

3182\_043PC02\_SequenceListing\_ascii  
SEQUENCE LISTING

<110> Breibart, Eyal  
Leubitz, Andrea  
Feige, Erez  
Penson, Richard

<120> TREATMENT METHODS USING ADENOVIRUS

<130> 3182.043PC02

<140> To be assigned

<141> Herewith

<160> 27

<170> PatentIn version 3.5

<210> 1

<211> 1365

<212> DNA

<213> Homo sapiens TNFRSF1A

|                                                                    |      |
|--------------------------------------------------------------------|------|
| <400> 1                                                            |      |
| atgggcctct ccaccgtgcc tgacctgctg ctgccgctgg tgctcctgga gctgttggtg  | 60   |
| ggaatatacc cctcaggggt tattggactg gtccctcacc taggggacag ggagaagaga  | 120  |
| gatagtgtgt gtccccaagg aaaatatatc caccctcaaa ataattcgat ttgctgtacc  | 180  |
| aagtgccaca aaggaaccta cttgtacaat gactgtccag gcccggggca ggatacggac  | 240  |
| tgcaaggagt gtgagagcgg ctccttcacc gcttcagaaa accacctcag aactgcctc   | 300  |
| agctgctcca aatgccgaaa ggaaatgggt cagggtggaga tctcttcttg cacagtggac | 360  |
| cgggacaccg tgtgtggctg caggaagaac cagtaccggc attattggag tgaaaacctt  | 420  |
| ttccagtgtc tcaattgcag cctctgcctc aatgggaccg tgcacctctc ctgccaggag  | 480  |
| aaacagaaca ccgtgtgcac ctgccatgca ggtttctttc taagagaaaa cgagtgtgtc  | 540  |
| tcctgtagta actgtaagaa aagcctggag tgcacgaagt tgtgcctacc ccagattgag  | 600  |
| aatgttaagg gactgagga ctcaggcacc acagtgtgtg tgcccctggt catcttcttt   | 660  |
| ggtctttgcc ttttatccct cctcttcatt ggtttaatgt atcgctacca acggtggaag  | 720  |
| tccaagctct actccattgt ttgtgggaaa tcgacacctg aaaaagaggg ggagcttgaa  | 780  |
| ggaactacta ctaagccctt ggccccaac ccaagcttca gtcccactcc aggccttcacc  | 840  |
| cccaccctgg gcttcagtcc cgtgcccagt tccaccttca cctccagctc cacctatacc  | 900  |
| cccggtgact gtcccaactt tgcggctccc cgagagagg tggcaccacc ctatcagggg   | 960  |
| gctgaccca tccttgcgac agccctcgcc tccgaccca tcccaaccc ccttcagaag     | 1020 |
| tgggaggaca gcgccacaa gccacagagc ctagacactg atgacccgc gacgctgtac    | 1080 |
| gccgtggtgg agaacgtgcc cccgttgcg cgtgaaggaat tcgtgcggcg cctagggctg  | 1140 |
| agcgaccacg agatcgatcg gctggagctg cagaacgggc gctgcctgcg cgaggcgcaa  | 1200 |
| tacagcatgc tggcgacctg gaggcggcgc acgccgcggc gcgaggccac gctggagctg  | 1260 |
| ctgggacgcg tgctccgcga catggacctg ctgggctgcc tggaggacat cgaggaggcg  | 1320 |

ctttgcggcc ccgccgcct cccgcccgcg cccagtcttc tcaga

1365

<210> 2  
 <211> 455  
 <212> PRT  
 <213> Homo sapiens wild Type TNF Receptor 1

<400> 2

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

Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile Gly Leu Val Pro  
 20 25 30

His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys  
 35 40 45

Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys  
 50 55 60

Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp  
 65 70 75 80

Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu  
 85 90 95

Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val  
 100 105 110

Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg  
 115 120 125

Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe  
 130 135 140

Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu  
 145 150 155 160

Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu  
 165 170 175

Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr  
 180 185 190

Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser  
 195 200 205

Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu  
 210 215 220

Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys  
 225 230 235 240

# 3182\_043PC02\_SequenceListing\_ascii

Ser Lys Leu Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu  
245 250 255

Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser  
260 265 270

Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val  
275 280 285

Pro Ser Ser Thr Phe Thr Ser Ser Ser Thr Tyr Thr Pro Gly Asp Cys  
290 295 300

Pro Asn Phe Ala Ala Pro Arg Arg Glu Val Ala Pro Pro Tyr Gln Gly  
305 310 315 320

Ala Asp Pro Ile Leu Ala Thr Ala Leu Ala Ser Asp Pro Ile Pro Asn  
325 330 335

Pro Leu Gln Lys Trp Glu Asp Ser Ala His Lys Pro Gln Ser Leu Asp  
340 345 350

Thr Asp Asp Pro Ala Thr Leu Tyr Ala Val Val Glu Asn Val Pro Pro  
355 360 365

Leu Arg Trp Lys Glu Phe Val Arg Arg Leu Gly Leu Ser Asp His Glu  
370 375 380

Ile Asp Arg Leu Glu Leu Gln Asn Gly Arg Cys Leu Arg Glu Ala Gln  
385 390 395 400

Tyr Ser Met Leu Ala Thr Trp Arg Arg Arg Thr Pro Arg Arg Glu Ala  
405 410 415

Thr Leu Glu Leu Leu Gly Arg Val Leu Arg Asp Met Asp Leu Leu Gly  
420 425 430

Cys Leu Glu Asp Ile Glu Glu Ala Leu Cys Gly Pro Ala Ala Leu Pro  
435 440 445

Pro Ala Pro Ser Leu Leu Arg  
450 455

<210> 3  
<211> 591  
<212> DNA  
<213> Homo sapiens Ligand Binding Domain of TNFR1

<400> 3  
atgggcctct ccaccgtgcc tgacctgctg ctgccgctgg tgctcctgga gctgttggtg 60  
ggaatatacc cctcaggggt tattggactg gtcctcacc taggggacag ggagaagaga 120

# 3182\_043PC02\_SequenceListing\_ascii

gatagtgtgt gtccccaagg aaaatatatc caccctcaaa ataattcgat ttgctgtacc 180  
aagtgccaca aaggaaccta cttgtacaat gactgtccag gcccggggca ggatacggac 240  
tgcaggaggt gtgagagcgg ctctttcacc gcttcagaaa accacctcag acactgcctc 300  
agctgctcca aatgccgaaa ggaaatgggt caggtggaga tctcttcttg cacagtggac 360  
cgggacaccg tgtgtggctg caggaagaac cagtaccggc attattggag tgaaaacctt 420  
ttccagtgtc tcaattgcag cctctgcctc aatgggaccg tgcacctctc ctgccaggag 480  
aaacagaaca ccgtgtgcac ctgccatgca ggtttctttc taagagaaaa cgagtgtgtc 540  
tcctgtagta actgtaagaa aagcctggag tgcacgaagt tgtgcctacc a 591

<210> 4

<211> 197

<212> PRT

<213> Homo sapiens Ligand Binding Domain of TNFR1

<400> 4

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

Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile Gly Leu Val Pro  
20 25 30

His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys  
35 40 45

Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys  
50 55 60

Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp  
65 70 75 80

Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu  
85 90 95

Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val  
100 105 110

Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg  
115 120 125

Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe  
130 135 140

Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu  
145 150 155 160

Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu  
165 170 175

# 3182\_043PC02\_SequenceListing\_ascii

Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr  
180 185 190

Lys Leu Cys Leu Pro  
195

<210> 5  
<211> 1008  
<212> DNA  
<213> Homo sapiens full-length FAS

<400> 5  
atgctgggca tctggaccct cctacctctg gttcttacgt ctgttgctag attatcgtcc 60  
aaaagtgtta atgcccaagt gactgacatc aactccaagg gattggaatt gaggaagact 120  
gttactacag ttgagactca gaacttgga ggcctgcatc atgatggcca attctgccat 180  
aagccctgtc ctccagggtga aaggaaagct agggactgca cagtcaatgg ggatgaacca 240  
gactgctgtc cctgccaaga agggaaggag tacacagaca aagcccatTT ttcttccaaa 300  
tgcagaagat gtagattgtg tgatgaagga catggcttag aagtggaaat aaactgcacc 360  
cggacccaga ataccaagtg cagatgtaaa ccaaactttt tttgtaactc tactgtatgt 420  
gaacactgtg acccttgcac caaatgtgaa catggaatca tcaaggaatg cacactcacc 480  
agcaacacca agtgcaaaga ggaaggatcc agatctaact tggggtggct ttgtcttctt 540  
cttttgccaa ttccactaat tgtttgggtg aagagaaagg aagtacagaa aacatgcaga 600  
aagcacagaa aggaaaacca aggttctcat gaatctccaa ctttaaattcc tgaaacagtg 660  
gcaataaatt tatctgatgt tgacttgagt aaatatatca ccactattgc tggagtcatg 720  
acactaagtc aagttaaagg ctttgttcga aagaatgggtg tcaatgaagc caaaatagat 780  
gagatcaaga atgacaatgt ccaagacaca gcagaacaga aagttcaact gcttcgtaat 840  
tggcatcaac ttcattgaaa gaaagaagcg tatgacacat tgattaaaga tctcaaaaaa 900  
gccaatcttt gtactcttgc agagaaaatt cagactatca tcctcaagga cattactagt 960  
gactcagaaa attcaaactt cagaaatgaa atccaaagct tggtctag 1008

<210> 6  
<211> 335  
<212> PRT  
<213> Homo sapiens full-length FAS

<400> 6  
Met Leu Gly Ile Trp Thr Leu Leu Pro Leu Val Leu Thr Ser Val Ala  
1 5 10 15  
Arg Leu Ser Ser Lys Ser Val Asn Ala Gln Val Thr Asp Ile Asn Ser  
20 25 30  
Lys Gly Leu Glu Leu Arg Lys Thr Val Thr Thr Val Glu Thr Gln Asn  
35 40 45

3182\_043PC02\_SequenceListing\_ascii

```

Leu Glu Gly Leu His His Asp Gly Gln Phe Cys His Lys Pro Cys Pro
 50                      55                      60

Pro Gly Glu Arg Lys Ala Arg Asp Cys Thr Val Asn Gly Asp Glu Pro
 65                      70                      75                      80

Asp Cys Val Pro Cys Gln Glu Gly Lys Glu Tyr Thr Asp Lys Ala His
                      85                      90                      95

Phe Ser Ser Lys Cys Arg Arg Cys Arg Leu Cys Asp Glu Gly His Gly
                      100                    105                    110

Leu Glu Val Glu Ile Asn Cys Thr Arg Thr Gln Asn Thr Lys Cys Arg
 115                      120

Cys Lys Pro Asn Phe Phe Cys Asn Ser Thr Val Cys Glu His Cys Asp
 130                      135                    140

Pro Cys Thr Lys Cys Glu His Gly Ile Ile Lys Glu Cys Thr Leu Thr
 145                      150                    155                    160

Ser Asn Thr Lys Cys Lys Glu Glu Gly Ser Arg Ser Asn Leu Gly Trp
                      165                    170                    175

Leu Cys Leu Leu Leu Leu Pro Ile Pro Leu Ile Val Trp Val Lys Arg
                      180                    185                    190

Lys Glu Val Gln Lys Thr Cys Arg Lys His Arg Lys Glu Asn Gln Gly
 195                      200                    205

Ser His Glu Ser Pro Thr Leu Asn Pro Glu Thr Val Ala Ile Asn Leu
 210                      215                    220

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

Thr Leu Ser Gln Val Lys Gly Phe Val Arg Lys Asn Gly Val Asn Glu
                      245                    250                    255

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

Gln Lys Val Gln Leu Leu Arg Asn Trp His Gln Leu His Gly Lys Lys
 275                      280                    285

Glu Ala Tyr Asp Thr Leu Ile Lys Asp Leu Lys Lys Ala Asn Leu Cys
 290                      295                    300

Thr Leu Ala Glu Lys Ile Gln Thr Ile Ile Leu Lys Asp Ile Thr Ser
 305                      310                    315                    320

```

# 3182\_043PC02\_SequenceListing\_ascii

Asp Ser Glu Asn Ser Asn Phe Arg Asn Glu Ile Gln Ser Leu Val  
325 330 335

<210> 7  
<211> 505  
<212> DNA  
<213> Homo sapiens Effector Domain of FAS

<400> 7  
aggatccaga tctaacttgg ggtggctttg tcttcttctt ttgccaattc cactaattgt 60  
ttgggtgaag agaaaggaag tacagaaaac atgcagaaag cacagaaagg aaaaccaagg 120  
ttctcatgaa tctccaacct taaatcctga aacagtggca ataaatttat ctgatgttga 180  
cttgagtaaa tatatcacca ctattgctgg agtcatgaca ctaagtcaag ttaaaggctt 240  
tgttcgaaag aatggtgtca atgaagccaa aatagatgag atcaagaatg acaatgtcca 300  
agacacagca gaacagaaag ttcaactgct tcgtaattgg catcaacttc atggaaagaa 360  
agaagcgtat gacacattga ttaaagatct caaaaaagcc aatctttgta ctcttgcaga 420  
gaaaattcag actatcatcc tcaaggacat tactagtac tcagaaaatt caaacttcag 480  
aaatgaaatc caaagcttgg tctag 505

<210> 8  
<211> 167  
<212> PRT  
<213> Homo sapiens Effector Domain of FAS

<400> 8  
Gly Ser Arg Ser Asn Leu Gly Trp Leu Cys Leu Leu Leu Leu Pro Ile  
1 5 10 15  
Pro Leu Ile Val Trp Val Lys Arg Lys Glu Val Gln Lys Thr Cys Arg  
20 25 30  
Lys His Arg Lys Glu Asn Gln Gly Ser His Glu Ser Pro Thr Leu Asn  
35 40 45  
Pro Glu Thr Val Ala Ile Asn Leu Ser Asp Val Asp Leu Ser Lys Tyr  
50 55 60  
Ile Thr Thr Ile Ala Gly Val Met Thr Leu Ser Gln Val Lys Gly Phe  
65 70 75 80  
Val Arg Lys Asn Gly Val Asn Glu Ala Lys Ile Asp Glu Ile Lys Asn  
85 90 95  
Asp Asn Val Gln Asp Thr Ala Glu Gln Lys Val Gln Leu Leu Arg Asn  
100 105 110  
Trp His Gln Leu His Gly Lys Lys Glu Ala Tyr Asp Thr Leu Ile Lys  
115 120 125

# 3182\_043PC02\_SequenceListing\_ascii

Asp Leu Lys Lys Ala Asn Leu Cys Thr Leu Ala Glu Lys Ile Gln Thr  
130 135 140

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

Asn Glu Ile Gln Ser Leu Val  
165

<210> 9  
<211> 1101  
<212> DNA  
<213> Homo sapiens FAS-chimera

<400> 9  
atgggcctct ccaccgtgcc tgacctgctg ctgccgctgg tgctcctgga gctgttggtg 60  
ggaatatacc cctcaggggt tattggactg gtccctcacc taggggacag ggagaagaga 120  
gatagtgtgt gtccccaagg aaaatatatc caccctcaaa ataattcgat ttgctgtacc 180  
aagtgccaca aaggaaccta cttgtacaat gactgtccag gcccggggca ggatacggac 240  
tgcagggagt gtgagagcgg ctcccttcacc gcttcagaaa accacctcag aactgcctc 300  
agctgctcca aatgccgaaa ggaaatgggt caggtggaga tctcttcttg cacagtggac 360  
cgggacaccg tgtgtggctg caggaagaac cagtaccggc attattggag tgaaaacctt 420  
ttccagtgtc tcaattgcag cctctgcctc aatgggaccg tgcacctctc ctgccaggag 480  
aacagaaca ccgtgtgcac ctgccatgca ggtttctttc taagagaaaa cgagtgtgtc 540  
tcctgtagta actgtaagaa aagcctggag tgcacgaagt tgtgcctacc aagcttagga 600  
tccagatcta acttgggggtg gctttgtctt cttcttttgc caattccact aattgtttgg 660  
gtgaagagaa aggaagtaca gaaaacatgc agaaagcaca gaaaggaaaa ccaaggttct 720  
catgaatctc caaccttaaa tcctgaaaca gtggcaataa atttatctga tgttgacttg 780  
agtaaataata tcaccactat tgctggagtc atgacactaa gtcaagttaa aggctttggt 840  
cgaaagaatg gtgtcaatga agccaaaata gatgagatca agaatgacaa tgtccaagac 900  
acagcagaac agaaagttca actgcttcgt aattggcatc aacttcatgg aaagaaagaa 960  
gcgtatgaca cattgattaa agatctcaaa aaagccaatc tttgtactct tgcagagaaa 1020  
attcagacta tcatcctcaa ggacattact agtgactcag aaaattcaaa cttcagaaat 1080  
gaaatccaaa gcttgggtcta g 1101

<210> 10  
<211> 366  
<212> PRT  
<213> Homo sapiens FAS-chimera

<400> 10

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

# 3182\_043PC02\_SequenceListing\_ascii

Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile Gly Leu Val Pro  
 20 25 30  
 His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys  
 35 40 45  
 Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys  
 50 55 60  
 Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp  
 65 70 75 80  
 Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu  
 85 90 95  
 Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val  
 100 105 110  
 Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg  
 115 120 125  
 Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe  
 130 135 140  
 Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu  
 145 150 155 160  
 Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu  
 165 170 175  
 Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr  
 180 185 190  
 Lys Leu Cys Leu Pro Ser Leu Gly Ser Arg Ser Asn Leu Gly Trp Leu  
 195 200 205  
 Cys Leu Leu Leu Leu Pro Ile Pro Leu Ile Val Trp Val Lys Arg Lys  
 210 215 220  
 Glu Val Gln Lys Thr Cys Arg Lys His Arg Lys Glu Asn Gln Gly Ser  
 225 230 235 240  
 His Glu Ser Pro Thr Leu Asn Pro Glu Thr Val Ala Ile Asn Leu Ser  
 245 250 255  
 Asp Val Asp Leu Ser Lys Tyr Ile Thr Thr Ile Ala Gly Val Met Thr  
 260 265 270  
 Leu Ser Gln Val Lys Gly Phe Val Arg Lys Asn Gly Val Asn Glu Ala  
 275 280 285

# 3182\_043PC02\_SequenceListing\_ascii

Lys Ile Asp Glu Ile Lys Asn Asp Asn Val Gln Asp Thr Ala Glu Gln  
 290 295 300

Lys Val Gln Leu Leu Arg Asn Trp His Gln Leu His Gly Lys Lys Glu  
 305 310 315 320

Ala Tyr Asp Thr Leu Ile Lys Asp Leu Lys Lys Ala Asn Leu Cys Thr  
 325 330 335

Leu Ala Glu Lys Ile Gln Thr Ile Ile Leu Lys Asp Ile Thr Ser Asp  
 340 345 350

Ser Glu Asn Ser Asn Phe Arg Asn Glu Ile Gln Ser Leu Val  
 355 360 365

<210> 11  
 <211> 47  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Endothelial Cell-Specific Enhancer Elements

<400> 11  
 ctggagggtg actttgcttc tggagccagt acttcatact tttcatt 47

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

<220>  
 <223> Endothelial Cell-Specific Enhancer

<400> 12  
 aatgaaaagt atgaagtact ggctccagaa gcaaagtcac cctccag 47

<210> 13  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Endothelial Cell-Specific Enhancer

<400> 13  
 gtacttcata cttttcattc caatgggggtg actttgcttc tgga 44

<210> 14  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Endothelial Cell-Specific Enhancer Element

<400> 14  
 tccagaagca aagtcacccc attggaatga aaagtatgaa gtac 44

# 3182\_043PC02\_SequenceListing\_ascii

<210> 15  
 <211> 131  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Endothelial Cell-Specific 3X Enhancer Element

<400> 15  
 ctccagaagc aaagtcaccc cattggaatg aaaagtatga agtacaatga aaagtatgaa 60  
 gtactggctc cagaagcaaa gtcaccctcc agaagcaaag tcacccatt ggaatgaaaa 120  
 gtatgaagta c 131

<210> 16  
 <211> 131  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Endothelial Cell-Specific 3X Enhancer Element

<400> 16  
 gtacttcata cttttcattc caatggggtg actttgcttc tggagggtga ctttgcttct 60  
 ggagccagta cttcatactt ttcattgtac ttcatacttt tcattccaat ggggtgactt 120  
 tgcttctgga g 131

<210> 17  
 <211> 850  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Endothelial Cell-Specific PPE-1 Promoter

<400> 17  
 gtacgtgtac ttctgatcgg cgatactagg gagataagga tgtgcctgac aaaaccacat 60  
 tgttgttggt atcattatta tttagttttc cttccttgct aactcctgac ggaatctttc 120  
 tcacctcaaa tgcgaagtac tttagtttag aaaagacttg gtggaagggg tgggtggtgga 180  
 aaagtagggg gatcttccaa actaatctgg ttccccgccc gcccagtag ctgggattca 240  
 agagcgaaga gtggggatcg tccccttggt tgatcagaaa gacataaaag gaaaatcaag 300  
 tgaacaatga tcagccccac ctccaccca cccccctgcg cgcgcaaat acaatctatt 360  
 taattgtact tcatactttt cattccaatg gggtagcttt gcttctggag aaactcttga 420  
 ttcttgaact ctggggctgg cagctagcaa aaggggaagc gggctgctgc tctctgcagg 480  
 ttctgcagcg gtctctgtct agtgggtggt ttctttttct tagccctgcc cctggattgt 540  
 cagacggcgg gcgtctgcct ctgaagttag ccgtgatttc ctctagagcc gggctctatc 600  
 tctggctgca cgttgcctgt ggggtgactaa tcacacaata acattgttta gggctggaat 660  
 gaagtcagag ctgtttaccc cactctata ggggttcaat ataaaaaggc ggcggagaac 720  
 tgtccgagtc agaagcgttc ctgcaccggc gctgagagcc tgaccgggtc tgctccgctg 780  
 tccttgccg ctgcctccc gctgcccgcg acgctttcgc cccagtggaa gggccacttg 840

## 3182\_043PC02\_SequenceListing\_ascii

ctgcggccgc 850

<210> 18  
 <211> 987  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Endothelial Cell-Specific PPE-1 3X Promoter

