaa 40

<210> 187
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 187
ttcaaagaaa ccgaaatcaa ctaatcgcca tcttccagca 40

<210> 188
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 188
taccgttcgt ataatgtatg ctatacgaag ttatacggat tagaagccgc cgag 54

<210> 189
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 189
taccgttcgt atagcataca ttatacgaag ttatgggtaa taactgatat aatt 54

<210> 190
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 190
aagtgtgata cacttgatgt ttatggtagt gatattgata tccaagcatt taccgttcgt 60

ataatgtatg 70

<210> 191
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 191
aagactagac tctgaataac taattaatcc catttgtgta tcagtatttt accgttcgta 60

tagcataca 69

<210> 192
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 192
gatttttatg ctggatctgg aaca 24

<210> 193
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 193
tccgtattac cctgttatcc cta 23

<210> 194
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic primer

<400> 194
ctacttcaaa tagtattctt ttaagcg 27

<210> 195
<211> 666
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 195
aggaaggctg tgtgaatttc attcgacaag ataaaggaaa ttagaacatt tactttagtt 60

acaaataatg aaaataatat agggattgat gtttgctatg aacgcttgtt tagaataaat 120

aatggtaaat caactgataa taaaacagat tttaaatgaa tagaaaaaaa cgaaccctat 180

ctgtctaatt tagatgtttt tgatattaaa tactattcaa ctaaattgtt tgaagataat 240

agtgctaatg aaataatcaa aaaacaattc ataaaaatgt taaatgatct aaaaataaat 300

gctgatgata tttctacaat taaaacttta agacaattaa ctgcactaaa accaatctca 360

ggtggacaaa acaatgagat taactaataa acaagaattt gtagtgcaag atattgttaa 420

agaagattat taaattgtta aaataaaaaa ttacttattt aagcgggact atttctattt 480

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catgcctatt aaatttaaga tcaagagcag tttttctaac ccccgaaaaa aaactcacaa 660

caaaaa 666