<400> 18  
 gtacgtgtac ttctgatcgg cgatactagg gagataagga tgtgcctgac aaaaccacat 60  
 tgttgttgtt atcattatta tttagttttc cttccttgct aactcctgac ggaatctttc 120  
 tcacctcaaa tgcgaagtac tttagtttag aaaagacttg gtggaagggg tgggtggtgga 180  
 aaagtagggg gatcttccaa actaatctgg ttccccgcc gccccagtag ctgggattca 240  
 agagcgaaga gtgggggatcg tccccttggt tgatcagaaa gacataaaaag gaaaatcaag 300  
 tgaacaatga tcagccccac ctccacccca cccccctgcg cgcgcacaaat acaatctatt 360  
 taattgtact tcatactttt cattccaatg ggggtgacttt gcttctggag aaactcttga 420  
 ttcttgaact ctggggctgg cagctagcct ccagaagcaa agtcacccca ttggaatgaa 480  
 aagtatgaag tacaatgaaa agtatgaagt actggctcca gaagcaaagt caccctccag 540  
 aagcaaagtc accccattgg aatgaaaagt atgaagtacg ctagcaaaag ggggaagcggg 600  
 ctgctgctct ctgcagggtc tgcagcggtc tctgtctagt ggggtgttttc tttttcttag 660  
 ccctgcccct ggattgtcag acggcggggc tctgcctctg aagttagccg tgatttcctc 720  
 tagagccggg tcttatctct ggctgcacgt tgcctgtggg tgactaatca cacaataaca 780  
 ttgttttagg ctggaatgaa gtcagagctg tttaccccca ctctataggg gttcaatata 840  
 aaaaggcggc ggagaactgt ccgagtcaga agcgttcctg caccggcgct gagagcctga 900  
 cccggtctgc tccgtgtcc ttgcgcgctg cctcccggtg gcccgcgacg ctttcgcccc 960  
 agtgaagggg ccacttgctg cggccgc 987

<210> 19  
 <211> 35207  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> VB-111 entire construct

<400> 19  
 catcatcaat aatatacctt attttggatt gaagccaata tgataatgag ggggtggagt 60  
 ttgtgacgtg gcgcggggcg tgggaacggg gcgggtgacg tagtagtgtg gcggaagtgt 120  
 gatgttgcaa gtgtggcgga acacatgtaa gcgacggatg tggcaaaagt gacgtttttg 180  
 gtgtgcgccg gtgtacacag gaagtgacaa ttttcgcgcg gttttaggcg gatgttgtag 240  
 taaatttggg cgtaaccgag taagatttgg ccattttcgc gggaaaactg aataagagga 300  
 agtgaaatct gaataatttt gtgttactca tagcgcgtaa tatttgtcta gggccgcggg 360

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |            |             |            |      |
|------------|------------|------------|------------|-------------|------------|------|
| gactttgacc | gtttacgtgg | agactcgcgc | aggtgttttt | ctcaggtggt  | ttccgcgttc | 420  |
| cgggtcaaag | ttggcggttt | attattatag | tcagtagcta | cgtgtacttc  | tgatcggcga | 480  |
| tactagggag | ataaggatgt | gcctgacaaa | accacattgt | tggtgttatc  | attattattt | 540  |
| agttttcctt | ccttgctaac | tcctgacgga | atctttctca | cctcaaagtc  | gaagtacttt | 600  |
| agtttagaaa | agacttggtg | gaaggggtgg | tggtggaaaa | gtaggggtgat | cttccaaact | 660  |
| aatctgggtc | cccgcgcgc  | ccagtagctg | ggattcaaga | gcgaagagtg  | gggatcgtcc | 720  |
| ccttgtttga | tcagaaagac | ataaaaggaa | aatcaagtga | acaatgatca  | gccccacctc | 780  |
| cacccacccc | ccctgcgcgc | gcacaataca | atctatttaa | ttgtacttca  | tacttttcat | 840  |
| tccaatgggg | tgactttgct | tctggagaaa | ctcttgattc | ttgaactctg  | gggctggcag | 900  |
| ctagcctcca | gaagcaaagt | cacccatttg | gaatgaaaag | tatgaagtac  | aatgaaaagt | 960  |
| atgaagtact | ggctccagaa | gcaaagtcac | cctccagaag | caaagtcacc  | ccattggaat | 1020 |
| gaaaagtatg | aagtacgcta | gcaaaagggg | aagcgggctg | ctgctctctg  | caggttctgc | 1080 |
| agcggctctt | gtctagtggg | tgttttcttt | ttcttagccc | tgcccctgga  | ttgtcagacg | 1140 |
| gcgggctctt | gcctctgaag | ttagccgtga | tttctcttag | agccgggtct  | tatctctggc | 1200 |
| tgacggttgc | ctgtgggtga | ctaatacac  | aataacattg | tttagggctg  | gaatgaagtc | 1260 |
| agagctgttt | acccccactc | tataggggtt | caatataaaa | aggcggcgga  | gaactgtccg | 1320 |
| agtcagaagc | gttcctgcac | cggcgctgag | agcctgaccc | ggctctgctc  | gctgtccttg | 1380 |
| cgcgctgcct | cccggctgcc | cgcgacgctt | tcgccccagt | ggaagggcca  | cttgctgcgg | 1440 |
| ccgctaattc | tgagatcggg | gatccggcat | gggcctctcc | accgtgcctg  | acctgctgct | 1500 |
| gccgctggtg | ctcctggagc | tggttggtgg | aatatacccc | tcaggggtta  | ttggactggt | 1560 |
| ccctcaccta | ggggacaggg | agaagagaga | tagtgtgtgt | ccccaaggaa  | aatatatcca | 1620 |
| ccctcaaaat | aattcgattt | gctgtaccaa | gtgccacaaa | ggaacctact  | tgtacaatga | 1680 |
| ctgtccaggc | ccggggcagg | atacggactg | caggagtggt | gagagcggct  | ccttcaccgc | 1740 |
| ttcagaaaac | cacctcagac | actgcctcag | ctgctccaaa | tgccgaaagg  | aaatgggtca | 1800 |
| ggtggagatc | tcttcttgca | cagtggaccg | ggacaccgtg | tgtggctgca  | ggaagaacca | 1860 |
| gtaccggcat | tattggagtg | aaaacctttt | ccagtgtctc | aattgcagcc  | tctgcctcaa | 1920 |
| tgggaccgtg | cacctctcct | gccaggagaa | acagaacacc | gtgtgcacct  | gccatgcagg | 1980 |
| tttctttcta | agagaaaacg | agtgtgtctc | ctgtagtaac | tgtaagaaaa  | gcctggagtg | 2040 |
| cacgaagtgt | tgacctacaa | gcttaggata | cagatctaac | ttgggggtgg  | tttgtcttct | 2100 |
| tcttttgcca | attccactaa | ttgtttgggt | gaagagaaa  | gaagtacaga  | aaacatgcag | 2160 |
| aaagcacaga | aaggaaaacc | aaggttctca | tgaatctcca | accttaaata  | ctgaaacagt | 2220 |
| ggcaataaat | ttatctgatg | ttgacttgag | taaatatatc | accactattg  | ctggagtcac | 2280 |
| gacactaagt | caagttaaag | gctttgttcg | aaagaatggg | gtcaatgaag  | ccaaaataga | 2340 |
| tgagatcaag | aatgacaatg | tccaagacac | agcagaacag | aaagttcaac  | tgcttcgtaa | 2400 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |             |            |             |      |
|------------|------------|-------------|-------------|------------|-------------|------|
| ttggcatcaa | cttcatggaa | agaaagaagc  | gtatgacaca  | ttgattaaag | atctcaaaaa  | 2460 |
| agccaatctt | tgtactcttg | cagagaaaaat | tcagactatc  | atcctcaagg | acattactag  | 2520 |
| tgactcagaa | aattcaaact | tcagaaatga  | aatccaaagc  | ttggtctagc | tcgagcatgc  | 2580 |
| atctaggcgg | ccgcatggca | gaaattcgcg  | aattcgctag  | cgtaaacgga | tcctctagac  | 2640 |
| gagatccgaa | cttgtttatt | gcagcttata  | atgggttaca  | ataaagcaat | agcatcacia  | 2700 |
| atttcacaaa | taaagcattt | ttttcactgc  | attctagtgt  | tggtttgtcc | aaactcatca  | 2760 |
| atgtatctta | tcatgtctag | atctgtactg  | aaatgtgtgg  | gcgtggctta | aggggtgggaa | 2820 |
| agaatatata | aggtgggggt | cttatgtagt  | tttgtatctg  | ttttgcagca | gccgccgccg  | 2880 |
| ccatgagcac | caactcgttt | gatggaagca  | ttgtgagctc  | atatttgaca | acgcgcatgc  | 2940 |
| ccccatgggc | cggggtgcgt | cagaatgtga  | tgggctccag  | cattgatggt | cgccccgtcc  | 3000 |
| tgcccgcaa  | ctctactacc | ttgacctacg  | agaccgtgtc  | tggaacgccg | ttggagactg  | 3060 |
| cagcctccgc | cgccgcttca | gccgctgcag  | ccaccgcccg  | cggtattgtg | actgactttg  | 3120 |
| ctttcctgag | cccgtttgca | agcagtgcag  | cttcccgttc  | atccgcccgc | gatgacaagt  | 3180 |
| tgacggctct | tttggcacia | ttggattctt  | tgaccgggga  | acttaatgtc | gtttctcagc  | 3240 |
| agctgttga  | tctgcgccag | caggtttctg  | ccctgaaggc  | ttcctcccct | cccaatgcgg  | 3300 |
| tttaaaacat | aaataaaaaa | ccagactctg  | tttggatttg  | gatcaagcaa | gtgtcttgct  | 3360 |
| gtctttatct | aggggttttg | cgcgcgcggt  | aggcccggga  | ccagcgggtc | cggtcgttga  | 3420 |
| gggtcctgtg | tattttttcc | aggacgtggt  | aaagggtgact | ctggatgttc | agatacatgg  | 3480 |
| gcataagccc | gtctctgggg | tggaggtagc  | accactgcag  | agcttcatgc | tgcggggtgg  | 3540 |
| tgttgtagat | gatccagtcg | tagcaggagc  | gctgggcgtg  | gtgcctaaaa | atgtctttca  | 3600 |
| gtagcaagct | gattgccagg | ggcaggccct  | tggtgtaagt  | gtttacaaag | cggttaagct  | 3660 |
| gggatgggtg | catacgtggg | gatatgagat  | gcattcttga  | ctgtattttt | aggttggcta  | 3720 |
| tgttcccagc | catatccctc | cggggattca  | tgttgtgcag  | aaccaccagc | acagtgtatc  | 3780 |
| cggtgcactt | gggaaatttg | tcatgtagct  | tagaaggaaa  | tgctggaag  | aacttggaga  | 3840 |
| cgcccttgtg | acctccaaga | ttttccatgc  | attcgtccat  | aatgatggca | atgggcccac  | 3900 |
| gggcggcggc | ctgggcgaag | atattttctg  | gatcactaac  | gtcatagtgt | tgttccagga  | 3960 |
| tgagatcgtc | ataggccatt | tttaciaaagc | gcgggcggag  | ggtgccagac | tgcggtataa  | 4020 |
| tggttccatc | cggcccaggg | gcgtagttac  | cctcacagat  | ttgcattttc | cacgctttga  | 4080 |
| gttcagatgg | ggggatcatg | tctacctgcg  | gggcgatgaa  | gaaaacgggt | tccggggtag  | 4140 |
| gggagatcag | ctgggaagaa | agcaggttcc  | tgagcagctg  | cgacttaccg | cagccgggtg  | 4200 |
| gcccgtaaat | cacacctatt | accggctgca  | actggtagtt  | aagagagctg | cagctgccgt  | 4260 |
| catccctgag | cagggggggc | acttcgttaa  | gcatgtccct  | gactcgcag  | ttttccctga  | 4320 |
| ccaaatccgc | cagaaggcgc | tcgccgccca  | gcgatagcag  | ttcttgcaag | gaagcaaagt  | 4380 |
| ttttcaacgg | tttgagaccg | tccgccgtag  | gcatgctttt  | gagcgtttga | ccaagcagtt  | 4440 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| ccaggcggtc  | ccacagctcg  | gtcacctgct  | ctacggcatc  | tcgatccagc  | atatctcctc  | 4500 |
| gtttcgcggg  | ttggggcggc  | tttcgctgta  | cggcagtagt  | cggtgctcgt  | ccagacgggc  | 4560 |
| caggggtcatg | tctttccacg  | ggcgcagggt  | cctcgtcagc  | gtagtctggg  | tcacggtgaa  | 4620 |
| ggggtgcgct  | ccgggctgcg  | cgctggccag  | ggtgcgcttg  | aggctgggtcc | tgctggtgct  | 4680 |
| gaagcgctgc  | cggtcttcgc  | cctgcgcgtc  | ggccaggtag  | catttgacca  | tggtgtcata  | 4740 |
| gtccagcccc  | tccgcggcgt  | ggcccttggc  | gcgagccttg  | cccttgagg   | aggcgccgca  | 4800 |
| cgaggggcag  | tgcagacttt  | tgagggcgta  | gagcttgggc  | gcgagaaata  | ccgattccgg  | 4860 |
| ggagtaggca  | tccgcgccgc  | aggccccgca  | gacggtctcg  | cattccacga  | gccagggtgag | 4920 |
| ctctggccgt  | tcgggggtcaa | aaaccagggt  | tcccccatgc  | tttttgatgc  | gtttcttacc  | 4980 |
| tctggtttcc  | atgagccggt  | gtccacgctc  | ggtgacgaaa  | aggctgtccg  | tgtccccgta  | 5040 |
| tacagacttg  | agaggcctgt  | cctcgagcgg  | tgttccgcgg  | tcctcctcgt  | atagaaactc  | 5100 |
| ggaccactct  | gagacaaagg  | ctcgcgtcca  | ggccagcacg  | aaggaggcta  | agtgggaggg  | 5160 |
| gtagcggtcg  | ttgtccacta  | gggggtccac  | tcgctccagg  | gtgtgaagac  | acatgtcgcc  | 5220 |
| ctcttcggca  | tcaaggaagg  | tgattggttt  | gtagggtgtag | gccacgtgac  | cgggtgttcc  | 5280 |
| tgaagggggg  | ctataaaaagg | gggtgggggc  | gcgttcgtcc  | tcactctctt  | ccgcatcgct  | 5340 |
| gtctgcgagg  | gccagctggt  | ggggtgagta  | ctccctctga  | aaagcgggca  | tgacttctgc  | 5400 |
| gctaagattg  | tcagttttcca | aaaacgagga  | ggatttgata  | ttcacctggc  | ccgcggtgat  | 5460 |
| gcctttgagg  | gtggccgcat  | ccatctggtc  | agaaaagaca  | atctttttgt  | tgtcaagctt  | 5520 |
| ggtggcaaac  | gacccgtaga  | gggcgttgga  | cagcaacttg  | gcgatggagc  | gcagggtttg  | 5580 |
| gtttttgtcg  | cgatcggcgc  | gctccttggc  | cgcgatgttt  | agctgcacgt  | attcgcgcgc  | 5640 |
| aacgcaccgc  | cattcgggaa  | agacggtggt  | gcgctcgtcg  | ggcaccagg   | gcacgcgcca  | 5700 |
| accgcggttg  | tgcagggtga  | caagggtcaac | gctggtggct  | acctctccgc  | gtaggcgctc  | 5760 |
| gttggtccag  | cagaggcggc  | cgcccttgcg  | cgagcagaat  | ggcggtagg   | ggtctagctg  | 5820 |
| cgtctcgtcc  | ggggggtctg  | cgtccacggt  | aaagaccccg  | ggcagcaggc  | gcgcgtcgaa  | 5880 |
| gtagtctatc  | ttgcatcctt  | gcaagtctag  | cgcttgctgc  | catgcgcggg  | cggcaagcgc  | 5940 |
| gcgctcgtat  | gggttgagt   | ggggaccca   | tggcatggg   | tggtgagcg   | cggaggcgta  | 6000 |
| catgccgcaa  | atgtcgtaaa  | cgtagagggg  | ctctctgagt  | attccaagat  | atgtagggta  | 6060 |
| gcatcttcca  | ccgcggatgc  | tggcgcgcac  | gtaatcgtat  | agttcgtg    | agggagcgag  | 6120 |
| gaggtcggga  | ccgaggttgc  | tacgggcggg  | ctgctctgct  | cggaagacta  | tctgcctgaa  | 6180 |
| gatggcatgt  | gagttggatg  | atatggttgg  | acgctggaag  | acgttgaagc  | tggcgtctgt  | 6240 |
| gagacctacc  | gcgtcacgca  | cgaaggaggc  | gtaggagtgc  | cgcagcttgt  | tgaccagctc  | 6300 |
| ggcggtgacc  | tgcacgtcta  | gggcgcagta  | gtccagggtt  | tccttgatga  | tgtcatactt  | 6360 |
| atcctgtccc  | ttttttttcc  | acagctcgcg  | gttgaggaca  | aactcttcgc  | ggtctttcca  | 6420 |
| gtactcttgg  | atcggaacc   | cgtcggcctc  | cgaacggtaa  | gagcctagca  | tgtagaactg  | 6480 |

# 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| gttgacggcc  | tggtaggcgc  | agcatccctt  | ttctacgggt | agcgcgtatg  | cctgcgcggc  | 6540 |
| cttccggagc  | gaggtgtggg  | tgagcgcaaa  | ggtgtccctg | accatgactt  | tgaggtactg  | 6600 |
| gtatttgaag  | tcagtgtcgt  | cgcatccgcc  | ctgctcccag | agcaaaaagt  | ccgtgcgctt  | 6660 |
| tttggaacgc  | ggatttggca  | gggcgaaggt  | gacatcgttg | aagagtatct  | ttcccgcgcg  | 6720 |
| aggcataaag  | ttgcgtgtga  | tgcggaaggg  | tcccggcacc | tcggaacggt  | tgtaattac   | 6780 |
| ctgggcggcg  | agcacgatct  | cgtcaaagcc  | gttgatgttg | tggcccacaa  | tgtaaagttc  | 6840 |
| caagaagcgc  | gggatgccct  | tgatggaagg  | caatttttta | agttcctcgt  | aggtgagctc  | 6900 |
| ttcaggggag  | ctgagcccgt  | gctctgaaag  | ggcccagtct | gcaagatgag  | ggttggaagc  | 6960 |
| gacgaatgag  | ctccacaggt  | cacgggccat  | tagcatttgc | aggtggtcgc  | gaaaggtcct  | 7020 |
| aaactggcga  | cctatggcca  | ttttttcttg  | ggtgatgcag | tagaaggtaa  | gcgggtcttg  | 7080 |
| ttcccagcgg  | tcccatccaa  | ggttcgcggc  | taggtctcgc | gcggcagtca  | ctagaggctc  | 7140 |
| atctccgccg  | aacttcatga  | ccagcatgaa  | gggcacgagc | tgcttcccaa  | aggcccccac  | 7200 |
| ccaagtatag  | gtctctacat  | cgtaggtgac  | aaagagacgc | tcggtgcgag  | gatgcgagcc  | 7260 |
| gatcgggaag  | aactggatct  | cccgccacca  | attggaggag | tggctattga  | tgtggtgaaa  | 7320 |
| gtagaagtcc  | ctgcgacggg  | ccgaacactc  | gtgctggctt | ttgtaaaaac  | gtgcgcagta  | 7380 |
| ctggcagcgg  | tgcacgggct  | gtacatcctg  | cacgaggttg | acctgacgac  | cgcgcacaa   | 7440 |
| gaagcagagt  | gggaatttga  | gcccctcgcc  | tggcgggttt | ggctgggtgg  | cttctacttc  | 7500 |
| ggctgcttgt  | ccttgaccgt  | ctggctgctc  | gaggggagtt | acggtggatc  | ggaccaccac  | 7560 |
| gccgcgcgag  | cccaaagtcc  | agatgtccgc  | gcgcggcggt | cggagcttga  | tgacaacatc  | 7620 |
| gcgcagatgg  | gagctgtcca  | tggctctggag | ctcccgcggc | gtcaggtcag  | gcgggagctc  | 7680 |
| ctgcaggttt  | acctcgcata  | gacgggtcag  | ggcgcgggct | agatccaggt  | gataccta    | 7740 |
| ttccaggggc  | tggttggtgg  | cggcgtcgat  | ggcttgcaag | aggccgcac   | cccgcggcgc  | 7800 |
| gactacggta  | ccgcgcggcg  | ggcgggtggc  | cgcgggggtg | tccttggtatg | atgcatctaa  | 7860 |
| aagcggtgac  | gcgggcgagc  | ccccggaggt  | agggggggct | ccggaccgc   | cgggagaggg  | 7920 |
| ggcaggggca  | cgtcggcgcc  | gcgcgcgggc  | aggagctgg  | gctgcgcgcg  | taggttgctg  | 7980 |
| gcgaacgcga  | cgacgcggcg  | gttgatctcc  | tgaatctggc | gcctctgcgt  | gaagacgacg  | 8040 |
| ggcccgggtga | gcttgaacct  | gaaagagagt  | tcgacagaat | caatttcggt  | gtcgttgacg  | 8100 |
| gcggcctggc  | gcaaaatctc  | ctgcacgtct  | cctgagttgt | cttgataggc  | gatctcggcc  | 8160 |
| atgaactgct  | cgatctcttc  | ctcctggaga  | tctccgcgtc | cggctcgctc  | cacgggtggcg | 8220 |
| gcgaggtcgt  | tggaaatgcg  | ggccatgagc  | tgcgagaagg | cgttgaggcc  | tccctcgttc  | 8280 |
| cagacgcggc  | tgtagaccac  | gcccccttcg  | gcatcgcggg | cgcgcatgac  | cacctgcgcg  | 8340 |
| agattgagct  | ccacgtgccg  | ggcgaagacg  | gcgtagtttc | gcaggcgctg  | aaagaggtag  | 8400 |
| ttgaggggtg  | tggcgggtgtg | ttctgccacg  | aagaagtaca | taaccagcg   | tcgcaacgtg  | 8460 |
| gattcgttga  | tatcccccaa  | ggcctcaagg  | cgctccatgg | cctcgtagaa  | gtccacggcg  | 8520 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |            |             |            |             |       |
|-------------|------------|------------|-------------|------------|-------------|-------|
| aagttgaaaa  | actgggagtt | gcgcgccgac | acggttaact  | cctcctccag | aagacggatg  | 8580  |
| agctcggcga  | cagtgtcgcg | cacctcgcg  | tcaaaggcta  | caggggcctc | ttcttcttct  | 8640  |
| tcaatctcct  | cttcataag  | ggcctcccct | tcttcttctt  | ctggcgggcg | tgggggaggg  | 8700  |
| gggacacggc  | ggcgacgacg | gcgcacggg  | aggcggtcga  | caaagcgctc | gatcatctcc  | 8760  |
| ccgcgggcgac | ggcgcatggt | ctcggtgacg | gcgcgggcgt  | tctcggggg  | gcgcatgttg  | 8820  |
| aagacgccgc  | ccgtcatgtc | ccggttatgg | gttggcgggg  | ggctgccatg | cggcagggat  | 8880  |
| acggcgctaa  | cgatgcatct | caacaattgt | tgtgtaggta  | ctccgccgcc | gagggacctg  | 8940  |
| agcgagtccg  | catcgaccgg | atcggaaaac | ctctcgagaa  | aggcgtctaa | ccagtcacag  | 9000  |
| tcgcaaggta  | ggctgagcac | cgtggcgggc | ggcagcgggc  | ggcggtcggg | gttgtttctg  | 9060  |
| gcggaggtgc  | tgctgatgat | gtaattaaag | taggcggtct  | tgagacggcg | gatggtcgac  | 9120  |
| agaagcacca  | tgctcttggg | tccggcctgc | tgaatgcgca  | ggcggtcggc | catgccccag  | 9180  |
| gcttcgtttt  | gacatcgggc | caggtctttg | tagtagtctt  | gcatgagcct | ttctaccggc  | 9240  |
| acttcttctt  | ctccttcctc | ttgtcctgca | tctcttgcat  | ctatcgctgc | ggcggcggcg  | 9300  |
| gagtttgccc  | gtaggtggcg | ccctcttcct | cccattgcgtg | tgaccccgaa | gcccctcatc  | 9360  |
| ggctgaagca  | gggctaggtc | ggcgacaacg | cgctcggtca  | atatggcctg | ctgcacctgc  | 9420  |
| gtgagggtag  | actggaagtc | atccatgtcc | acaaagcggg  | ggtatgcgcc | cgtgttgatg  | 9480  |
| gtgtaagtgc  | agttggccat | aacggaccag | ttaacgggtct | ggtgacccgg | ctgcgagagc  | 9540  |
| tcggtgtacc  | tgagacgcga | gtaagccctc | gagtcaaata  | cgtagtcggt | gcaagtccgc  | 9600  |
| accaggtact  | ggtatcccac | caaaaagtgc | ggcggcggct  | ggcggtagag | gggccagcgt  | 9660  |
| agggtggccg  | gggctccggg | ggcgagatct | tccaacataa  | ggcgatgata | tccgtagatg  | 9720  |
| tacctggaca  | tccaggtgat | gccggcgggc | gtggtggagg  | cgcgcgga   | gtcgcggacg  | 9780  |
| cggttccaga  | tgttgcgcag | cggcaaaaag | tgctccatgg  | tcgggacgct | ctggccggtc  | 9840  |
| aggcgcgcg   | aatcgttgac | gctctagacc | gtgcaaaagg  | agagcctgta | agcgggcaact | 9900  |
| cttccgtggt  | ctggtggata | aattcgcaag | ggtatcatgg  | cggacgaccg | gggttcgagc  | 9960  |
| cccgtatccg  | gccgtccgcc | gtgatccatg | cggttaccgc  | ccgcgtgtcg | aaccaggtg   | 10020 |
| tgcgacgtca  | gacaacgggg | gagtgtcctt | tttggttcc   | ttccaggcg  | ggcggtgct   | 10080 |
| gcgctagctt  | ttttggccac | tggccgcgcg | cagcgtaagc  | ggttaggctg | gaaagcgaaa  | 10140 |
| gcatthaagt  | gctcgctccc | tgtagccgga | gggttatatt  | ccaagggttg | agtcgcggga  | 10200 |
| cccccggttc  | gagtctcgga | ccggccggac | tgcggcgaac  | gggggtttgc | ctccccgtca  | 10260 |
| tgcaagacct  | cgcttgcaaa | ttcctccgga | aacagggacg  | agcccccttt | ttgcttttcc  | 10320 |
| cagatgcata  | cgggtgctgc | gcagatgcgc | ccccctctc   | agcagcgga  | agagcaagag  | 10380 |
| cagcggcaga  | catgcagggc | accctcccct | cctcctaccg  | cgtaggagg  | ggcgacatcc  | 10440 |
| gcggttgacg  | cggcagcaga | tggtgattac | gaacccccgc  | ggcgccgggc | ccggcactac  | 10500 |
| ctggacttgg  | aggagggcga | gggcctggcg | cggctaggag  | cgccctctcc | tgagcggcac  | 10560 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |             |            |            |             |            |       |
|-------------|------------|-------------|------------|------------|-------------|------------|-------|
| ccaaggggtgc | agctgaagcg | tgatacgcg   | gaggcgtagc | tgccgcggca | gaacctgttt  | 10620      |       |
| cgcgaccg    | agggagagga | gcccgaggag  | atgcgggatc | gaaagttcca | cgagggcg    | 10680      |       |
| gagctgcggc  | atggcctgaa | tcgcgagcgg  | ttgctgcg   | aggaggactt | tgagcccgc   | 10740      |       |
| gcgcgaaccg  | ggattagtcc | cgcgcgcgca  | cacgtggcgg | ccgccgacct | ggtaaccgca  | 10800      |       |
| tacgagcaga  | cggtgaacca | ggagattaac  | tttcaaaaaa | gctttaacaa | ccacgtgcgt  | 10860      |       |
| acgcttgtgg  | cgcgcgagga | ggtggctata  | ggactgatgc | atctgtggga | ctttgtaagc  | 10920      |       |
| gcgctggagc  | aaaacccaaa | tagcaagccg  | ctcatggcgc | agctgttcct | tatagtgcag  | 10980      |       |
| cacagcagg   | acaacgaggc | attcagggat  | gcgctgctaa | acatagtaga | gcccgagggc  | 11040      |       |
| cgctggctgc  | tcgatttgat | aaacatcctg  | cagagcatag | tggtgcagga | gcgcagcttg  | 11100      |       |
| agcctggctg  | acaaggtggc | cgccatcaac  | tattccatgc | ttagcctggg | caagttttac  | 11160      |       |
| gcccgaaga   | tataccatac | cccttacgtt  | cccatagaca | aggaggtaaa | gatcgagggg  | 11220      |       |
| ttctacatgc  | gcatggcgct | gaaggtgctt  | accttgagcg | acgacctggg | cgtttatcgc  | 11280      |       |
| aacgagcgca  | tccacaaggc | cgtgagcg    | agccggcg   | gcgagctcag | cgaccgcgag  | 11340      |       |
| ctgatgcaca  | gcctgcaaag | ggccctggct  | ggcacgggca | gcggcgatag | agaggccgag  | 11400      |       |
| tcctactttg  | acgcggg    | gcgc        | tgacctgcgc | tgggccccaa | gccgacgcgc  | cctggaggca | 11460 |
| gctggggccg  | gacctgggct | ggcgggtggca | cccgcgcgcg | ctggcaacgt | cggcggcg    | ctg        | 11520 |
| gaggaatatg  | acgaggacga | tgagtacgag  | ccagaggacg | gcgagtacta | agcgggtgatg |            | 11580 |
| tttctgatca  | gatgatgcaa | gacgcaacgg  | acccggcggt | gcgggcggcg | ctgcagagcc  |            | 11640 |
| agccgtccgg  | ccttaactcc | acggacgact  | ggcgccagg  | catggaccgc | atcatgtcgc  |            | 11700 |
| tgactgcgcg  | caatcctgac | gcgttccggc  | agcagccgca | ggccaaccgg | ctctccgcaa  |            | 11760 |
| ttctggaagc  | ggtggtcccg | gcgcgcgcaa  | acccacgcga | cgagaagg   | ctggcgatcg  |            | 11820 |
| taaacgcgct  | ggccgaaaac | agggccatcc  | ggcccgacga | ggccggcctg | gtctacgacg  |            | 11880 |
| cgctgcttca  | gcgcgtggct | cgttacaaca  | gcggcaacgt | gcagaccaac | ctggaccggc  |            | 11940 |
| tggtggggga  | tgtgcgcgag | gccgtggcgc  | agcgtgagcg | cgcgacgag  | cagggaacc   |            | 12000 |
| tgggctccat  | ggttgacta  | aacgccttcc  | tgagtacaca | gcccgcacac | gtgcccggg   |            | 12060 |
| gacaggagga  | ctacaccaac | tttgtgagcg  | cactgcggct | aatggtgact | gagacaccgc  |            | 12120 |
| aaagtgaggt  | gtaccagtct | gggccagact  | atTTTTTcca | gaccagtaga | caaggcctgc  |            | 12180 |
| agaccgtaaa  | cctgagccag | gctttcaaaa  | acttgacggg | gctgtggggg | gtgcgggctc  |            | 12240 |
| ccacaggcga  | ccgcgcgacc | gtgtctagct  | tgctgacgcc | caactcgcg  | ctgttgctgc  |            | 12300 |
| tgctaatagc  | gcccttcacg | gacagtggca  | gcgtgtcccg | ggacacatac | ctaggtcact  |            | 12360 |
| tgctgacact  | gtaccgcgag | gccataggtc  | aggcgcatgt | ggacgagcat | actttccagg  |            | 12420 |
| agattacaag  | tgtcagccgc | gcgctggggc  | aggaggacac | gggcagcctg | gaggcaaccc  |            | 12480 |
| taaactacct  | gctgaccaac | cggcggcaga  | agatcccctc | gttgcacagt | ttaaacagcg  |            | 12540 |
| aggaggagcg  | cattttgcgc | tacgtgcagc  | agagcgtgag | ccttaacctg | atgcgcgacg  |            | 12600 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |            |             |       |
|------------|------------|-------------|------------|------------|-------------|-------|
| gggtaacgcc | cagcgtggcg | ctggacatga  | ccgcgcgcaa | catggaaccg | ggcatgtatg  | 12660 |
| cctcaaaccg | gccgtttatc | aaccgcctaa  | tggactactt | gcatcgcgcg | gccgccgtga  | 12720 |
| accccgagta | tttcaccaat | gccatcttga  | acccgcactg | gctaccgccc | cctgggtttct | 12780 |
| acaccggggg | attcgaggtg | cccgagggta  | acgatggatt | cctctgggac | gacatagacg  | 12840 |
| acagcgtgtt | ttccccgcaa | ccgcagaccc  | tgctagagtt | gcaacagcgc | gagcaggcag  | 12900 |
| aggcggcgct | gcgaaaggaa | agcttccgca  | ggccaagcag | cttgtccgat | ctaggcgctg  | 12960 |
| cggccccgcg | gtcagatgct | agtagcccat  | ttccaagctt | gatagggtct | cttaccagca  | 13020 |
| ctcgcaccac | ccgcccgcgc | ctgctgggcg  | aggaggagta | cctaaacaac | tcgctgctgc  | 13080 |
| agccgcagcg | cgaaaaaaac | ctgcctccgg  | catttcccaa | caacgggata | gagagcctag  | 13140 |
| tggacaagat | gagtagatgg | aagacgtacg  | cgcaggagca | cagggacgtg | ccaggccccg  | 13200 |
| gccccccac  | ccgtcgtcaa | aggcacgacc  | gtcagcgggg | tctggtgtgg | gaggacgatg  | 13260 |
| actcggcaga | cgacagcagc | gtcctggatt  | tgggagggag | tggcaaccgg | tttgcgacc   | 13320 |
| ttcgccccag | gctggggaga | atgttttaaa  | aaaaaaaaaa | gcatgatgca | aaataaaaaa  | 13380 |
| ctcaccaagg | ccatggcacc | gagcgtttgt  | tttcttgtat | tccccttagt | atgcggcgcg  | 13440 |
| cggcgatgta | tgaggaaggt | cctcctccct  | cctacgagag | tgtggtgagc | gcggcgccag  | 13500 |
| tggcggcggc | gctgggttct | cccttcgatg  | ctcccctgga | cccgccgttt | gtgcctccgc  | 13560 |
| ggtacctgcg | gcctaccggg | gggagaaaca  | gcatccgtta | ctctgagttg | gcacccctat  | 13620 |
| tcgacaccac | ccgtgtgtac | ctggtggaca  | acaagtcaac | ggatgtggca | tccctgaact  | 13680 |
| accagaacga | ccacagcaac | tttctgacca  | cggtcattca | aaacaatgac | tacagcccgg  | 13740 |
| gggaggcaag | cacacagacc | atcaatcttg  | acgaccggtc | gactggggc  | ggcgacctga  | 13800 |
| aaaccatcct | gcataccaac | atgccaaatg  | tgaacgagtt | catgtttacc | aataagttta  | 13860 |
| aggcgcgggt | gatggtgtcg | cgcttgcccta | ctaaggacaa | tcaggtggag | ctgaaatacg  | 13920 |
| agtgggtgga | gttcacgctg | cccgagggca  | actactccga | gaccatgacc | atagacctta  | 13980 |
| tgaacaacgc | gatcgtggag | cactacttga  | aagtgggcag | acagaacggg | gttctggaaa  | 14040 |
| gcgacatcgg | ggtaaagttt | gacacccgca  | acttcagact | ggggtttgac | cccgtcactg  | 14100 |
| gtcttgtcat | gcctggggta | tatacaaacy  | aagccttcca | tccagacatc | attttgctgc  | 14160 |
| caggatgcgg | ggtggacttc | acccacagcc  | gcctgagcaa | cttgttgggc | atccgcaagc  | 14220 |
| ggcaaccctt | ccaggagggc | tttaggatca  | cctacgatga | tctggagggg | ggtaacattc  | 14280 |
| ccgcactgtt | ggatgtggac | gcctaccagg  | cgagcttgaa | agatgacacc | gaacagggcg  | 14340 |
| ggggtggcgc | aggcggcagc | aacagcagtg  | gcagcggcgc | ggaagagaac | tccaacgcgg  | 14400 |
| cagccgcggc | aatgcagccg | gtggaggaca  | tgaacgatca | tgccattcgc | ggcgacacct  | 14460 |
| ttgccacacg | ggctgaggag | aagcgcgctg  | aggccgaagc | agcggccgaa | gctgccgccc  | 14520 |
| ccgctgcgca | acccgaggtc | gagaagcctc  | agaagaaacc | ggtgatcaaa | cccctgacag  | 14580 |
| aggacagcaa | gaaacgcagt | tacaacctaa  | taagcaatga | cagcaccttc | acccagtacc  | 14640 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |            |             |            |       |
|-------------|-------------|-------------|------------|-------------|------------|-------|
| gcagctggta  | ccttgcatac  | aactacggcg  | accctcagac | cggaatccgc  | tcatggaccc | 14700 |
| tgctttgcac  | tcctgacgta  | acctgcggct  | cggagcaggt | ctactggtcg  | ttgccagaca | 14760 |
| tgatgcaaga  | ccccgtgacc  | ttccgctcca  | cgcgccagat | cagcaacttt  | ccggtggtgg | 14820 |
| gcgccgagct  | gttgcccgtg  | cactccaaga  | gcttctacaa | cgaccaggcc  | gtctactccc | 14880 |
| aactcatccg  | ccagttttacc | tctctgaccc  | acgtgttcaa | tcgctttccc  | gagaaccaga | 14940 |
| ttttggcgcg  | cccgccagcc  | cccaccatca  | ccaccgtcag | tgaaaacggt  | cctgctctca | 15000 |
| cagatcacgg  | gacgctaccg  | ctgcgcaaca  | gcatcggagg | agtccagcga  | gtgaccatta | 15060 |
| ctgacgccag  | acgccgcacc  | tgcccctacg  | tttacaaggc | cctgggcata  | gtctcgccgc | 15120 |
| gcgtcctatc  | gagccgcact  | ttttgagcaa  | gcatgtccat | ccttatatcg  | cccagcaata | 15180 |
| acacaggctg  | gggcctgcgc  | ttcccaagca  | agatgtttgg | cggggccaaag | aagcgctccg | 15240 |
| accaacaccc  | agtgcgcgtg  | cgcgggcact  | accgcgcgcc | ctggggcgcg  | cacaaacgcg | 15300 |
| gccgcactgg  | gcgcaccacc  | gtcgatgacg  | ccatcgacgc | ggtggtggag  | gaggcgcgca | 15360 |
| actacacgcc  | cacgccgcca  | ccagtgtcca  | cagtggacgc | ggccattcag  | accgtggtgc | 15420 |
| gcggagcccc  | gcgctatgct  | aaaatgaaga  | gacggcggag | gcgcgtagca  | cgtcgccacc | 15480 |
| gccgccgacc  | cggcactgcc  | gcccacgcgc  | cggcggcggc | cctgcttaac  | cgcgcacgtc | 15540 |
| gcaccggccg  | acgggcggcc  | atgcgggccc  | ctcgaaggct | ggccgcgggt  | attgtcactg | 15600 |
| tgccccccag  | gtccaggcga  | cgagcgccg   | ccgcagcagc | cgcggccatt  | agtgctatga | 15660 |
| ctcagggctg  | caggggcaac  | gtgtattggg  | tgcgcgactc | ggttagcggc  | ctgcgcgtgc | 15720 |
| ccgtgcgcac  | ccgccccccg  | cgcaactaga  | ttgcaagaaa | aaactactta  | gactcgtact | 15780 |
| gttgatatgta | tccagcggcg  | gcggcgcgca  | acgaagctat | gtccaagcgc  | aaaatcaaag | 15840 |
| aagagatgct  | ccaggctcatc | gcgccggaga  | tctatggccc | cccgaagaag  | gaagagcagg | 15900 |
| attacaagcc  | ccgaaagcta  | aagcggggtca | aaaagaaaaa | gaaagatgat  | gatgatgaac | 15960 |
| ttgacgacga  | ggtggaactg  | ctgcacgcta  | ccgcgcccag | gcgacgggta  | cagtggaaag | 16020 |
| gtcgacgcgt  | aaaacgtggt  | ttgcgacccg  | gcaccaccgt | agtcttttacg | cccggtgagc | 16080 |
| gctccacccg  | cacctacaag  | cgcggtgatg  | atgaggtgta | cggcgacgag  | gacctgcttg | 16140 |
| agcaggccaa  | cgagcgcctc  | ggggagtttg  | cctacggaaa | gcggcataag  | gacatgctgg | 16200 |
| cgttgccgct  | ggacgagggc  | aacccaacac  | ctagcctaaa | gcccgttaaca | ctgcagcagg | 16260 |
| tgctgcccgc  | gcttgacaccg | tccgaagaaa  | agcgcggcct | aaagcgcgag  | tctggtgact | 16320 |
| tggcaccac   | cgtgcagctg  | atggtaccca  | agcgccagcg | actggaagat  | gtcttggaag | 16380 |
| aatgaccgt   | ggaacctggg  | ctggagcccc  | aggtccgcgt | gcggccaatc  | aagcaggtgg | 16440 |
| cgccgggact  | gggcgtgcag  | accgtggacg  | ttcagatacc | cactaccagt  | agcaccagta | 16500 |
| ttgccaccgc  | cacagagggc  | atggagacac  | aaacgtcccc | ggttgccctca | gcggtggcgg | 16560 |
| atgccgcggt  | gcaggcggtc  | gctgcggccg  | cgtccaagac | ctctacggag  | gtgcaaacgg | 16620 |
| acccgtggat  | gtttcgcggt  | tcagcccccc  | ggcgccccgc | ccgttcgagg  | aagtacggcg | 16680 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |             |            |       |
|------------|------------|-------------|------------|-------------|------------|-------|
| ccgccagcgc | gctactgccc | gaatatgccc  | tacatccttc | cattgcgctt  | acccccggct | 16740 |
| atcgtggcta | cacctaccgc | cccagaagac  | gagcaactac | ccgacgccga  | accaccactg | 16800 |
| gaacccgccg | ccgccgtcgc | cgtcgccagc  | ccgtgctggc | cccgatttcc  | gtgcgagggg | 16860 |
| tggctcgcga | aggaggcagg | accctggtgc  | tgccaacagc | gcgctaccac  | cccagcatcg | 16920 |
| tttaaaagcc | ggtctttgtg | gttcttgtag  | atatggccct | cacctgccgc  | ctccgtttcc | 16980 |
| cggtgccggg | attccgagga | agaatgcacc  | gtaggagggg | catggccggc  | cacggcctga | 17040 |
| cgggcggcat | gcgtcgtgcg | caccaccggc  | ggcggcgcg  | gtcgcaccgt  | cgcatgcgcg | 17100 |
| gcggtatcct | gcccctcctt | attccactga  | tcgccgcggc | gattggcgcc  | gtgcccggaa | 17160 |
| ttgcatccgt | ggccttgtag | gcgcagagac  | actgattaaa | aacaagttgc  | atgtggaaaa | 17220 |
| atcaaaataa | aaagtctgga | ctctcacgct  | cgcttgggtc | tgtaactatt  | ttgtagaatg | 17280 |
| gaagacatca | actttgcgtc | tctggccccg  | cgacacggct | cgcgcccgtt  | catgggaaac | 17340 |
| tggcaagata | tcggcaccag | caatatgagc  | ggtggcgctt | tcagctgggg  | ctcgctgtgg | 17400 |
| agcggcatta | aaaatttcgg | ttccaccgtt  | aagaactatg | gcagcaaggc  | ctggaacagc | 17460 |
| agcacaggcc | agatgctgag | ggataagttg  | aaagagcaaa | atttccaaca  | aaaggtggta | 17520 |
| gatggcctgg | cctctggcat | tagcgggggtg | gtggacctgg | ccaaccaggc  | agtgcaaaat | 17580 |
| aagattaaca | gtaagcttga | tccccgccct  | cccgtagagg | agcctccacc  | ggccgtggag | 17640 |
| acagtgtctc | cagagggggc | tggcgaaaag  | cgcccgcgcc | ccgacaggga  | agaaactctg | 17700 |
| gtgacgcaaa | tagacgagcc | tccctcgtag  | gaggaggcac | taaagcaagg  | cctgcccacc | 17760 |
| acccgtccca | tcgcgcccac | ggctaccgga  | gtgctggggc | agcacacacc  | cgtaacgctg | 17820 |
| gacctgcctc | ccccgcgccg | caccagcagc  | aaacctgtgc | tgccaggccc  | gaccgccgtt | 17880 |
| gttgtaacct | gtcctagccg | cgcgctccct  | cgccgcgccc | ccagcggtcc  | gcgatcggtg | 17940 |
| cggcccgtag | ccagtggcaa | ctggcaaagc  | acactgaaca | gcacgtggg   | tctgggggtg | 18000 |
| caatccctga | agcgccgacg | atgcttctga  | tagctaactg | gtcgtatgtg  | tgtcatgtat | 18060 |
| gcgtccatgt | cgccgccaga | ggagctgctg  | agccgccgcg | cgcccgtttt  | ccaagatggc | 18120 |
| tacccttctg | atgatgccgc | agtggcttta  | catgcacatc | tcggggccagg | acgcctcgga | 18180 |
| gtacctgagc | ccggggctgg | tgcagtttgc  | ccgcgccacc | gagacgtact  | tcagcctgaa | 18240 |
| taacaagttt | agaaacccca | cggtggcgcc  | tacgcacgac | gtgaccacag  | accggtccca | 18300 |
| gcgtttgacg | ctgcggttca | tccctgtgga  | ccgtgaggat | actgcgtact  | cgtacaaggc | 18360 |
| gcggttcacc | ctagctgtgg | gtgataaccg  | tgtgctggac | atggcttcca  | cgtactttga | 18420 |
| catccgcggc | gtgctggaca | ggggccctac  | ttttaagccc | tactctggca  | ctgcctacaa | 18480 |
| cgccctggct | cccaagggtg | ccccaaatcc  | ttgcgaatgg | gatgaagctg  | ctactgctct | 18540 |
| tgaaataaac | ctagaagaag | aggacgatga  | caacgaagac | gaagtagacg  | agcaagctga | 18600 |
| gcagcaaaaa | actcacgtat | ttgggcaggc  | gccttattct | ggtataaata  | ttacaaagga | 18660 |
| gggtattcaa | ataggtgtcg | aagggtcaa   | acctaataat | gccgataaaa  | catttcaacc | 18720 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |            |             |             |             |       |
|-------------|------------|------------|-------------|-------------|-------------|-------|
| tgaacctcaa  | ataggagaat | ctcagtggta | cgaacagaa   | attaatcatg  | cagctgggag  | 18780 |
| agtcctaaaa  | aagactaccc | caatgaaacc | atgttacggg  | tcatatgcaa  | aaccacaaaa  | 18840 |
| tgaaaatgga  | gggcaaggca | ttcttgtaaa | gcaacaaaat  | ggaaagctag  | aaagtcaagt  | 18900 |
| ggaaatgcaa  | tttttctcaa | ctactgaggc | agccgcaggc  | aatggtgata  | acttgactcc  | 18960 |
| taaagtggta  | ttgtacagtg | aagatgtaga | tatagaaacc  | ccagacactc  | atatttctta  | 19020 |
| catgcccact  | attaaggaag | gtaactcacg | agaactaatg  | ggccaacaat  | ctatgcccac  | 19080 |
| caggccta    | tacattgctt | ttagggacaa | ttttattggg  | ctaattgtatt | acaacagcac  | 19140 |
| gggtaatatg  | ggtgttcttg | cgggccaagc | atcgagcttg  | aatgctgttg  | tagatttgca  | 19200 |
| agacagaaac  | acagagcttt | cataccagct | tttgcttgat  | tccattgggtg | atagaaccag  | 19260 |
| gtacttttct  | atgtggaatc | aggctgttga | cagctatgat  | ccagatgtta  | gaattattga  | 19320 |
| aatcatgga   | actgaagatg | aacttccaaa | ttactgcttt  | ccactgggag  | gtgtgattaa  | 19380 |
| tacagagact  | cttaccaagg | taaaacctaa | aacaggctcag | gaaaatggat  | gggaaaaaga  | 19440 |
| tgctacagaa  | ttttcagata | aaaatgaaat | aagagttgga  | aataattttg  | ccatggaaat  | 19500 |
| caatctaaat  | gccaacctgt | ggagaaat   | cctgtactcc  | aacatagcgc  | tgtatttgcc  | 19560 |
| cgacaagcta  | aagtacagtc | cttccaacgt | aaaaatttct  | gataacccaa  | acacctacga  | 19620 |
| ctacatgaac  | aagcgagtg  | tggctcccgg | gctagtggac  | tgctacatta  | accttgagc   | 19680 |
| acgctggctc  | cttgactata | tggacaacgt | caaccattt   | aaccaccacc  | gcaatgctgg  | 19740 |
| cctgcgctac  | cgctcaatgt | tgctgggcaa | tggctgctat  | gtgcccttcc  | acatccaggt  | 19800 |
| gcctcagaag  | ttctttgcca | ttaaaaacct | ccttctcctg  | ccgggctcat  | acacctacga  | 19860 |
| gtggaacttc  | aggaaggatg | ttaacatggt | tctgcagagc  | tccctaggaa  | atgacctaa   | 19920 |
| ggttgacgga  | gccagcatta | agtttgatag | catttgctt   | tacgccacct  | tcttccccat  | 19980 |
| ggcccacaac  | accgcctcca | cgcttgaggc | catgcttaga  | aacgacacca  | acgaccagtc  | 20040 |
| ctttaacgac  | tatctctccg | ccgccaacat | gctctaccct  | ataccgcca   | acgctaccaa  | 20100 |
| cgtgcccata  | tccatcccct | cccgcaactg | ggcggctttc  | cgcggtggg   | ccttcacgcg  | 20160 |
| ccttaagact  | aaggaaacct | catcactggg | ctcgggctac  | gacccttatt  | acacctactc  | 20220 |
| tggctctata  | ccctacctag | atggaacctt | ttacctcaac  | cacaccttta  | agaagggtggc | 20280 |
| cattaccttt  | gactcttctg | tcagctggcc | tggcaatgac  | cgctgttta   | cccccaacga  | 20340 |
| gtttgaaatt  | aagcgctcag | ttgacgggga | gggttacaac  | gttgcccagt  | gtaacatgac  | 20400 |
| caaagactgg  | ttcctggtac | aaatgctagc | taactataac  | attggctacc  | agggcttcta  | 20460 |
| tatcccagag  | agctacaagg | accgcatgta | ctccttcttt  | agaaacttcc  | agcccatgag  | 20520 |
| ccgtcagggtg | gtggatgata | ctaaatacaa | ggactaccaa  | cagggtgggca | tcctacacca  | 20580 |
| acacaacaac  | tctggatttg | ttggctacct | tgccccacc   | atgcgcgaag  | gacaggccta  | 20640 |
| ccctgctaac  | ttcccctatc | cgcttatagg | caagaccgca  | gttgacagca  | ttaccagaa   | 20700 |
| aaagtttctt  | tgcgatcgca | ccctttggcg | catcccattc  | tccagtaact  | ttatgtccat  | 20760 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |            |            |            |       |
|------------|------------|------------|------------|------------|------------|-------|
| gggcgcactc | acagacctgg | gccaaaacct | tctctacgcc | aactccgccc | acgcgctaga | 20820 |
| catgactttt | gaggtggatc | ccatggacga | gccaccctt  | ctttatgttt | tgtttgaagt | 20880 |
| ctttgacgtg | gtccgtgtgc | accagccgca | ccgcggcgtc | atcgaaaccg | tgtacctgcg | 20940 |
| cacgcccttc | tcggccggca | acgccacaac | ataaagaagc | aagcaacatc | aacaacagct | 21000 |
| gccgccatgg | gctccagtga | gcaggaactg | aaagccattg | tcaaagatct | tggttgtggg | 21060 |
| ccatattttt | tgggcaccta | tgacaagcgc | tttccaggct | ttgtttctcc | acacaagctc | 21120 |
| gcctgcgcca | tagtcaatac | ggccggtcgc | gagactgggg | gcgtacactg | gatggccttt | 21180 |
| gcctggaacc | cgcactcaaa | aacatgctac | ctctttgagc | cctttggctt | ttctgaccag | 21240 |
| cgactcaagc | aggtttacca | gtttgagtac | gagtcactcc | tgcgccgtag | cgccattgct | 21300 |
| tcttcccccg | accgctgtat | aacgctggaa | aagtccaccc | aaagcgtaca | ggggcccaac | 21360 |
| tcggccgcct | gtggactatt | ctgctgcatg | tttctccacg | cctttgcaa  | ctggcccaa  | 21420 |
| actcccatgg | atcacaaccc | caccatgaac | cttattaccg | gggtaccaa  | ctccatgctc | 21480 |
| aacagtcccc | aggtacagcc | caccctgcgt | cgcaaccagg | aacagtctta | cagcttcctg | 21540 |
| gagcgccact | cgcctactt  | ccgcagccac | agtgcgcaga | ttaggagcgc | cacttctttt | 21600 |
| tgtcacttga | aaaacatgta | aaaataatgt | actagagaca | ctttcaataa | aggcaaatgc | 21660 |
| ttttatttgt | acactctcgg | gtgattat   | acccccaccc | ttgccgtctg | cgccgtttaa | 21720 |
| aaatcaaagg | ggttctgccg | cgcctcgtc  | tgccgactg  | gcagggacac | gttgcgatac | 21780 |
| tgggtgttag | tgctccactt | aaactcaggc | acaaccatcc | gcggcagctc | ggtgaagttt | 21840 |
| tcactccaca | ggctgcgcac | catcaccaac | gcgtttagca | ggtcgggcgc | cgatatcttg | 21900 |
| aagtcgcagt | tggggcctcc | gccctgcgcg | cgcgagttgc | gatacacagg | gttgcgacac | 21960 |
| tggaacacta | tcagcgccgg | gtggtgcacg | ctggccagca | cgctcttgtc | ggagatcaga | 22020 |
| tccgcgtcca | ggtcctccgc | gttgctcagg | gcgaacggag | tcaactttgg | tagctgcctt | 22080 |
| cccaaaaagg | gcgcgtgccc | aggctttgag | ttgactcgc  | accgtagtgg | catcaaaagg | 22140 |
| tgaccgtgcc | cggctctggg | gttaggatac | agcgcctgca | taaaagcctt | gatctgctta | 22200 |
| aaagccacct | gagcctttgc | gccttcagag | aagaacatgc | cgcaagactt | gccggaaaac | 22260 |
| tgattggccg | gacaggccgc | gtcgtgcacg | cagcaccttg | cgtcggtggt | ggagatctgc | 22320 |
| accacatttc | ggccccaccg | gttcttcacg | atcttggcct | tgctagactg | ctccttcagc | 22380 |
| gcgcgctgcc | cgttttcgct | cgtcacatcc | atttcaatca | cgtgctcctt | atttatcata | 22440 |
| atgcttccgt | gtagacactt | aagctcgcct | tcgatctcag | cgcagcggtg | cagccacaac | 22500 |
| gcgcagcccc | tgggctcgtg | atgcttgtag | gtcacctctg | caaacgactg | caggtacgcc | 22560 |
| tgcaggaatc | gccccatcat | cgtcacaaag | gtcttggtgc | tgggtgaagg | cagctgcaac | 22620 |
| ccgcggtgct | cctcgttcag | ccaggctctg | catacggccg | ccagagcttc | cacttggtca | 22680 |
| ggcagtagtt | tgaagttcgc | ctttagatcg | ttatccacgt | ggtacttgct | catcagcgcg | 22740 |
| cgcgcagcct | ccatgccctt | ctcccacgca | gacacgatcg | gcacactcag | cgggttcac  | 22800 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |            |            |            |            |       |
|------------|-------------|------------|------------|------------|------------|-------|
| accgtaattt | cactttccgc  | ttcgctgggc | tcttcctctt | cctcttgcg  | ccgcatacca | 22860 |
| cgcgccactg | ggtcgtcttc  | attcagccgc | cgactgtgc  | gcttacctcc | tttgccatgc | 22920 |
| ttgattagca | ccggtgggtt  | gctgaaaccc | accatttgta | gcgccacatc | ttctctttct | 22980 |
| tcctcgctgt | ccacgattac  | ctctggtgat | ggcgggcgct | cggtcttggg | agaagggcgc | 23040 |
| ttctttttct | tcttgggcgc  | aatggccaaa | tccgccgccg | aggtcgatgg | ccgcgggctg | 23100 |
| ggtgtgcgcg | gcaccagcgc  | gtcttgtgat | gagtcttcct | cgctctcgga | ctcgatacgc | 23160 |
| cgctcatcc  | gcttttttgg  | gggcgcccgg | ggaggcggcg | gcgacgggga | cggggacgac | 23220 |
| acgtcctcca | tggttggggg  | acgtcgcgcc | gcaccgcgtc | cgctctcggg | ggtggtttcg | 23280 |
| cgctgctcct | cttcccgcact | ggccatttcc | ttctcctata | ggcagaaaaa | gatcatggag | 23340 |
| tcagtcgaga | agaaggacag  | cctaaccgcc | ccctctgagt | tcgccaccac | cgctccacc  | 23400 |
| gatgcccca  | acgcgcctac  | caccttcccc | gtcgaggcac | ccccgcttga | ggaggaggaa | 23460 |
| gtgattatcg | agcaggaccc  | aggttttgta | agcgaagacg | acgaggaccg | ctcagtagca | 23520 |
| acagaggata | aaaagcaaga  | ccaggacaac | gcagaggcaa | acgaggaaca | agtcgggcgg | 23580 |
| ggggacgaaa | ggcatggcga  | ctacctagat | gtgggagacg | acgtgctgtt | gaagcatctg | 23640 |
| cagcgccagt | gcgccattat  | ctgcgacgcg | ttgcaagagc | gcagcgatgt | gccccctgcc | 23700 |
| atagcggatg | tcagccttgc  | ctacgaacgc | cacctattct | caccgcgcgt | accccccaaa | 23760 |
| cgccaagaaa | acggcacatg  | cgagcccaac | ccgcgcctca | acttctaccc | cgtatttgcc | 23820 |
| gtgccagagg | tgcttgccac  | ctatcacatc | tttttccaaa | actgcaagat | acccttatcc | 23880 |
| tgccgtgcca | accgcagccg  | agcggacaag | cagctggcct | tgcggcaggg | cgctgtcata | 23940 |
| cctgatatcg | cctcgctcaa  | cgaagtgcc  | aaaatctttg | aggtcttggg | acgcgacgag | 24000 |
| aagcgcgcg  | caaacgctct  | gcaacaggaa | aacagcgaaa | atgaaagtca | ctctggagtg | 24060 |
| ttggtggaac | tcgagggtga  | caacgcgcgc | ctagccgtac | taaaacgcag | catcgaggtc | 24120 |
| accactttg  | cctaccgcgc  | acttaacct  | cccccaagg  | tcatgagcac | agtcatgagt | 24180 |
| gagctgatcg | tgcgccgtgc  | gcagcccctg | gagagggatg | caaatttgca | agaacaaaca | 24240 |
| gaggagggcc | taccgcagct  | tggcgacgag | cagctagcgc | gctggcttca | aacgcgcgag | 24300 |
| cctgccgact | tggaggagcg  | acgcaaaact | atgatggccg | cagtgtctgt | taccgtggag | 24360 |
| cttgagtgca | tgacgcggtt  | ctttgctgac | ccggagatgc | agcgcaagct | agaggaaaca | 24420 |
| ttgcactaca | cctttcgaca  | gggctacgta | cgccaggcct | gcaagatctc | caacgtggag | 24480 |
| ctctgcaacc | tggtctccta  | ccttggaatt | ttgcacgaaa | accgccttgg | gcaaaacgtg | 24540 |
| cttcattcca | cgctcaaggg  | cgaggcgcgc | cgcgactacg | tccgcgactg | cgtttactta | 24600 |
| tttctatgct | acacctggca  | gacggccatg | ggcgtttggc | agcagtgtct | ggaggagtgc | 24660 |
| aacctcaagg | agctgcagaa  | actgctaaag | caaaacttga | aggacctatg | gacggccttc | 24720 |
| aacgagcgct | ccgtggccgc  | gcacctggcg | gacatcattt | tccccgaacg | cctgcttaaa | 24780 |
| accctgcaac | aggtgtctgc  | agacttcacc | agtcaaagca | tggtgcagaa | ctttaggaac | 24840 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |            |             |       |
|-------------|-------------|-------------|-------------|------------|-------------|-------|
| tttatcctag  | agcgctcagg  | aatcttgccc  | gccacctgct  | gtgcacttcc | tagcgacttt  | 24900 |
| gtgcccatta  | agtaccgcga  | atgccctccg  | ccgctttggg  | gccactgcta | ccttctgcag  | 24960 |
| ctagccaact  | accttgcccta | ccactctgac  | ataatggaag  | acgtgagcgg | tgacgggtcta | 25020 |
| ctggagtgtc  | actgtcgctg  | caacctatgc  | accccgacc   | gctccctggg | ttgcaattcg  | 25080 |
| cagctgctta  | acgaaagtca  | aattatcggg  | acctttgagc  | tgcagggtcc | ctcgctgac   | 25140 |
| gaaaagtccg  | cggctccggg  | gttgaaactc  | actccggggc  | tgtggacgtc | ggcttacctt  | 25200 |
| cgcaaatttg  | tacctgagga  | ctaccacgcc  | cacgagatta  | ggttctacga | agaccaatcc  | 25260 |
| cgcccgcccta | atgcggagct  | taccgcctgc  | gtcattaccc  | agggccacat | tcttggccaa  | 25320 |
| ttgcaagcca  | tcaacaaagc  | ccgccaagag  | tttctgctac  | gaaagggacg | gggggtttac  | 25380 |
| ttggaccccc  | agtccggcga  | ggagctcaac  | ccaatcccc   | cgccgccgca | gccctatcag  | 25440 |
| cagcagccgc  | gggcccttgc  | ttcccaggat  | ggcacccaaa  | aagaagctgc | agctgccgcc  | 25500 |
| gccaccacg   | gacgaggagg  | aatactggga  | cagtcaggca  | gaggaggttt | tggacgagga  | 25560 |
| ggaggaggac  | atgatggaag  | actgggagag  | cctagacgag  | gaagcttccg | aggtcgaaga  | 25620 |
| ggtgtcagac  | gaaacaccgt  | caccctcggg  | cgcattcccc  | tcgccggcgc | cccagaaatc  | 25680 |
| ggcaaccggg  | tccagcatgg  | ctacaacctc  | cgctcctcag  | gcgccgccgg | cactgcccgt  | 25740 |
| tcgccgaccc  | aaccgtagat  | gggacaccac  | tggaaaccagg | gccggtaagt | ccaagcagcc  | 25800 |
| gccgccgtta  | gccaagagc   | aacaacagcg  | ccaaggctac  | cgctcatggc | gcgggcacaa  | 25860 |
| gaacgccata  | gttgcttgct  | tgcaagactg  | tgggggcaac  | atctccttcg | cccgccgctt  | 25920 |
| tcttctctac  | catcacggcg  | tggccttccc  | ccgtaacatc  | ctgcattact | accgtcatct  | 25980 |
| ctacagccca  | tactgcaccg  | gcggcagcgg  | cagcaacagc  | agcggccaca | cagaagcaaa  | 26040 |
| ggcgaccgga  | tagcaagact  | ctgacaaagc  | ccaagaaatc  | cacagcggcg | gcagcagcag  | 26100 |
| gaggaggagc  | gctgcgtctg  | gcgccccaacg | aaccgcgtatc | gaccgcgag  | cttagaaaca  | 26160 |
| ggatttttcc  | cactctgtat  | gctatatattc | aacagagcag  | gggccaagaa | caagagctga  | 26220 |
| aaataaaaaa  | caggtctctg  | cgatccctca  | cccgcagctg  | cctgtatcac | aaaagcgaag  | 26280 |
| atcagcttcg  | gcgcacgctg  | gaagacgcgg  | aggctctctt  | cagtaaatac | tgcgcgctga  | 26340 |
| ctcttaagga  | ctagtttcgc  | gccctttctc  | aaatttaagc  | gcgaaaacta | cgatcatctcc | 26400 |
| agcggccaca  | cccggcgcca  | gcacctgttg  | tcagcgccat  | tatgagcaag | gaaattccca  | 26460 |
| cgccctacat  | gtggagttac  | cagccacaaa  | tgggacttgc  | ggctggagct | gccaagact   | 26520 |
| actcaacccg  | aataaactac  | atgagcgcgg  | gaccccat    | gatatcccgg | gtcaacggaa  | 26580 |
| tacgcgcca   | ccgaaaccga  | attctcctgg  | aacaggcggc  | tattaccacc | acacctcgta  | 26640 |
| ataaccttaa  | tccccgtagt  | tggcccgcgtg | ccctgggtgta | ccaggaaagt | cccgtccca   | 26700 |
| ccactgtggg  | acttcccaga  | gacgcccagg  | ccgaagttca  | gatgactaac | tcaggggcgc  | 26760 |
| agcttgccgg  | cggctttcgt  | cacagggtgc  | ggtcgcccgg  | gcagggtata | actcacctga  | 26820 |
| caatcagagg  | gcgagggtatt | cagctcaacg  | acgagtcggg  | gagctcctcg | cttgggtctcc | 26880 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |            |       |
|-------------|-------------|-------------|-------------|-------------|------------|-------|
| gtccggacgg  | gacatttcag  | atcggcgggc  | ccggccgctc  | ttcattcacg  | cctcgtcagg | 26940 |
| caatcctaac  | tctgcagacc  | tcgtcctctg  | agccgcgctc  | tggaggcatt  | ggaactctgc | 27000 |
| aattttattga | ggagttttgtg | ccatcgggtct | actttaaccc  | cttctcggga  | cctcccggcc | 27060 |
| actatccgga  | tcaattttatt | cctaactttg  | acgcggtaaa  | ggactcggcg  | gacggctacg | 27120 |
| actgaatgtt  | aagtggagag  | gcagagcaac  | tgcgcctgaa  | acacctggtc  | cactgtcgcc | 27180 |
| gccacaagtg  | ctttgcccgc  | gactccgggtg | agttttgcta  | ctttgaattg  | cccgaggatc | 27240 |
| atatcgaggg  | cccggcgcac  | ggcgtccggc  | ttaccgcca   | gggagagctt  | gcccgtagcc | 27300 |
| tgattcggga  | gtttaccag   | cgtcccctgc  | tagttgagcg  | ggacagggga  | ccctgtgttc | 27360 |
| tcactgtgat  | ttgcaactgt  | cctaaccctg  | gattacatca  | agatctttgt  | tgccatctct | 27420 |
| gtgctgagta  | taataaatac  | agaaattaaa  | atatactggg  | gctcctatcg  | ccatcctgta | 27480 |
| aacgccaccg  | tcttcacccg  | ccaagcaaaa  | ccaaggcgaa  | ccttacctgg  | tacttttaac | 27540 |
| atctctccct  | ctgtgattta  | caacagtttc  | aaccagacg   | gagtgagtct  | acgagagaac | 27600 |
| ctctccgagc  | tcagctactc  | catcagaaaa  | aacaccaccc  | tccttacctg  | ccgggaacgt | 27660 |
| acgagtgcgt  | caccggccgc  | tgcaccacac  | ctaccgcctg  | accgtaaacc  | agactttttc | 27720 |
| cggacagacc  | tcaataactc  | tgtttaccag  | aacaggaggt  | gagcttagaa  | aacccttagg | 27780 |
| gtattaggcc  | aaaggcgcag  | ctactgtggg  | gtttatgaac  | aattcaagca  | actctacggg | 27840 |
| ctatttcta   | tcaggtttct  | ctagaatcgg  | ggttgggggt  | attctctgtc  | ttgtgattct | 27900 |
| ctttattctt  | atactaacgc  | ttctctgcct  | aaggctcgcc  | gcctgctgtg  | tgcacatttg | 27960 |
| catttattgt  | cagcttttta  | aacgctgggg  | tcgccacca   | agatgattag  | gtacataatc | 28020 |
| ctaggtttac  | tcacccttgc  | gtcagcccac  | ggtaccaccc  | aaaagggtgga | ttttaaggag | 28080 |
| ccagcctgta  | atgttacatt  | cgcagctgaa  | gctaattgagt | gcaccactct  | tataaaatgc | 28140 |
| accacagaac  | atgaaaagct  | gcttatttcgc | cacaaaaaca  | aaattggcaa  | gtatgctggt | 28200 |
| tatgctat    | ggcagccagg  | tgacactaca  | gagtataatg  | ttacagtttt  | ccagggtaaa | 28260 |
| agtcataaaa  | cttttatgta  | tacttttcca  | ttttatgaaa  | tgtgcgacat  | taccatgtac | 28320 |
| atgagcaa    | agtataagtt  | gtggccccc   | caaaattgtg  | tggaaaacac  | tggcactttc | 28380 |
| tgctgcactg  | ctatgcta    | tacagtgtc   | gctttggtct  | gtaccctact  | ctatattaaa | 28440 |
| tacaaaagca  | gacgcagctt  | tattgaggaa  | aagaaaatgc  | cttaattttac | taagttacaa | 28500 |
| agctaattgtc | accactaact  | gctttactcg  | ctgcttgcaa  | aacaaattca  | aaaagttagc | 28560 |
| attataatta  | gaataggatt  | taaaccccc   | ggtcatttcc  | tgctcaatac  | cattcccctg | 28620 |
| aacaattgac  | tctatgtggg  | atatgctcca  | gcgctacaac  | cttgaagtca  | ggcttcctgg | 28680 |
| atgtcagcat  | ctgactttgg  | ccagcacctg  | tcccgcggat  | ttgttccagt  | ccaactacag | 28740 |
| cgaccacccc  | taacagagat  | gaccaacaca  | accaacgcgg  | ccgccgctac  | cggacttaca | 28800 |
| tctaccacaa  | atacacccca  | agtttctgcc  | tttgtcaata  | actgggataa  | cttgggcatg | 28860 |
| tggtggttct  | ccatagcgct  | tatgtttgta  | tgccttatta  | ttatgtggct  | catctgctgc | 28920 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |            |            |             |       |
|-------------|-------------|-------------|------------|------------|-------------|-------|
| ctaaagcgca  | aacgcgccccg | accacccatc  | tatagtccca | tcattgtgct | acacccaaac  | 28980 |
| aatgatggaa  | tccatagatt  | ggacggactg  | aaacacatgt | tcttttctct | tacagtatga  | 29040 |
| ttaaagtgaga | catgattcct  | cgagttttta  | tattactgac | ccttggtgcg | ctttttttgt  | 29100 |
| gCGtgctcca  | cattggctgc  | ggtttctcac  | atcgaagtag | actgcattcc | agccttcaca  | 29160 |
| gtctatttgc  | tttacggatt  | tgtcaccctc  | acgctcatct | gcagcctcat | cactgtggtc  | 29220 |
| atcgccctta  | tccagtgcatt | tgactgggtc  | tgtgtgCGct | ttgcatatct | cagacacccat | 29280 |
| ccccagtaca  | gggacaggac  | tatagctgag  | cttcttagaa | ttctttaatt | atgaaattta  | 29340 |
| ctgtgacttt  | tctgctgatt  | atttgcaccc  | tatctgcgtt | ttgttccccg | acctccaagc  | 29400 |
| ctcaaagaca  | tatatcatgc  | agattcactc  | gtatatggaa | tattccaagt | tgctacaatg  | 29460 |
| aaaaaagcga  | tctttccgaa  | gcctgggttat | atgcaatcat | ctctgttatg | gtgttctgca  | 29520 |
| gtaccatctt  | agccctagct  | atatatccct  | accttgacat | tggttggaac | gcaatagatg  | 29580 |
| ccatgaacca  | cccaactttc  | cccgcgccccg | ctatgcttcc | actgcaacaa | gttggtgccg  | 29640 |
| gcggctttgt  | cccagccaat  | cagcctcgcc  | caccttctcc | cacccccact | gaaatcagct  | 29700 |
| actttaatct  | aacaggagga  | gatgactgac  | accctagatc | tagaaatgga | cggaattatt  | 29760 |
| acagagcagc  | gcctgctaga  | aagacgcagg  | gcagcggccg | agcaacagcg | catgaatcaa  | 29820 |
| gagctccaag  | acatgggttaa | cttgcaccag  | tgcaaaaggg | gtatcttttg | tctggtaaag  | 29880 |
| caggccaaag  | tcacctacga  | cagtaatacc  | accggacacc | gccttagcta | caagttgccaa | 29940 |
| accaagcgtc  | agaaattggt  | ggcatgggtg  | ggagaaaagc | ccattaccat | aactcagcac  | 30000 |
| tcggtagaaa  | ccgaaggctg  | cattcactca  | ccttgtcaag | gacctgagga | tctctgcacc  | 30060 |
| cttattaaga  | ccctgtgcgg  | tctcaaagat  | cttattccct | ttaactaata | aaaaaaaaata | 30120 |
| ataaagcatc  | acttacttaa  | aatcagttag  | caaatttctg | tccagtttat | tcagcagcac  | 30180 |
| ctccttgccc  | tcctcccagc  | tctgggtattg | cagcttcctc | ctggctgcaa | actttctcca  | 30240 |
| caatctaaat  | ggaatgtcag  | tttcctcctg  | ttcctgtcca | tccgcaccca | ctatcttcat  | 30300 |
| gttggtgcag  | atgaagcgcg  | caagaccgtc  | tgaagatacc | ttcaaccccg | tgtatccata  | 30360 |
| tgacacggaa  | accggtcctc  | caactgtgcc  | ttttcttact | cctccctttg | tatcccccaa  | 30420 |
| tggggtttcaa | gagagtcccc  | ctgggggtact | ctctttgCGc | ctatccgaac | ctctagttac  | 30480 |
| ctccaatggc  | atgcttgCGc  | tcaaaatggg  | caacggcctc | tctctggacg | aggccggcaa  | 30540 |
| ccttacctcc  | caaaatgtaa  | ccactgtgag  | cccacctctc | aaaaaaacca | agtcaaacat  | 30600 |
| aaacctggaa  | atatctgcac  | ccctcacagt  | tacctcagaa | gccctaactg | tggtgcccgc  | 30660 |
| cgcacctcta  | atggtcgcgg  | gcaacacact  | caccatgcaa | tcacaggccc | cgctaaccgt  | 30720 |
| gcacgactcc  | aaacttagca  | ttgccaccca  | aggaccctc  | acagtgtcag | aaggaaagct  | 30780 |
| agccctgcaa  | acatcaggcc  | ccctcaccac  | caccgatagc | agtaccctta | ctatcactgc  | 30840 |
| ctcaccctct  | ctaactactg  | ccactggtag  | cttgggcatt | gacttgaaag | agcccattta  | 30900 |
| tacacaaaat  | ggaaaactag  | gactaaagta  | cggggctcct | ttgcatgtaa | cagacgacct  | 30960 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |            |             |            |             |       |
|------------|-------------|------------|-------------|------------|-------------|-------|
| aaacactttg | accgtagcaa  | ctggtccagg | tgtgactatt  | aataatactt | ccttgcaaac  | 31020 |
| taaagttact | ggagccttgg  | gttttgattc | acaaggcaat  | atgcaactta | atgtagcagg  | 31080 |
| aggactaagg | attgatttct  | aaaacagacg | ccttatactt  | gatgttagtt | atccgtttga  | 31140 |
| tgctcaaaac | caactaaatc  | taagactagg | acagggccct  | ctttttataa | actcagccca  | 31200 |
| caacttggat | attaactaca  | acaaaggcct | ttacttgttt  | acagcttcaa | acaattccaa  | 31260 |
| aaagcttgag | gttaacctaa  | gcactgccaa | ggggttgatg  | tttgacgcta | cagccatagc  | 31320 |
| cattaatgca | ggagatgggc  | ttgaatttgg | ttcacctaata | gcaccaaaca | caaattcccct | 31380 |
| caaaacaaaa | attggccatg  | gcctagaatt | tgattcaaac  | aaggctatgg | ttcctaaact  | 31440 |
| aggaactggc | cttagttttg  | acagcacagg | tgccattaca  | gtaggaaaca | aaaataatga  | 31500 |
| taagctaact | ttgtggacca  | caccagctcc | atctcctaac  | tgtagactaa | atgcagagaa  | 31560 |
| agatgctaaa | ctcacttttg  | tcttaacaaa | atgtggcagt  | caaatacttg | ctacagtttc  | 31620 |
| agttttggct | gttaaaggca  | gtttggctcc | aatatctgga  | acagttcaaa | gtgctcatct  | 31680 |
| tattataaga | tttgacgaaa  | atggagtgct | actaaacaat  | tccttcctgg | accagaata   | 31740 |
| ttggaacttt | agaaatggag  | atcttactga | aggcacagcc  | tatacaaacg | ctgttggtt   | 31800 |
| tatgcctaac | ctatcagctt  | atccaaaatc | tcacggtaaa  | actgccaaaa | gtaacattgt  | 31860 |
| cagtcaagtt | tacttaaacg  | gagacaaaac | taaacctgta  | acactaacca | ttactactaa  | 31920 |
| cggtacacag | gaaacaggag  | acacaactcc | aagtgcatac  | tctatgtcat | tttcatggga  | 31980 |
| ctggtctggc | cacaactaca  | ttaatgaaat | atttgccaca  | tcctcttaca | ctttttcata  | 32040 |
| cattgcccac | gaataaagaa  | tcgtttgtgt | tatgtttcaa  | cgtgtttatt | tttcaattgc  | 32100 |
| agaaaatttc | aagtcatttt  | tcattcagta | gtatagcccc  | accaccacat | agcttatata  | 32160 |
| gatcaccgta | ccttaatcaa  | actcacagaa | ccctagtatt  | caacctgcca | cctccctccc  | 32220 |
| aacacacaga | gtacacagtc  | ctttctcccc | ggctggcctt  | aaaaagcatc | atatcatggg  | 32280 |
| taacagacat | attcttaggt  | gttatattcc | acacggtttc  | ctgtcgagcc | aaacgctcat  | 32340 |
| cagtgatatt | aataaaactcc | ccgggcagct | cacttaagtt  | catgtcgctg | tccagctgct  | 32400 |
| gagccacagg | ctgctgtcca  | acttgcggtt | gcttaacggg  | cggcgaagga | gaagtccacg  | 32460 |
| cctacatggg | ggtagagtca  | taatcgtgca | tcaggatagg  | gcggtggtgc | tgcagcagcg  | 32520 |
| cgcgataaaa | ctgctgccgc  | cggcgctccg | tcctgcagga  | atacaacatg | gcagtgggtct | 32580 |
| cctcagcgat | gattcgcacc  | gcccgcagca | taaggcgcct  | tgtcctccgg | gcacagcagc  | 32640 |
| gcaccctgat | ctcacttaaa  | tcagcacagt | aactgcagca  | cagcaccaca | atattgttca  | 32700 |
| aaatcccaca | gtgcaaggcg  | ctgtatccaa | agctcatggc  | ggggaccaca | gaaccacagt  | 32760 |
| ggccatcata | ccacaagcgc  | aggtagatta | agtggcgacc  | cctcataaac | acgctggaca  | 32820 |
| taaacattac | ctcttttggc  | atgttgtaat | tcaccacctc  | ccggtaccat | ataaacctct  | 32880 |
| gattaaacat | ggcgccatcc  | accaccatcc | taaaccagct  | ggccaaaacc | tgcccgcggg  | 32940 |
| ctatacactg | cagggaaaccg | ggactggaac | aatgacagtg  | gagagcccag | gactcgtaac  | 33000 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |            |             |             |            |       |
|-------------|-------------|------------|-------------|-------------|------------|-------|
| catggatcat  | catgctcgtc  | atgatataca | tgttggcaca  | acacaggcac  | acgtgcatac | 33060 |
| acttcctcag  | gattacaagc  | tcctcccgcg | ttagaaccat  | atcccaggga  | acaacccatt | 33120 |
| cctgaatcag  | cgtaaattccc | acactgcagg | gaagacctcg  | cacgtaactc  | acgttgtgca | 33180 |
| ttgtcaaagt  | gttacattcg  | ggcagcagcg | gatgatcctc  | cagtatggta  | gcgcggggtt | 33240 |
| ctgtctcaaa  | aggaggtaga  | cgatccctac | tgtacggagt  | gcgccgagac  | aaccgagatc | 33300 |
| gtgttggtcg  | tagtgtcatg  | ccaaatggaa | cgccggacgt  | agtcataatt  | cctgaagcaa | 33360 |
| aaccagggtgc | gggcgtgaca  | aacagatctg | cgtctccggt  | ctcgccgctt  | agatcgctct | 33420 |
| gtgtagtagt  | tgtagtatat  | ccactctctc | aaagcatcca  | ggcgccccct  | ggcttcgggt | 33480 |
| tctatgtaaa  | ctccttcatg  | cgccgctgcc | ctgataacat  | ccaccaccgc  | agaataagcc | 33540 |
| acaccagcc   | aacctacaca  | ttcgttctgc | gagtcacaca  | cgaggaggagc | gggaagagct | 33600 |
| ggaagaacca  | tgtttttttt  | tttattccaa | aagattatcc  | aaaacctcaa  | aatgaagatc | 33660 |
| tattaagtga  | acgcgctccc  | ctccggtggc | gtggtcaaac  | tctacagcca  | aagaacagat | 33720 |
| aatggcattt  | gtaagatggt  | gcacaatggc | ttccaaaagg  | caaacggccc  | tcacgtccaa | 33780 |
| gtggacgtaa  | aggctaaacc  | cttcagggtg | aatctcctct  | ataaacattc  | cagcaccttc | 33840 |
| aaccatgccc  | aaataattct  | catctcgcca | ccttctcaat  | atatctctaa  | gcaaattccc | 33900 |
| aatattaagt  | ccggccattg  | taaaaatctg | ctccagagcg  | ccctccacct  | tcagcctcaa | 33960 |
| gcagcgaatc  | atgattgcaa  | aaattcagg  | tcctcacaga  | cctgtataag  | attcaaaagc | 34020 |
| ggaacattaa  | caaaaatacc  | gcgatcccg  | aggtcccttc  | gcagggccag  | ctgaacataa | 34080 |
| tcgtgcagg   | ctgcacggac  | cagcgcggcc | acttccccgc  | caggaacct   | gacaaaagaa | 34140 |
| cccacactga  | ttatgacacg  | catactcgga | gctatgctaa  | ccagcgtagc  | cccgatgtaa | 34200 |
| gcttgttgca  | tgggcggcga  | tataaaatgc | aagggtgctgc | tcaaaaaatc  | aggcaaagcc | 34260 |
| tcgcgcaaaa  | aagaaagcac  | atcgtagtca | tgctcatgca  | gataaaggca  | ggtaagctcc | 34320 |
| ggaaccacca  | cagaaaaaga  | caccattttt | ctctcaaaca  | tgtctgcggg  | tttctgcata | 34380 |
| aacacaaaat  | aaaataacaa  | aaaaacattt | aaacattaga  | agcctgtctt  | acaacaggaa | 34440 |
| aaacaaccct  | tataagcata  | agacggacta | cggccatgcc  | ggcgtgaccg  | taaaaaaact | 34500 |
| ggtcaccgtg  | attaaaaagc  | accaccgaca | gctcctcggt  | catgtccgga  | gtcataatgt | 34560 |
| aagactcggt  | aaacacatca  | ggttgattca | catcggtcag  | tgctaaaaag  | cgaccgaaat | 34620 |
| agcccggggg  | aatacatacc  | cgcaggcgta | gagacaacat  | tacagcccc   | ataggaggta | 34680 |
| taacaaaatt  | aataggagag  | aaaaacacat | aaacacctga  | aaaaccctcc  | tgcctaggca | 34740 |
| aaatagcacc  | ctcccgtctc  | agaacaacat | acagcgcttc  | cacagcggca  | gccataacag | 34800 |
| tcagccttac  | cagtaaaaaa  | gaaaacctat | taaaaaaaca  | ccactcgaca  | cggcaccagc | 34860 |
| tcaatcagtc  | acagtgtaaa  | aaagggccaa | gtgcagagcg  | agtatatata  | ggactaaaaa | 34920 |
| atgacgtaac  | ggttaaagtc  | cacaaaaaac | accagaaaaa  | ccgcacgcga  | acctacgccc | 34980 |
| agaaacgaaa  | gccaaaaaac  | ccacaacttc | ctcaaatcgt  | cacttccggt  | ttccacggtt | 35040 |

# 3182\_043PC02\_SequenceListing\_ascii

|                                                                   |       |
|-------------------------------------------------------------------|-------|
| acgtcacttc ccattttaag aaaactacaa ttcccaacac atacaagtta ctccgcccta | 35100 |
| aaacctacgt caccgcgcc gttcccacgc cccgcgccac gtcacaaact ccacccctc   | 35160 |
| attatcatat tggcttcaat ccaaaataag gtatattatt gatgatg               | 35207 |

<210> 20  
 <211> 35203  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Construct containing two mismatches with no duplication

|                                                                    |      |
|--------------------------------------------------------------------|------|
| <400> 20                                                           |      |
| catcatcaat aatatacctt attttggatt gaagccaata tgataatgag ggggtggagt  | 60   |
| ttgtgacgtg gcgcggggcg tgggaacggg gcgggtgacg tagtagtgtg gcggaagtgt  | 120  |
| gatgttgcaa gtgtggcgga acacatgtaa gcgacggatg tggcaaaagt gacgtttttg  | 180  |
| gtgtgcgccg gtgtacacag gaagtgacaa ttttcgcgcg gttttaggcg gatgttgtag  | 240  |
| taaatttggg cgtaaccgag taagatttgg ccattttcgc gggaaaactg aataagagga  | 300  |
| agtgaatct gaataatttt gtgttactca tagcgcgtaa tatttgtcta gggccgcggg   | 360  |
| gactttgacc gtttacgtgg agactcgccc aggtgttttt ctcaggtgtt ttccgcgttc  | 420  |
| cgggtcaaag ttggcgtttt attattatag tcagtacgta cgtgtacttc tgatcggcga  | 480  |
| tactagggag ataaggatgt acctgacaaa accacattgt tgttgttatc attattattt  | 540  |
| agttttcctt ccttgctaac tcctgacgga atctttctca cctcaaagtc gaagtacttt  | 600  |
| agtttagaaa agacttggtg gaaggggtgg tgggtgaaaa gtaggggtgat cttccaaact | 660  |
| aatctggttc cccgcccgc ccagtagctg ggattcaaga gcgaagagtg gggatcgtcc   | 720  |
| ccttgtttga tcagaaagac ataaaaggaa aatcaagtga acaatgatca gccccacctc  | 780  |
| cacccacccc ccctgcgcgc gcacaataca atctatttaa ttgtacttca tacttttcat  | 840  |
| tccaatgggg tgactttgct tctggagaaa ctcttgattc ttgaactctg gggctggcag  | 900  |
| ctagcctcca gaagcaaagt caccctattg gaatgaaaag tatgaagtac aatgaaaagt  | 960  |
| atgaagtact ggctccagaa gcaaagtcac cctccagaag caaagtcacc ccattggaat  | 1020 |
| gaaaagtatg aagtacgcta gcaaaagggg aagcgggctg ctgctctctg caggttctgc  | 1080 |
| agcggctctt gtctagtggg tgttttcttt ttcttagccc tgcccctgga ttgtcagacg  | 1140 |
| gcgggcgtct gcctctgaag ttagccgtga tttcctctag agccgggtct tatctctggc  | 1200 |
| tgcacgttgc ctgtgggtga ctaatcacac aataacattg tttagggctg gaataaagtc  | 1260 |
| agagctgttt acccccactc tataggggtt caatataaaa aggcggcgga gaactgtccg  | 1320 |
| agtcagaagc gttcctgcac cggcgctgag agcctgacct ggtctgctcc gctgtccttg  | 1380 |
| cgcgctgcct cccggctgcc cgcgacgctt tcgccccagt ggaagggcca cttgctgcgg  | 1440 |
| ccgctaattc tgcagatcgg gatccggcat gggcctctcc accgtgcctg acctgctgct  | 1500 |
| gccgctggtg ctctggagc tgttgggtgg aatatacccc tcaggggtta ttggactggt   | 1560 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |            |             |            |            |      |
|-------------|------------|------------|-------------|------------|------------|------|
| ccctcaccta  | ggggacaggg | agaagagaga | tagtgtgtgt  | ccccaaggaa | aatatatcca | 1620 |
| ccctcaaaat  | aattcgattt | gctgtacca  | gtgccacaaa  | ggaacctact | tgtacaatga | 1680 |
| ctgtccaggc  | ccggggcagg | atacggactg | cagggagtgt  | gagagcggct | ccttcaccgc | 1740 |
| ttcagaaaac  | cacctcagac | actgcctcag | ctgctccaaa  | tgccgaaagg | aaatgggtca | 1800 |
| ggtaggagatc | tcttcttgca | cagtggaccg | ggacaccgtg  | tgtggctgca | ggaagaacca | 1860 |
| gtaccggcat  | tattggagt  | aaaacctttt | ccagtgcctt  | aattgcagcc | tctgcctcaa | 1920 |
| tgggaccgtg  | cacctctcct | gccaggagaa | acagaacacc  | gtgtgcacct | gccatgcagg | 1980 |
| tttctttcta  | agagaaaacg | agtgtgtctc | ctgtagtaac  | tgttaagaaa | gcctggagt  | 2040 |
| cacgaagttg  | tgcctaccaa | gcttaggata | cagatctaac  | ttgggggtgg | tttgtcttct | 2100 |
| tcttttgcca  | attccactaa | ttgtttgggt | gaagagaaag  | gaagtacaga | aaacatgcag | 2160 |
| aaagcacaga  | aaggaaaacc | aaggttctca | tgaatctcca  | accttaaata | ctgaaacagt | 2220 |
| ggcaataaat  | ttatctgatg | ttgacttgag | taaatatata  | accactattg | ctggagtcac | 2280 |
| gacactaagt  | caagttaaag | gctttgttcg | aaagaatggg  | gtcaatgaag | ccaaaataga | 2340 |
| tgagatcaag  | aatgacaatg | tccaagacac | agcagaacag  | aaagttcaac | tgcttcgtaa | 2400 |
| ttggcatcaa  | cttcatggaa | agaaagaagc | gtatgacaca  | ttgattaaag | atctcaaaaa | 2460 |
| agccaatctt  | tgtactcttg | cagagaaaat | tcagactata  | atcctcaagg | acattactag | 2520 |
| tgactcagaa  | aattcaaact | tcagaaatga | aatccaaagc  | ttggtctagc | tcgagcatgc | 2580 |
| atctaggcgg  | ccgcatggca | gaaattcgcg | aattcgctag  | cgtaaacgga | tcctctagac | 2640 |
| gagatccgaa  | cttgtttatt | gcagcttata | atggttacia  | ataaagcaat | agcatcacia | 2700 |
| atttcacaaa  | taaagcattt | ttttcactgc | attctagtgt  | tggtttgtcc | aaactcatca | 2760 |
| atgtatctta  | tcagtcttag | atctgtactg | aaatgtgtgg  | gcgtggctta | aggggtggga | 2820 |
| agaatatata  | aggtgggggt | cttatgtagt | tttgtatctg  | ttttgcagca | gccgccgccg | 2880 |
| ccatgagcac  | caactcgttt | gatggaagca | ttgtgagctc  | atatttgaca | acgcgcatgc | 2940 |
| ccccatgggc  | cggggtgcgt | cagaatgtga | tgggctccag  | cattgatggg | cgccccgtcc | 3000 |
| tgcccgcaaa  | ctctactacc | ttgacctacg | agaccgtgtc  | tggaaacgcc | ttggagactg | 3060 |
| cagcctccgc  | cgccgcttca | gccgctgcag | ccaccgcccc  | cgggattgtg | actgactttg | 3120 |
| ctttcctgag  | cccgtttgca | agcagtgcag | cttcccgttc  | atccgccccg | gatgacaagt | 3180 |
| tgacggctct  | tttggcacia | ttggattctt | tgaccgggga  | acttaatgtc | gtttctcagc | 3240 |
| agctgttgga  | tctgcgccag | caggtttctg | ccctgaaggc  | ttcctcccct | cccaatgcgg | 3300 |
| tttaaaacat  | aaataaaaaa | ccagactctg | tttggtttg   | gatcaagcaa | gtgtcttgct | 3360 |
| gtctttat    | aggggttttg | cgcgcgcggg | aggcccgggg  | ccagcgggtc | cggctcgttg | 3420 |
| gggtcctgtg  | tattttttcc | aggacgtggg | aaagggtgact | ctggatgttc | agatacatgg | 3480 |
| gcataagccc  | gtctctgggg | tggaggtagc | accactgcag  | agcttcatgc | tgccgggtgg | 3540 |
| tggtgtagat  | gatccagtcg | tagcaggagc | gctgggcgtg  | gtgcctaaaa | atgtctttca | 3600 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |            |            |            |             |      |
|------------|-------------|------------|------------|------------|-------------|------|
| gtagcaagct | gattgccagg  | ggcaggccct | tggtgtaagt | gtttacaaag | cggttaagct  | 3660 |
| gggatgggtg | catacgtggg  | gatatgagat | gcatcttgga | ctgtatTTTT | aggttggtta  | 3720 |
| tgttcccagc | catatccctc  | cggggattca | tggtgtgcag | aaccaccagc | acagtgtatc  | 3780 |
| cgggtgactt | gggaaatttg  | tcatgtagct | tagaaggaaa | tgcgtggaag | aacttgagga  | 3840 |
| cgcccttggt | acctccaaga  | ttttccatgc | attcgtccat | aatgatggca | atgggcccac  | 3900 |
| gggcggcggc | ctgggcgaag  | atatttcttg | gatcactaac | gtcatagttg | tgttccagga  | 3960 |
| tgagatcgtc | ataggccatt  | tttacaaagc | gcgggcggag | ggtgccagac | tgcggtataa  | 4020 |
| tggttccatc | cggcccaggg  | gcgtagttac | cctcacagat | ttgcatttcc | cacgctttga  | 4080 |
| gttcagatgg | ggggatcatg  | tctacctgcg | gggcgatgaa | gaaaacgggt | tccggggtag  | 4140 |
| gggagatcag | ctgggaagaa  | agcaggttcc | tgagcagctg | cgacttaccg | cagccggtgg  | 4200 |
| gcccgtaaat | cacacctatt  | accggctgca | actggtagtt | aagagagctg | cagctgccgt  | 4260 |
| catccctgag | cagggggggc  | acttcgttaa | gcatgtccct | gactcgcag  | ttttccctga  | 4320 |
| ccaaatccgc | cagaaggcgc  | tcgccgccca | gcgatagcag | ttcttgcaag | gaagcaaagt  | 4380 |
| ttttcaacgg | tttgagaccg  | tccgccgtag | gcatgctttt | gagcgtttga | ccaagcagtt  | 4440 |
| ccaggcggtc | ccacagctcg  | gtcacctgct | ctacggcatc | tcgatccagc | atatctcctc  | 4500 |
| gtttcgcggg | ttggggcggc  | tttcgctgta | cggcagtagt | cgggtgctcg | ccagacgggc  | 4560 |
| cagggtcatg | tctttccacg  | ggcgcagggt | cctcgtcagc | gtagtctggg | tcacggtgaa  | 4620 |
| ggggtgctgc | ccgggctgcg  | cgctggccag | ggtgcgcttg | aggctgggtc | tgctggtgct  | 4680 |
| gaagcgctgc | cgggtcttcgc | cctgcgcgtc | ggccaggtag | catttgacca | tggtgtcata  | 4740 |
| gtccagcccc | tccgcggcgt  | ggcccttggc | gcgcagcttg | cccttgagg  | aggcgccgca  | 4800 |
| cgaggggcag | tgcagacttt  | tgagggcgta | gagcttgggc | gcgagaaata | ccgattccgg  | 4860 |
| ggagtaggca | tccgcgccgc  | aggccccgca | gacggtctcg | cattccacga | gccagggtgag | 4920 |
| ctctggccgt | tcggggtcaa  | aaaccagggt | tccccatgc  | tttttgatgc | gtttcttacc  | 4980 |
| tctggtttcc | atgagccggt  | gtccacgctc | ggtgacgaaa | aggctgtccg | tgtccccgta  | 5040 |
| tacagacttg | agaggcctgt  | cctcgagcgg | tgttccgcgg | tcctcctcgt | atagaaactc  | 5100 |
| ggaccactct | gagacaaagg  | ctcgcgtcca | ggccagcacg | aaggaggcta | agtgggaggg  | 5160 |
| gtagcggtcg | ttgtccacta  | gggggtccac | tcgctccagg | gtgtgaagac | acatgtcgcc  | 5220 |
| ctcttcggca | tcaaggaagg  | tgattgggtt | gtaggtgtag | gccacgtgac | cgggtgttcc  | 5280 |
| tgaagggggg | ctataaaaagg | gggtgggggc | gcgttcgtcc | tcactctctt | ccgcatcgct  | 5340 |
| gtctgcgagg | gccagctggt  | ggggtgagta | ctccctctga | aaagcgggca | tgacttctgc  | 5400 |
| gctaagattg | tcagttttcca | aaaacgagga | ggatttgata | ttcacctggc | ccgcggtgat  | 5460 |
| gcctttgagg | gtggccgcat  | ccatctggtc | agaaaagaca | atctttttgt | tgtcaagctt  | 5520 |
| ggtggcaaac | gacccgtaga  | gggcgttgga | cagcaacttg | gcgatggagc | gcagggtttg  | 5580 |
| gtttttgtcg | cgatcggcgc  | gctccttggc | cgcgatgttt | agctgcacgt | attcgcgcgc  | 5640 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aacgcaccgc  | cattcgggaa  | agacggtggt  | gcgctcgtcg  | ggcaccaggt  | gcacgcgcca  | 5700 |
| accgcgggtt  | tgcaggggtga | caaggtcaac  | gctgggtggct | acctctccgc  | gtaggcgctc  | 5760 |
| gttgggtccag | cagaggcggc  | cgcccttgcg  | cgagcagaat  | ggcggtaggg  | ggtctagctg  | 5820 |
| cgtctcgtcc  | ggggggtctg  | cgtccacggt  | aaagaccccg  | ggcagcaggc  | gcgcgtcgaa  | 5880 |
| gtagtctatc  | ttgcatcctt  | gcaagtctag  | cgcctgctgc  | catgcgcggg  | cggcaagcgc  | 5940 |
| gcgctcgtat  | gggttgagt   | ggggacccca  | tggcatgggg  | tgggtgagcg  | cggaggcgta  | 6000 |
| catgccgcaa  | atgtcgtaaa  | cgtagagggg  | ctctctgagt  | attccaagat  | atgtagggta  | 6060 |
| gcatcttcca  | ccgcggatgc  | tggcgcgcac  | gtaatcgtat  | agttcgtgcg  | agggagcgag  | 6120 |
| gaggtcggga  | ccgaggttgc  | tacgggcggg  | ctgctctgct  | cggaaagacta | tctgcctgaa  | 6180 |
| gatggcatgt  | gagttggatg  | atatggttgg  | acgctggaag  | acgttgaagc  | tggcgtctgt  | 6240 |
| gagacctacc  | gcgtcacgca  | cgaaggaggc  | gtaggagtcg  | cgcagcttgt  | tgaccagctc  | 6300 |
| ggcggtgacc  | tgcacgtcta  | gggcgcagta  | gtccagggtt  | tccttgatga  | tgtcatactt  | 6360 |
| atcctgtccc  | ttttttttcc  | acagctcgcg  | gttgaggaca  | aactcttcgc  | ggtctttcca  | 6420 |
| gtactcttgg  | atcggaaac   | cgtcggcctc  | cgaacggtaa  | gagcctagca  | tgtagaactg  | 6480 |
| gttgacggcc  | tggtaggcgc  | agcatccctt  | ttctacgggt  | agcgcgtatg  | cctgcgcggc  | 6540 |
| cttccggagc  | gaggtgtggg  | tgagcgcaaa  | ggtgtccctg  | accatgactt  | tgagggtactg | 6600 |
| gtatttgaag  | tcagtgtcgt  | cgcacccgcc  | ctgctcccag  | agcaaaaagt  | ccgtgcgctt  | 6660 |
| tttggaacgc  | ggatttggca  | gggcgaaggt  | gacatcgttg  | aagagtatct  | ttcccgcgcg  | 6720 |
| aggcataaag  | ttgcgtgtga  | tgcggaaggg  | tcccggcacc  | tcggaacggt  | tgttaattac  | 6780 |
| ctgggcgggc  | agcacgatct  | cgtcaaagcc  | gttgatgttg  | tggcccacaa  | tgtaaagttc  | 6840 |
| caagaagcgc  | gggatgccct  | tgatggaagg  | caatttttta  | agttcctcgt  | aggtgagctc  | 6900 |
| ttcaggggag  | ctgagcccgt  | gctctgaaag  | ggcccagtct  | gcaagatgag  | ggttggaagc  | 6960 |
| gacgaatgag  | ctccacaggt  | cacggggccat | tagcatttgc  | aggtggtcgc  | gaaaggtcct  | 7020 |
| aaactggcga  | cctatggcca  | ttttttcttg  | ggtgatgcag  | tagaaggtaa  | gcgggtcttg  | 7080 |
| ttcccagcgg  | tcccatccaa  | ggttcgcggc  | taggtctcgc  | gcggcagtc   | ctagaggctc  | 7140 |
| atctccgccg  | aacttcatga  | ccagcatgaa  | gggcacgagc  | tgcttcccaa  | agggcccat   | 7200 |
| ccaagtatag  | gtctctacat  | cgtaggtgac  | aaagagacgc  | tcggtgcgag  | gatgcgagcc  | 7260 |
| gatcgggaag  | aactggatct  | cccgccacca  | attggaggag  | tggctattga  | tgtgggtgaaa | 7320 |
| gtagaagtcc  | ctgcgacggg  | ccgaacactc  | gtgctggctt  | ttgtaaaaac  | gtgcgcagta  | 7380 |
| ctggcagcgg  | tgcacgggct  | gtacatcctg  | cacgaggttg  | acctgacgac  | cgcgcacaa   | 7440 |
| gaagcagagt  | gggaatttga  | gcccctcgcc  | tggcgggttt  | ggctgggtgg  | cttctacttc  | 7500 |
| ggctgcttgt  | ccttgaccgt  | ctggctgctc  | gaggggagtt  | acggtggatc  | ggaccaccac  | 7560 |
| gccgcgcgag  | cccaaagtcc  | agatgtccgc  | gcgcggcggt  | cggagcttga  | tgacaacatc  | 7620 |
| gcgcagatgg  | gagctgtcca  | tggctctggag | ctccgcggc   | gtcagggtcag | gcgggagctc  | 7680 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| ctgcaggttt  | acctcgcata  | gacgggtcag  | ggcgcgggct  | agatccaggt  | gataccta    | 7740 |
| ttccaggggc  | tggttggtgg  | cggcgctgat  | ggcttgcaag  | aggccgcata  | cccgcggcgc  | 7800 |
| gactacggta  | ccgcgcggcg  | ggcgggtggc  | cgcgggggtg  | tccttggtatg | atgcatctaa  | 7860 |
| aagcggtgac  | gcgggcgagc  | ccccggaggt  | agggggggct  | ccggacccgc  | cgggagaggg  | 7920 |
| ggcaggggca  | cgtcggcgcc  | gcgcgcgggc  | aggagctggg  | gctgcgcgcg  | taggttgctg  | 7980 |
| gcgaacgcga  | cgacgcggcg  | gttgatctcc  | tgaatctggc  | gcctctgcgt  | gaagacgacg  | 8040 |
| ggcccgggtga | gcttgaacct  | gaaagagagt  | tcgacagaat  | caatttcggg  | gtcgttgacg  | 8100 |
| gcggcctggc  | gaaaaatctc  | ctgcacgtct  | cctgagttgt  | cttgataggc  | gatctcggcc  | 8160 |
| atgaactgct  | cgatctcttc  | ctcctggaga  | tctccgcgtc  | cggctcgctc  | cacgggtggcg | 8220 |
| gcgaggtcgt  | tggaatgctg  | ggccatgagc  | tgcgagaagg  | cggtgaggcc  | tccctcgctc  | 8280 |
| cagacgcggc  | tgtagaccac  | gcccccttcg  | gcatcgcggg  | cgcgcatagc  | cacctgcgcg  | 8340 |
| agattgagct  | ccacgtgccg  | ggcgaagacg  | gcgtagtttc  | gcaggcgctg  | aaagaggtag  | 8400 |
| ttgaggggtg  | tggcgggtgtg | ttctgccacg  | aagaagtaca  | taaccagcg   | tcgcaacgtg  | 8460 |
| gattcggtga  | tatcccccaa  | ggcctcaagg  | cgctccatgg  | cctcgtagaa  | gtccacggcg  | 8520 |
| aagttgaaaa  | actgggagtt  | gcgcgccgac  | acggttaact  | cctcctccag  | aagacggatg  | 8580 |
| agctcggcga  | cagtgtcgcg  | cacctcgcgc  | tcaaaggcta  | caggggcctc  | ttcttcttct  | 8640 |
| tcaatctcct  | cttcataaag  | ggcctcccct  | tcttcttctt  | ctggcgggcg  | tgggggaggg  | 8700 |
| gggacacggc  | ggcgacgacg  | gcgcaccggg  | aggcggtcga  | caaagcgctc  | gatcatctcc  | 8760 |
| ccgcggcgac  | ggcgcatggg  | ctcgggtgacg | gcgcggccgt  | tctcgcgggg  | gcgcagttgg  | 8820 |
| aagacgccgc  | ccgtcatgtc  | ccggttatgg  | gttggcgggg  | ggctgccatg  | cggcagggat  | 8880 |
| acggcgctaa  | cgatgcatct  | caacaattgt  | tgtgtaggta  | ctccgccgcc  | gagggacctg  | 8940 |
| agcgagtccg  | catcgaccgg  | atcggaatac  | ctctcgagaa  | aggcgtctaa  | ccagtcacag  | 9000 |
| tcgcaaggta  | ggctgagcac  | cgtggcgggc  | ggcagcgggc  | ggcggtcggg  | gttgtttctg  | 9060 |
| gcggaggtgc  | tgctgatgat  | gtaattaaag  | taggcgggtct | tgagacggcg  | gatggtcgac  | 9120 |
| agaagcacca  | tgtccttggg  | tccggcctgc  | tgaatgcgca  | ggcggtcggc  | catgccccag  | 9180 |
| gcttcgtttt  | gacatcggcg  | cagggtctttg | tagtagtctt  | gcatgagcct  | ttctaccggc  | 9240 |
| acttcttctt  | ctccttcctc  | ttgtcctgca  | tctcttgcat  | ctatcgctgc  | ggcggcgggc  | 9300 |
| gagtttggtc  | gtaggtggcg  | ccctcttcct  | cccatgcgtg  | tgaccccgaa  | gccccctatc  | 9360 |
| ggctgaagca  | gggctaggtc  | ggcgacaacg  | cgctcggcta  | atatggcctg  | ctgcacctgc  | 9420 |
| gtgagggtag  | actggaagtc  | atccatgtcc  | acaaagcggg  | ggtagtcgcc  | cgtgttgatg  | 9480 |
| gtgtaagtgc  | agttggccat  | aacggaccag  | ttaacgggtct | ggtagaccgg  | ctgcgagagc  | 9540 |
| tcggtgtacc  | tgagacgcga  | gtaagccctc  | gagtcaaata  | cgtagtcgtt  | gcaagtccgc  | 9600 |
| accaggtact  | ggtatcccac  | caaaaagtgc  | ggcggcgggc  | ggcggtagag  | gggccagcgt  | 9660 |
| aggggtggccg | gggctccggg  | ggcgagatct  | tccaacataa  | ggcgatgata  | tccgtagatg  | 9720 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |            |             |       |
|------------|------------|-------------|------------|------------|-------------|-------|
| tacctggaca | tccaggtgat | gccggcgggcg | gtggtggagg | cgcgcgga   | gtcgcggacg  | 9780  |
| cggttccaga | tggtgcgcag | cggcaaaaag  | tgctccatgg | tcgggacgct | ctggccggtc  | 9840  |
| aggcgcgcg  | aatcggtgac | gctctagacc  | gtgcaaaagg | agagcctgta | agcggggcact | 9900  |
| cttccgtggt | ctggtggata | aattcgcaag  | ggtatcatgg | cggacgaccg | gggttcgagc  | 9960  |
| cccgtatccg | gccgtccgcc | gtgatccatg  | cggttaccgc | ccgcgtgtcg | aaccaggtg   | 10020 |
| tgcgacgtca | gacaacgggg | gagtgtcctt  | tttggcttcc | ttccaggcgc | ggcggctgct  | 10080 |
| gcgctagctt | ttttggccac | tggccgcgcg  | cagcgtaagc | ggttaggctg | gaaagcgaaa  | 10140 |
| gcattaagtg | gctcgctccc | tgtagccgga  | gggttatttt | ccaagggttg | agtcgcggga  | 10200 |
| cccccggttc | gagtctcgga | ccggccggac  | tgcggcgaac | gggggtttgc | ctccccgtca  | 10260 |
| tgcaagacct | cgcttgcaaa | ttcctccgga  | aacagggacg | agcccccttt | ttgcttttcc  | 10320 |
| cagatgcatc | cggtgctgcg | gcagatgcgc  | ccccctctc  | agcagcggca | agagcaagag  | 10380 |
| cagcggcaga | catgcagggc | accctcccct  | cctcctaccg | cgtcaggagg | ggcgacatcc  | 10440 |
| gcggttgacg | cggcagcaga | tggtgattac  | gaacccccgc | ggcgccgggc | ccggcactac  | 10500 |
| ctggacttgg | aggagggcga | gggcctggcg  | cggctaggag | cgcctctctc | tgagcggcac  | 10560 |
| ccaaggggtg | agctgaagcg | tgatacgcg   | gaggcgtagc | tgccgcggca | gaacctgttt  | 10620 |
| cgcgaccgcg | agggagagga | gcccgaggag  | atgcgggatc | gaaagtcca  | cgcagggcgc  | 10680 |
| gagctgcggc | atggcctgaa | tcgcgagcgg  | ttgctgcgcg | aggaggactt | tgagcccgcg  | 10740 |
| gcgcgaaccg | ggattagtcc | cgcgcgcgca  | cacgtggcgg | ccgccgacct | ggtaaccgca  | 10800 |
| tacgagcaga | cggtgaacca | ggagattaac  | tttcaaaaaa | gctttaacaa | ccacgtgcgt  | 10860 |
| acgcttggtg | cgcgcgagga | ggtggctata  | ggactgatgc | atctgtggga | ctttgtaagc  | 10920 |
| gcgctggagc | aaaacccaaa | tagcaagccg  | ctcatggcgc | agctgttcct | tatagtgcag  | 10980 |
| cacagcaggg | acaacgaggc | attcagggat  | gcgctgctaa | acatagtaga | gcccgagggc  | 11040 |
| cgctggctgc | tcgatttgat | aaacatcctg  | cagagcatag | tggtgcagga | gcgcagcttg  | 11100 |
| agcctggctg | acaaggtggc | cgccatcaac  | tattccatgc | ttagcctggg | caagttttac  | 11160 |
| gcccgaaga  | tataccatac | cccttacgtt  | cccatagaca | aggaggtaaa | gatcgagggg  | 11220 |
| ttctacatgc | gcatggcgct | gaagggtgct  | accttgagcg | acgacctggg | cgtttatcgc  | 11280 |
| aacgagcgca | tccacaaggc | cgtgagcggt  | agccggcggc | gcgagctcag | cgaccgcgag  | 11340 |
| ctgatgcaca | gcctgcaaag | ggccctggct  | ggcacgggca | gcggcgatag | agaggccgag  | 11400 |
| tcctactttg | acgcggggcg | tgacctgcgc  | tgggccccaa | gccgacgcgc | cctggaggca  | 11460 |
| gctggggccg | gacctgggct | ggcgggtggc  | cccgcgcgcg | ctggcaacgt | cggcggcggt  | 11520 |
| gaggaatatg | acgaggacga | tgagtacgag  | ccagaggacg | gcgagtacta | agcgggtgatg | 11580 |
| tttctgatca | gatgatgcaa | gacgcaacgg  | acccggcggt | gcggggcggc | ctgcagagcc  | 11640 |
| agccgtccgg | ccttaactcc | acggacgact  | ggcgccaggt | catggaccgc | atcatgtcgc  | 11700 |
| tgactgcgcg | caatcctgac | gcgttccggc  | agcagccgca | ggccaaccgg | ctctccgcaa  | 11760 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |            |             |            |       |
|------------|------------|------------|------------|-------------|------------|-------|
| ttctggaagc | ggtggtcccc | gcgcgcgcaa | acccacgca  | cgagaaggtg  | ctggcgatcg | 11820 |
| taaacgcgct | ggccgaaaac | agggccatcc | ggcccgacga | ggccggcctg  | gtctacgacg | 11880 |
| cgctgcttca | gcgcgtggct | cgttacaaca | gcggcaacgt | gcagaccaac  | ctggaccggc | 11940 |
| tgggtgggga | tgtgcgcgag | gccgtggcgc | agcgtgagcg | cgcgcgagcag | cagggcaacc | 12000 |
| tgggctccat | ggttgacta  | aacgccttcc | tgagtacaca | gcccgcacaac | gtgccgcggg | 12060 |
| gacaggagga | ctacaccaac | tttgtgagcg | cactgcggt  | aatggtgact  | gagacaccgc | 12120 |
| aaagtgaggt | gtaccagtct | gggccagact | atTTTTtcca | gaccagtaga  | caaggcctgc | 12180 |
| agaccgtaaa | cctgagccag | gctttcaaaa | acttgcaggg | gctgtggggg  | gtgcgggctc | 12240 |
| ccacaggcga | ccgcgcgacc | gtgtctagct | tgctgacgcc | caactcgcg   | ctgttgctgc | 12300 |
| tgctaatagc | gcccttcacg | gacagtggca | gcgtgtccc  | ggacacatac  | ctaggtcact | 12360 |
| tgctgacact | gtaccgcgag | gccataggtc | aggcgcatgt | ggacgagcat  | actttccagg | 12420 |
| agattacaag | tgtcagccgc | gcgctggggc | aggaggacac | gggcagcctg  | gaggcaaccc | 12480 |
| taaactacct | gctgaccaac | cggcggcaga | agatcccctc | gttgcacagt  | ttaaacagcg | 12540 |
| aggaggagcg | cattttgcgc | tacgtgcagc | agagcgtgag | ccttaacctg  | atgcgcgacg | 12600 |
| gggtaacgcc | cagcgtggcg | ctggacatga | ccgcgcgcaa | catggaaccg  | ggcatgtatg | 12660 |
| cctcaaaccg | gccgtttatc | aaccgcctaa | tggactactt | gcatcgcgcg  | gccgccgtga | 12720 |
| accccgagta | tttcaccaat | gccatcttga | acccgcactg | gctaccgccc  | cctggtttct | 12780 |
| acaccggggg | attcgaggtg | cccgagggta | acgatggatt | cctctgggac  | gacatagacg | 12840 |
| acagcgtgtt | ttccccgcaa | ccgcagaccc | tgctagagtt | gcaacagcgc  | gagcaggcag | 12900 |
| aggcggcgct | gcgaaaggaa | agcttccgca | ggccaagcag | cttgtccgat  | ctaggcgctg | 12960 |
| cggccccgcg | gtcagatgct | agtagcccat | ttccaagctt | gatagggtct  | cttaccagca | 13020 |
| ctcgcaccac | ccgcccgcgc | ctgctggggc | aggaggagta | cctaaacaac  | tcgctgctgc | 13080 |
| agccgcagcg | cgaaaaaac  | ctgcctccgg | catttcccaa | caacgggata  | gagagcctag | 13140 |
| tggacaagat | gagtagatgg | aagacgtacg | cgcaggagca | cagggacgtg  | ccaggccccg | 13200 |
| gcccgcccac | ccgtcgtcaa | aggcacgacc | gtcagcgggg | tctggtgtgg  | gaggacgatg | 13260 |
| actcggcaga | cgacagcagc | gtcctggatt | tgggaggag  | tggcaaccg   | tttgcgcacc | 13320 |
| ttcgccccag | gctggggaga | atgttttaaa | aaaaaaaaaa | gcatgatgca  | aaataaaaaa | 13380 |
| ctcaccaagg | ccatggcacc | gagcgttggt | tttcttgat  | tccccttagt  | atgcggcgcg | 13440 |
| cggcgatgta | tgaggaaggt | cctcctccct | cctacgagag | tgtggtgagc  | gcggcgccag | 13500 |
| tggcggcggc | gctgggttct | cccttcgatg | ctcccctgga | cccgcggtt   | gtgcctccgc | 13560 |
| ggtacctgcg | gcctaccggg | gggagaaaca | gcatccgtta | ctctgagttg  | gcacccttat | 13620 |
| tcgacaccac | ccgtgtgtac | ctggtggaca | acaagtcaac | ggatgtggca  | tccctgaact | 13680 |
| accagaacga | ccacagcaac | tttctgacca | cggtcattca | aaacaatgac  | tacagccccg | 13740 |
| gggaggcaag | cacacagacc | atcaatcttg | acgaccggtc | gactggggc   | ggcgacctga | 13800 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |             |            |             |            |       |
|-------------|------------|-------------|------------|-------------|------------|-------|
| aaaccatcct  | gcataccaac | atgccaaatg  | tgaacgagtt | catgtttacc  | aataagttta | 13860 |
| aggcgcggggt | gatggtgtcg | cgcttgcccta | ctaaggacaa | tcagggtggag | ctgaaatacg | 13920 |
| agtgggtgga  | gttcacgctg | cccgaagggca | actactccga | gaccatgacc  | atagacctta | 13980 |
| tgaacaacgc  | gatcgtggag | cactacttga  | aagtgggcag | acagaacggg  | gttctggaaa | 14040 |
| gcgacatcgg  | ggtaaagttt | gacacccgca  | acttcagact | ggggtttgac  | cccgtcactg | 14100 |
| gtcttgtcat  | gcctggggta | tatacaaacg  | aagccttcca | tccagacatc  | attttgctgc | 14160 |
| caggatgcgg  | ggtggacttc | acccacagcc  | gcctgagcaa | cttgttgggc  | atccgcaagc | 14220 |
| ggcaaccctt  | ccaggagggc | tttaggatca  | cctacgatga | tctggagggt  | ggtaacattc | 14280 |
| ccgcactgtt  | ggatgtggac | gcctaccagg  | cgagcttgaa | agatgacacc  | gaacagggcg | 14340 |
| ggggtggcgc  | aggcggcagc | aacagcagtg  | gcagcggcgc | ggaagagaac  | tccaacgcgg | 14400 |
| cagccgcggc  | aatgcagccg | gtggaggaca  | tgaacgatca | tgccattcgc  | ggcgacacct | 14460 |
| ttgccacacg  | ggctgaggag | aagcgcgctg  | aggccgaagc | agcggccgaa  | gctgccgccc | 14520 |
| ccgctgcgca  | acccgaggtc | gagaagcctc  | agaagaaacc | ggtgatcaaa  | cccctgacag | 14580 |
| aggacagcaa  | gaaacgcagt | tacaacctaa  | taagcaatga | cagcaccttc  | acccagtacc | 14640 |
| gcagctggta  | ccttgcatat | aactacggcg  | accctcagac | cggaatccgc  | tcatggaccc | 14700 |
| tgctttgcac  | tcctgacgta | acctgcggct  | cggagcaggt | ctactggtcg  | ttgccagaca | 14760 |
| tgatgcaaga  | ccccgtgacc | ttccgctcca  | cgcgccagat | cagcaacttt  | ccggtggtgg | 14820 |
| gcgccgagct  | gttgcccgtg | cactccaaga  | gcttctacaa | cgaccaggcc  | gtctactccc | 14880 |
| aactcatccg  | ccagtttacc | tctctgaccc  | acgtgttcaa | tcgctttccc  | gagaaccaga | 14940 |
| ttttggcgcg  | cccgccagcc | cccaccatca  | ccaccgtcag | tgaaaacgtt  | cctgctctca | 15000 |
| cagatcacgg  | gacgctaccg | ctgcgcaaca  | gcatcgaggg | agtccagcga  | gtgaccatta | 15060 |
| ctgacgccag  | acgccgcacc | tgccccctacg | tttacaaggc | cctgggcata  | gtctcgccgc | 15120 |
| gcgtcctatc  | gagccgcact | ttttgagcaa  | gcatgtccat | ccttatatcg  | cccagcaata | 15180 |
| acacaggctg  | gggcctgcgc | ttcccaagca  | agatgtttgg | cggggccaaag | aagcgtcccg | 15240 |
| accaacaccc  | agtgcgcgtg | cgcgggcact  | accgcgcgcc | ctggggcgcg  | cacaaacgcg | 15300 |
| gccgcactgg  | gcgcaccacc | gtcgatgacg  | ccatcgacgc | ggtggtggag  | gaggcgcgca | 15360 |
| actacacgcc  | cacgccgcca | ccagtgtcca  | cagtggacgc | ggccattcag  | accgtggtgc | 15420 |
| gcggagcccc  | gcgctatgct | aaaatgaaga  | gacggcgagg | gcgcgtagca  | cgtcgccacc | 15480 |
| gccgccgacc  | cggcactgcc | gccccacgcg  | cggcggcggc | cctgcttaac  | cgcgcacgtc | 15540 |
| gcaccggccg  | acgggcggcc | atgcgggccg  | ctcgaaggct | ggccgcgggt  | attgtcactg | 15600 |
| tgccccccag  | gtccaggcga | cgagcggccg  | ccgcagcagc | cgcgggccatt | agtgttatga | 15660 |
| ctcagggtcg  | caggggcaac | gtgtattggg  | tgcgcgactc | ggttagcggc  | ctgcgcgtgc | 15720 |
| ccgtgcgcac  | ccgccccccg | cgcaactaga  | ttgcaagaaa | aaactactta  | gactcgtact | 15780 |
| gttgtatgta  | tccagcggcg | gcggcgcgca  | acgaagctat | gtccaagcgc  | aaaatcaaag | 15840 |

# 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |            |             |       |
|------------|------------|-------------|------------|------------|-------------|-------|
| aagagatgct | ccaggtcatc | gcgccggaga  | tctatggccc | cccgaagaag | gaagagcagg  | 15900 |
| attacaagcc | ccgaaagcta | aagcgggtca  | aaaagaaaaa | gaaagatgat | gatgatgaac  | 15960 |
| ttgacgacga | ggtggaactg | ctgcacgcta  | ccgcgcccag | gcgacgggta | cagtggaaaag | 16020 |
| gtcgacgcgt | aaaacgtggt | ttgcgaccgc  | gcaccaccgt | agtctttacg | cccggtgagc  | 16080 |
| gctccacccg | cacctacaag | cgcggtgatg  | atgaggtgta | cggcgacgag | gacctgcttg  | 16140 |
| agcaggccaa | cgagcgcctc | ggggagtttg  | cctacggaaa | gcggcataag | gacatgctgg  | 16200 |
| cgttgccgct | ggacgagggc | aacccaacac  | ctagcctaaa | gcccgtatac | ctgcagcagg  | 16260 |
| tgctgcccgc | gcttgaccgc | tccgaagaaa  | agcgcggcct | aaagcgcgag | tctggtgact  | 16320 |
| tggcaccac  | cgtgcagctg | atggtaccca  | agcgccagcg | actggaagat | gtcttgaaaa  | 16380 |
| aaatgaccgt | ggaacctggg | ctggagcccc  | aggtccgcgt | gcggccaatc | aagcagggtg  | 16440 |
| cgccgggact | gggcgtgcag | accgtggacg  | ttcagatacc | cactaccagt | agcaccagta  | 16500 |
| ttgccaccgc | cacagagggc | atggagacac  | aaacgtcccc | ggttgccctc | gcggtggcgg  | 16560 |
| atgccgcggt | gcaggcggtc | gctgcggccg  | cgtccaagac | ctctacggag | gtgcaaacgg  | 16620 |
| accctgggat | gtttcgcgtt | tcagcccccc  | ggcgcccgcg | ccgttcgagg | aagtacggcg  | 16680 |
| ccgccagcgc | gctactgccc | gaatatgccc  | tacatccttc | cattgcgctt | acccccggct  | 16740 |
| atcgtggcta | cacctaccgc | cccagaagac  | gagcaactac | ccgacgccga | accaccactg  | 16800 |
| gaacccgccc | ccgccgtcgc | cgtcgccagc  | ccgtgctggc | cccgatttcc | gtgcgcaggg  | 16860 |
| tggctcgcga | aggaggcagg | accctgggtg  | tgccaacagc | gcgctaccac | cccagcatcg  | 16920 |
| tttaaaagcc | ggtctttgtg | gttcttgtag  | atatggccct | cacctgccgc | ctccgtttcc  | 16980 |
| cggtgcccgg | attccgagga | agaatgcacc  | gtaggagggg | catggccggc | cacggcctga  | 17040 |
| cgggcggcat | gcgtcgtgcg | caccaccggc  | ggcggcgcg  | gtcgcaccgt | cgcgtgcgcg  | 17100 |
| gcggtatcct | gcccctcctt | attccactga  | tcgccgcggc | gattggcgcc | gtgcccggaa  | 17160 |
| ttgcatccgt | ggccttgtag | gcgcagagac  | actgattaaa | aacaagttgc | atgtggaaaa  | 17220 |
| atcaaaataa | aaagtctgga | ctctcacgct  | cgcttggtcc | tgtaactatt | ttgtagaatg  | 17280 |
| gaagacatca | actttgcgtc | tctggccccg  | cgacacggct | cgcgcccgtt | catgggaaac  | 17340 |
| tggcaagata | tcggcaccag | caatatgagc  | ggtggcgcct | tcagctgggg | ctcgctgtgg  | 17400 |
| agcggcatta | aaaatttcgg | ttccaccgtt  | aagaactatg | gcagcaaggc | ctggaacagc  | 17460 |
| agcacaggcc | agatgctgag | ggataagttg  | aaagagcaaa | atttccaaca | aaaggtggta  | 17520 |
| gatggcctgg | cctctggcat | tagcgggggtg | gtggacctgg | ccaaccaggc | agtgcaaaat  | 17580 |
| aagattaaca | gtaagcttga | tccccgccct  | cccgtagagg | agcctccacc | ggccgtggag  | 17640 |
| acagtgtctc | cagagggggc | tggcgaaaag  | cgtccgcgcc | ccgacaggga | agaaactctg  | 17700 |
| gtgacgcaaa | tagacgagcc | tccctcgtac  | gaggaggcac | taaagcaagg | cctgcccacc  | 17760 |
| accctccca  | tcgcgcccac | ggctaccgga  | gtgctggggc | agcacacacc | cgtaacgctg  | 17820 |
| gacctgcctc | ccccgcgcga | caccagcag   | aaacctgtgc | tgccaggccc | gaccgccgtt  | 17880 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |             |             |             |             |       |
|-------------|------------|-------------|-------------|-------------|-------------|-------|
| gttgtaaccc  | gtcctagccg | cgcgccctg   | cgccgcgccg  | ccagcgggcc  | gcgatcggtg  | 17940 |
| cggcccgtag  | ccagtggcaa | ctggcaaacg  | acactgaaca  | gcatcggtgg  | tctgggggtg  | 18000 |
| caatccctga  | agcgccgacg | atgcttctga  | tagctaactg  | gtcgtatgtg  | tgtcatgtat  | 18060 |
| gcgtccatgt  | cgccgccaga | ggagctgctg  | agccgccgcg  | cgcccgtttt  | ccaagatggc  | 18120 |
| tacccttctg  | atgatgccgc | agtggcttta  | catgcacatc  | tcggggccagg | acgcctcgga  | 18180 |
| gtacctgagc  | cccgggctgg | tgcagtttgc  | ccgcgccacc  | gagacgtact  | tcagcctgaa  | 18240 |
| taacaagttt  | agaaacccca | cgggtggcgcc | tacgcacgac  | gtgaccacag  | accgggtcca  | 18300 |
| gcgttttgacg | ctgcggttca | tccctgtgga  | ccgtgaggat  | actgcgtact  | cgtacaaggc  | 18360 |
| gcggttcacc  | ctagctgtgg | gtgataaccg  | tgtgctggac  | atggcttcca  | cgtactttga  | 18420 |
| catccgcggc  | gtgctggaca | ggggccctac  | ttttaagccc  | tactctggca  | ctgcctacaa  | 18480 |
| cgccctggct  | cccaagggtg | ccccaaatcc  | ttgcgaatgg  | gatgaagctg  | ctactgctct  | 18540 |
| tgaataaac   | ctagaagaag | aggacgatga  | caacgaagac  | gaagtagacg  | agcaagctga  | 18600 |
| gcagcaaaaa  | actcacgtat | ttgggcaggc  | gccttattct  | ggtataaata  | ttacaaagga  | 18660 |
| gggtattcaa  | ataggtgtcg | aagggtcaa   | acctaataat  | gccgataaaa  | catttcaacc  | 18720 |
| tgaacctcaa  | ataggagaat | ctcagtggtg  | cgaaacagaa  | attaatcatg  | cagctgggag  | 18780 |
| agtcctaaaa  | aagactaccc | caatgaaacc  | atgttacggg  | tcatatgcaa  | aaccacaaaa  | 18840 |
| tgaatgga    | gggcaaggca | ttcttgtaaa  | gcaacaaaat  | ggaaagctag  | aaagtcaagt  | 18900 |
| ggaaatgcaa  | tttttctcaa | ctactgaggc  | agccgcaggc  | aatggtgata  | acttgactcc  | 18960 |
| taaagtggta  | ttgtacagtg | aagatgtaga  | tatagaaacc  | ccagacactc  | atatttctta  | 19020 |
| catgcccact  | attaaggaag | gtaactcacg  | agaactaatg  | ggccaacaat  | ctatgccccaa | 19080 |
| caggccta    | tacattgctt | ttagggacaa  | ttttattggt  | ctaattgtatt | acaacagcac  | 19140 |
| gggtaatatg  | ggtgttctgg | cggggccaagc | atcgtagttg  | aatgctgttg  | tagatttgca  | 19200 |
| agacagaaac  | acagagcttt | cataccagct  | tttgcttgat  | tccattgggtg | atagaaccag  | 19260 |
| gtacttttct  | atgtggaatc | aggctgttga  | cagctatgat  | ccagatgtta  | gaattattga  | 19320 |
| aatcatgga   | actgaagatg | aacttccaaa  | ttactgcttt  | ccactgggag  | gtgtgattaa  | 19380 |
| tacagagact  | cttaccaagg | taaaacctaa  | aacagggtcag | gaaaatggat  | gggaaaaaga  | 19440 |
| tgctacagaa  | ttttcagata | aaaatgaaat  | aagagttgga  | aataattttg  | ccatggaaat  | 19500 |
| caatctaaat  | gccaacctgt | ggagaaaattt | cctgtactcc  | aacatagcgc  | tgtatttgcc  | 19560 |
| cgacaagcta  | aagtacagtc | cttccaacgt  | aaaaatttct  | gataacccaa  | acacctacga  | 19620 |
| ctacatgaac  | aagcgagtgg | tggctcccgg  | gctagtggac  | tgctacatta  | accttgagc   | 19680 |
| acgctgggtcc | cttgactata | tggacaacgt  | caaccattt   | aaccaccacc  | gcaatgctgg  | 19740 |
| cctgcgctac  | cgctcaatgt | tgctgggcaa  | tggtcgctat  | gtgcccttcc  | acatccaggt  | 19800 |
| gcctcagaag  | ttctttgcca | ttaaaaacct  | ccttctcctg  | ccgggctcat  | acacctacga  | 19860 |
| gtggaacttc  | aggaaggatg | ttaacatggg  | tctgcagagc  | tccctaggaa  | atgacctaa   | 19920 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |            |             |            |            |       |
|-------------|------------|------------|-------------|------------|------------|-------|
| ggttgacgga  | gccagcatta | agtttgatag | catttgcctt  | tacgccacct | tcttccccat | 19980 |
| ggccccacaac | accgcctcca | cgcttgaggc | catgcttaga  | aacgacacca | acgaccagtc | 20040 |
| ctttaacgac  | tatctctccg | ccgccaacat | gctctaccct  | atacccgcca | acgctaccaa | 20100 |
| cgtgcccata  | tccatcccct | cccgcaactg | ggcggctttc  | cgcggtggg  | ccttcacgcg | 20160 |
| ccttaagact  | aaggaaaccc | catcactggg | ctcgggctac  | gacccttatt | acacctactc | 20220 |
| tggctctata  | ccctacctag | atggaacctt | ttacctcaac  | cacaccttta | agaaggtggc | 20280 |
| cattaccttt  | gactcttctg | tcagctggcc | tggcaatgac  | cgcttgctta | cccccaacga | 20340 |
| gtttgaaatt  | aagcgctcag | ttgacgggga | gggttacaac  | gttgcccagt | gtaacatgac | 20400 |
| caaagactgg  | ttcctggtag | aaatgctagc | taactataac  | attggctacc | agggcttcta | 20460 |
| tatcccagag  | agctacaagg | accgcatgta | ctccttcttt  | agaaacttcc | agcccatgag | 20520 |
| ccgtcaggtg  | gtggatgata | ctaaatacaa | ggactaccaa  | caggtgggca | tcctacacca | 20580 |
| acacaacaac  | tctggatttg | ttggctacct | tgccccacc   | atgcgcgaag | gacaggccta | 20640 |
| ccctgctaac  | ttcccctatc | cgcttatagg | caagaccgca  | gttgacagca | ttaccagaa  | 20700 |
| aaagtttctt  | tgcgatcgca | ccctttggcg | catcccattc  | tccagtaact | ttatgtccat | 20760 |
| ggg'gcactc  | acagacctgg | gccaaaacct | tctctacgcc  | aactccgccc | acgcgctaga | 20820 |
| catgactttt  | gaggtggatc | ccatggacga | gccaccctt   | ctttatgttt | tgtttgaagt | 20880 |
| ctttgacgtg  | gtccgtgtgc | accagccgca | ccgcggcgtc  | atcgaaaccg | tgtacctgcg | 20940 |
| cacgcccttc  | tcggccggca | acgccacaac | ataaagaagc  | aagcaacatc | aacaacagct | 21000 |
| gccgccatgg  | gctccagtga | gcaggaactg | aaagccattg  | tcaaagatct | tggttgtggg | 21060 |
| ccatattttt  | tgggcaccta | tgacaagcgc | tttcagggt   | ttgtttctcc | acacaagctc | 21120 |
| gcctgcgcca  | tagtcaatac | ggccggtcgc | gagactgggg  | gcgtacactg | gatggccttt | 21180 |
| gcctggaacc  | cgcactcaaa | aacatgctac | ctctttgagc  | cctttggctt | ttctgaccag | 21240 |
| cgactcaagc  | aggtttacca | gtttgagtac | gagtcactcc  | tgcgccgtag | cgccattgct | 21300 |
| tcttcccccg  | accgctgtat | aacgctggaa | aagtccaccc  | aaagcgtaca | ggggcccaac | 21360 |
| tcggccgcct  | gtggactatt | ctgctgcatg | tttctccacg  | cctttgcaa  | ctggcccaa  | 21420 |
| actcccatgg  | atcacaaccc | caccatgaac | cttattaccg  | gggtaccaa  | ctccatgctc | 21480 |
| aacagtcccc  | aggtacagcc | caccctgcgt | cgcaaccagg  | aacagctcta | cagcttcctg | 21540 |
| gagcgccact  | cgccctactt | ccgcagccac | agtgcgcaga  | ttaggagcgc | cacttctttt | 21600 |
| tgtcacttga  | aaaacatgta | aaaataatgt | actagagaca  | ctttcaataa | aggcaaatgc | 21660 |
| ttttatttgt  | acactctcgg | gtgattattt | acccccaccc  | ttgccgtctg | cgccgtttaa | 21720 |
| aatcaaaagg  | ggttctgccg | cgcatcgcta | tgcgccactg  | gcagggacac | gttgcgatac | 21780 |
| tgggtgttag  | tgctccactt | aaactcaggc | acaaccatcc  | gcggcagctc | ggtgaagttt | 21840 |
| tcactccaca  | ggctgcgcac | catcaccaac | gcgttttagca | ggtcgggcgc | cgatatcttg | 21900 |
| aagtcgcagt  | tggggcctcc | gccctgcgcg | cgcgagttgc  | gatacacagg | gttgcagcac | 21960 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |             |             |       |
|------------|------------|-------------|------------|-------------|-------------|-------|
| tggaacta   | tcagcgccg  | gtggtgcacg  | ctggccagca | cgctcttgtc  | ggagatcaga  | 22020 |
| tccgcgtcca | ggctctccgc | gttgctcagg  | gcgaacggag | tcaactttgg  | tagctgcctt  | 22080 |
| cccaaaaagg | gcgcgtgccc | aggctttgag  | ttgcactcgc | accgtagtgg  | catcaaaaagg | 22140 |
| tgaccgtgcc | cggtctgggc | gttaggatac  | agcgcctgca | taaaagcctt  | gatctgctta  | 22200 |
| aaagccacct | gagcctttgc | gccttcagag  | aagaacatgc | cgcaagactt  | gccggaaaac  | 22260 |
| tgattggccg | gacaggccgc | gtcgtgcacg  | cagcaccttg | cgtcggtggt  | ggagatctgc  | 22320 |
| accacatttc | ggccccaccg | gttcttcacg  | atcttggcct | tgctagactg  | ctccttcagc  | 22380 |
| gcgcgctgcc | cgttttcgct | cgtcacatcc  | atttcaatca | cgtgctcctt  | atttatcata  | 22440 |
| atgcttccgt | gtagacactt | aagctcgcct  | tcgatctcag | cgcagcgggtg | cagccacaac  | 22500 |
| gcgcagcccc | tgggctcgtg | atgcttgtag  | gtcacctctg | caaacgactg  | caggtacgcc  | 22560 |
| tgcaggaatc | gccccatcat | cgtcacaaaag | gtcttggtgc | tgggtgaagg  | cagctgcaac  | 22620 |
| ccgcggtgct | cctcgttcag | ccaggctctg  | catacggccg | ccagagcttc  | cacttggtca  | 22680 |
| ggcagtagtt | tgaagtctgc | ctttagatcg  | ttatccacgt | ggtacttgtc  | catcagcgcg  | 22740 |
| cgcgcagcct | ccatgccctt | ctccacgca   | gacacgatcg | gcacactcag  | cgggttcac   | 22800 |
| accgtaattt | cactttccgc | ttcgctgggc  | tcttcctctt | cctcttgctg  | ccgcatacca  | 22860 |
| cgcgccactg | ggcgtcttcc | attcagccgc  | cgactgtgc  | gcttacctcc  | tttgccatgc  | 22920 |
| ttgattagca | ccggtggggt | gctgaaaccc  | accatttgta | gcgccacatc  | ttctctttct  | 22980 |
| tcctcgctgt | ccacgattac | ctctgggtgat | ggcgggcgct | cgggcttggg  | agaagggcg   | 23040 |
| ttctttttct | tcttgggcg  | aatggccaaa  | tccgccgccg | aggtcgatgg  | ccgcgggctg  | 23100 |
| ggtgtgcg   | gcaccagcg  | gtcttgatg   | gagtcctcct | cgctctcgga  | ctcgatacgc  | 23160 |
| cgctcatcc  | gcttttttgg | gggcgcccgg  | ggaggcggcg | gcgacgggga  | cggggacgac  | 23220 |
| acgtcctcca | tggttggggg | acgtcgcgcc  | gcaccgcgtc | cgcgctcggg  | ggtggtttcg  | 23280 |
| cgctgctcct | cttcccgact | ggccatttcc  | ttctcctata | ggcagaaaaa  | gatcatggag  | 23340 |
| tcagtcgaga | agaaggacag | cctaaccgcc  | ccctctgagt | tcgccaccac  | cgcctccacc  | 23400 |
| gatgccgcca | acgcgcctac | caccttcccc  | gtcgaggcac | ccccgcttga  | ggaggaggaa  | 23460 |
| gtgattatcg | agcaggaccc | aggttttgta  | agcgaagacg | acgaggaccg  | ctcagtacca  | 23520 |
| acagaggata | aaaagcaaga | ccaggacaac  | gcagaggcaa | acgaggaaca  | agtcggg     | 23580 |
| ggggacgaaa | ggcatggcga | ctacctagat  | gtgggagacg | acgtgctggt  | gaagcatctg  | 23640 |
| cagcgccagt | gcgccattat | ctgcgacg    | ttgcaagagc | gcagcgatgt  | gccccctcg   | 23700 |
| atagcggatg | tcagccttgc | ctacgaacgc  | cacctattct | caccgcgct   | acccccaaa   | 23760 |
| cgccaagaaa | acggcacatg | cgagcccaac  | ccgcgcctca | acttctaccc  | cgtatttgcc  | 23820 |
| gtgccagagg | tgcttgccac | ctatcacatc  | tttttccaaa | actgcaagat  | accctatcc   | 23880 |
| tgccgtgcca | accgcagccg | agcggacaag  | cagctggcct | tgcggcagg   | cgctgtcata  | 23940 |
| cctgatatcg | cctcgctcaa | cgaagtgcc   | aaaatctttg | agggctcttg  | acgcgacgag  | 24000 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |            |             |             |             |       |
|-------------|-------------|------------|-------------|-------------|-------------|-------|
| aagcgcgcgg  | caaacgctct  | gcaacaggaa | aacagcgaaa  | atgaaagtca  | ctctggagtg  | 24060 |
| ttggtggaac  | tcgaggggtga | caacgcgcgc | ctagccgtac  | taaaacgcag  | catcgaggtc  | 24120 |
| accactttg   | cctacccggc  | acttaaccta | ccccccaagg  | tcctgagcac  | agtcctgagt  | 24180 |
| gagctgatcg  | tgcgccgtgc  | gcagcccctg | gagaggggatg | caaatttgca  | agaacaaaca  | 24240 |
| gaggagggcc  | tacccgcagt  | tggcgacgag | cagctagcgc  | gctggcttca  | aacgcgcgag  | 24300 |
| cctgccgact  | tggaggagcg  | acgcaaacta | atgatggccg  | cagtgtctgt  | taccgtggag  | 24360 |
| cttgagtgca  | tgcagcggtt  | ctttgctgac | ccggagatgc  | agcgcaagct  | agaggaaaca  | 24420 |
| ttgcactaca  | cctttcgaca  | gggctacgta | cgccaggcct  | gcaagatctc  | caacgtggag  | 24480 |
| ctctgcaacc  | tggctctccta | ccttggaatt | ttgcacgaaa  | accgccttgg  | gaaaaacgtg  | 24540 |
| cttcattcca  | cgctcaaggg  | cgaggcgcg  | cgcgactacg  | tccgcgactg  | cgtttactta  | 24600 |
| tttctatgct  | acacctggca  | gacggccatg | ggcgtttggc  | agcagtgttt  | ggaggagtg   | 24660 |
| aacctcaagg  | agctgcagaa  | actgctaaag | caaaacttga  | aggacctatg  | gacggccttc  | 24720 |
| aacgagcgct  | ccgtggccgc  | gcacctggcg | gacatcattt  | tccccgaacg  | cctgcttaaa  | 24780 |
| accctgcaac  | agggctctgcc | agacttcacc | agtcaaagca  | tgttgagaa   | cttttagaac  | 24840 |
| tttatcctag  | agcgctcagg  | aatcttgccc | gccacctgct  | gtgcacttcc  | tagcgacttt  | 24900 |
| gtgcccatta  | agtaccgcga  | atgccctccg | ccgctttggg  | gccactgcta  | ccttctgcag  | 24960 |
| ctagccaact  | accttgcccta | ccactctgac | ataatggaag  | acgtgagcgg  | tgacggtcta  | 25020 |
| ctggagtgtc  | actgtcgtcg  | caacctatgc | accccgacc   | gctccctggg  | ttgcaattcg  | 25080 |
| cagctgctta  | acgaaagtca  | aattatcggt | acctttgagc  | tgcaggggtcc | ctcgccctgac | 25140 |
| gaaaagtccg  | cggtctccggg | gttgaaactc | actccggggc  | tgtggacgtc  | ggcttacctt  | 25200 |
| cgcaaatttg  | tacctgagga  | ctaccacgcc | cacgagatta  | ggttctacga  | agaccaatcc  | 25260 |
| cgcccgcccta | atgcggagct  | taccgcctgc | gtcattaccc  | agggccacat  | tcttggccaa  | 25320 |
| ttgcaagcca  | tcaacaaagc  | ccgccaagag | tttctgctac  | gaaagggacg  | gggggtttac  | 25380 |
| ttggaccccc  | agtccggcga  | ggagctcaac | ccaatcccc   | cgccgccgca  | gccctatcag  | 25440 |
| cagcagccgc  | gggcccttgc  | ttcccaggat | ggcacccaaa  | aagaagctgc  | agctgccgcc  | 25500 |
| gccaccacg   | gacgaggagg  | aatactggga | cagtcaggca  | gaggagggtt  | tggacgagga  | 25560 |
| ggaggaggac  | atgatggaag  | actgggagag | cctagacgag  | gaagcttccg  | aggtcgaaga  | 25620 |
| ggtgtcagac  | gaaacaccgt  | caccctcggt | cgcttcccc   | tcgccggcgc  | cccagaaatc  | 25680 |
| ggcaaccggt  | tccagcatgg  | ctacaacctc | cgctcctcag  | gcgccgccgg  | cactgcccgt  | 25740 |
| tcgccgaccc  | aaccgtagat  | gggacaccac | tgggaaccagg | gccggtaagt  | ccaagcagcc  | 25800 |
| gccgccgtta  | gccaagagc   | aacaacagcg | ccaaggctac  | cgctcatggc  | gcgggcacaa  | 25860 |
| gaacgccata  | gttgcttgct  | tgcaagactg | tgggggcaac  | atctccttcg  | cccgccgctt  | 25920 |
| tcttctctac  | catcacggcg  | tggccttccc | ccgtaacatc  | ctgcattact  | accgtcatct  | 25980 |
| ctacagccca  | tactgcaccg  | gcggcagcgg | cagcaacagc  | agcggccaca  | cagaagcaaa  | 26040 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |            |       |
|-------------|-------------|-------------|-------------|-------------|------------|-------|
| ggcgaccgga  | tagcaagact  | ctgacaaagc  | ccaagaaatc  | cacagcggcg  | gcagcagcag | 26100 |
| gaggaggagc  | gctgcgtctg  | gcgcccacg   | aacccgtatc  | gacccgcgag  | cttagaaaca | 26160 |
| ggatttttcc  | cactctgtat  | gctatatattc | aacagagcag  | gggccaagaa  | caagagctga | 26220 |
| aaataaaaaa  | caggtctctg  | cgatccctca  | cccgcagctg  | cctgtatcac  | aaaagcgaag | 26280 |
| atcagcttcg  | gcgcacgctg  | gaagacgcgg  | aggctctctt  | cagtaaatac  | tgcgcgctga | 26340 |
| ctcttaagga  | ctagtttcgc  | gccctttctc  | aaatttaagc  | gcgaaaacta  | cgtcatctcc | 26400 |
| agcggccaca  | ccggcgcca   | gcacctgttg  | tcagcgccat  | tatgagcaag  | gaaattccca | 26460 |
| cgccctacat  | gtggagttac  | cagccacaaa  | tgggacttgc  | ggctggagct  | gcccagact  | 26520 |
| actcaacccg  | aataaactac  | atgagcgcgg  | gaccccat    | gatatcccgg  | gtcaacggaa | 26580 |
| tacgcgcca   | ccgaaaccga  | attctcctgg  | aacaggcggc  | tattaccacc  | acacctcgta | 26640 |
| ataaccttaa  | tccccgtagt  | tggcccgtg   | ccctgggtga  | ccaggaaagt  | cccgtccca  | 26700 |
| ccactgtggt  | acttcccaga  | gacgcccagg  | ccgaagttca  | gatgactaac  | tcaggggcg  | 26760 |
| agcttgcg    | cggtttcgt   | cacagggtgc  | ggtcgcccgg  | gcagggtata  | actcacctga | 26820 |
| caatcagagg  | gcgaggtatt  | cagctcaacg  | acgagtcggt  | gagctcctcg  | cttggtctcc | 26880 |
| gtccggacgg  | gacatttcag  | atcggcgggc  | ccggccgctc  | ttcattcacg  | cctcgtcagg | 26940 |
| caatcctaac  | tctgcagacc  | tcgtcctctg  | agccgcgctc  | tggaggcatt  | ggaactctgc | 27000 |
| aattttattga | ggagtttgtg  | ccatcggtct  | actttaaccc  | cttctcggga  | cctcccgcc  | 27060 |
| actatccgga  | tcaattttatt | cctaactttg  | acgcggtaaa  | ggactcggcg  | gacggctacg | 27120 |
| actgaatgtt  | aagtggagag  | gcagagcaac  | tgcgctgaa   | acacctggtc  | cactgtcgcc | 27180 |
| gccacaagtg  | ctttgcccgc  | gactccggtg  | agttttgcta  | ctttgaattg  | cccgaggatc | 27240 |
| atatcgaggg  | ccggcgcac   | ggcgtccggc  | ttaccgcca   | gggagagctt  | gcccgtagcc | 27300 |
| tgattcggga  | gtttaccag   | cgccccctgc  | tagttgagcg  | ggacagggga  | ccctgtgttc | 27360 |
| tcactgtgat  | ttgcaactgt  | cctaaccctg  | gattacatca  | agatctttgt  | tgccatctct | 27420 |
| gtgctgagta  | taataaatac  | agaaattaa   | atatactggg  | gctcctatcg  | ccatcctgta | 27480 |
| aacgccaccg  | tcttcacccg  | cccaagcaaa  | ccaaggcgaa  | ccttacctgg  | tacttttaac | 27540 |
| atctctccct  | ctgtgattta  | caacagtttc  | aaccagacg   | gagtgagtct  | acgagagAAC | 27600 |
| ctctccgagc  | tcagctactc  | catcagaaaa  | aacaccacc   | tccttacctg  | ccgggaacgt | 27660 |
| acgagtgcgt  | caccggccgc  | tgcaccacac  | ctaccgcctg  | accgtaaacc  | agactttttc | 27720 |
| cggacagacc  | tcaataactc  | tgtttaccag  | aacaggaggt  | gagcttagaa  | aacccttagg | 27780 |
| gtattaggcc  | aaaggcgag   | ctactgtggg  | gtttatgaac  | aattcaagca  | actctacggg | 27840 |
| ctattctaata | tcaggttttct | ctagaatcgg  | ggttgggggtt | attctctgtc  | ttgtgattct | 27900 |
| ctttattctt  | atactaacgc  | ttctctgcct  | aaggctcgcc  | gcctgctgtg  | tgacattttg | 27960 |
| catttattgt  | cagcttttta  | aacgctgggg  | tcgccacca   | agatgattag  | gtacataatc | 28020 |
| ctaggttttac | tcacccttgc  | gtcagcccac  | ggtaccacc   | aaaagggtgga | ttttaaggag | 28080 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |             |       |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| ccagcctgta  | atgttacatt  | cgcagctgaa  | gctaattgagt | gcaccactct  | tataaaatgc  | 28140 |
| accacagaac  | atgaaaagct  | gcttatttcgc | cacaaaaaca  | aaattggcaa  | gtatgctggt  | 28200 |
| tatgctatfff | ggcagccagg  | tgacactaca  | gagtataatg  | ttacagtttt  | ccagggtaaa  | 28260 |
| agtcataaaa  | cttttatgta  | tactttttcca | ttttatgaaa  | tgtgcgacat  | taccatgtac  | 28320 |
| atgagcaaac  | agtataagtt  | gtggccccc   | caaaattgtg  | tggaaaacac  | tggcactttc  | 28380 |
| tgctgcactg  | ctatgcta    | tacagtgtc   | gctttggtct  | gtaccctact  | ctatattaaa  | 28440 |
| tacaaaagca  | gacgcagctt  | tattgaggaa  | aagaaaatgc  | cttaattttac | taagttacaa  | 28500 |
| agctaattgtc | accactaact  | gctttactcg  | ctgcttgcaa  | aacaaattca  | aaaagttagc  | 28560 |
| attataatta  | gaataggatt  | taaaccccc   | ggtcatttcc  | tgctcaatac  | cattccccctg | 28620 |
| aacaattgac  | tctatgtggg  | atatgctcca  | gcgctacaac  | cttgaagtca  | ggcttcctgg  | 28680 |
| atgtcagcat  | ctgacttttg  | ccagcacctg  | tcccgcggat  | ttgttccagt  | ccaactacag  | 28740 |
| cgaccacccc  | taacagagat  | gaccaacaca  | accaacgcgg  | ccgccgctac  | cggacttaca  | 28800 |
| tctaccacaa  | atacacccca  | agtttctgcc  | tttgtcaata  | actgggataa  | cttgggcatg  | 28860 |
| tggtggttct  | ccatagcgct  | tatgtttgta  | tgccttatta  | ttatgtggct  | catctgctgc  | 28920 |
| ctaaagcgca  | aacgcgcccc  | accacccatc  | tatagtccca  | tcattgtgct  | acacccaaac  | 28980 |
| aatgatggaa  | tccatagatt  | ggacggactg  | aaacacatgt  | tcttttctct  | tacagtatga  | 29040 |
| ttaaagtaga  | catgatttct  | cgagttttta  | tattactgac  | ccttggttgcg | ctttttttgt  | 29100 |
| gcgtgctcca  | cattggctgc  | ggtttctcac  | atcgaagtag  | actgcattcc  | agccttcaca  | 29160 |
| gtctatttgc  | tttacggatt  | tgtcaccctc  | acgctcatct  | gcagcctcat  | cactgtggtc  | 29220 |
| atcgcttcta  | tccagtgc    | tgactgggtc  | tgtgtgcgct  | ttgcatatct  | cagacaccat  | 29280 |
| ccccagtaca  | gggacaggac  | tatagctgag  | cttcttagaa  | ttctttaatt  | atgaaattta  | 29340 |
| ctgtgacttt  | tctgtgatt   | atgtgcaccc  | tatctgcgtt  | ttgttccccg  | acctccaagc  | 29400 |
| ctcaaagaca  | tatatcatgc  | agattcactc  | gtatatggaa  | tattccaagt  | tgctacaatg  | 29460 |
| aaaaaagcga  | tctttccgaa  | gcctgggttat | atgcaatcat  | ctctgttatg  | gtgttctgca  | 29520 |
| gtaccatctt  | agccctagct  | atatatccct  | accttgacat  | tggttggaac  | gcaatagatg  | 29580 |
| ccatgaacca  | cccaactttc  | cccgcgcccc  | ctatgcttcc  | actgcaacaa  | gttggttgcg  | 29640 |
| gcggctttgt  | cccagccaat  | cagcctcgcc  | caccttctcc  | cacccccact  | gaaatcagct  | 29700 |
| actttaatct  | aacaggagga  | gatgactgac  | accctagatc  | tagaaatgga  | cggaattatt  | 29760 |
| acagagcagc  | gcctgctaga  | aagacgcagg  | gcagcggccg  | agcaacagcg  | catgaatcaa  | 29820 |
| gagctccaag  | acatgggttaa | cttgaccag   | tgcaaaaggg  | gtatcttttg  | tctggtaaag  | 29880 |
| caggccaaag  | tcacctacga  | cagtaatacc  | accggacacc  | gccttagcta  | caagttgcc   | 29940 |
| accaagcgtc  | agaaattggg  | ggcatggtg   | ggagaaaagc  | ccattaccat  | aactcagcac  | 30000 |
| tcggtagaaa  | ccgaaggctg  | cattcactca  | ccttgtcaag  | gacctgagga  | tctctgcacc  | 30060 |
| cttattaaga  | ccctgtgcgg  | tctcaaagat  | cttattccct  | ttaactaata  | aaaaaaaaata | 30120 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |             |            |             |            |       |
|-------------|------------|-------------|------------|-------------|------------|-------|
| ataaagcatc  | acttacttaa | aatcagttag  | caaatttctg | tccagtttat  | tcagcagcac | 30180 |
| ctccttgccc  | tcttcccagc | tctggtattg  | cagcttcctc | ctggctgcaa  | acttttctca | 30240 |
| caatctaaat  | ggaatgtcag | tttcctcctg  | ttcctgtcca | tccgcaccca  | ctatcttcat | 30300 |
| gttgttgcag  | atgaagcgcg | caagaccgtc  | tgaagatacc | ttcaaccccg  | tgtatccata | 30360 |
| tgacacggaa  | accggtcctc | caactgtgcc  | ttttcttact | cctccctttg  | tatcccccaa | 30420 |
| tgggtttcaa  | gagagtcccc | ctgggggtact | ctctttgctc | ctatccgaac  | ctctagttac | 30480 |
| ctccaatggc  | atgcttgctc | tcaaaatggg  | caacggcctc | tctctggacg  | aggccggcaa | 30540 |
| ccttacctcc  | caaaatgtaa | ccactgtgag  | cccacctctc | aaaaaaacca  | agtcaaacat | 30600 |
| aaacctggaa  | atatctgcac | ccctcacagt  | tacctcagaa | gccctaactg  | tggctgccgc | 30660 |
| cgcacctcta  | atggtcgcg  | gcaacacact  | caccatgcaa | tcacaggccc  | cgctaaccgt | 30720 |
| gcacgactcc  | aaacttagca | ttgccaccca  | aggaccctc  | acagtgtcag  | aaggaaagct | 30780 |
| agccctgcaa  | acatcaggcc | ccctcaccac  | caccgatagc | agtaccctta  | ctatcactgc | 30840 |
| ctcacccct   | ctaactactg | ccactggtag  | cttgggcatt | gacttgaaag  | agcccattta | 30900 |
| tacacaaaat  | ggaaaactag | gactaaagta  | cggggctcct | ttgcatgtaa  | cagacgacct | 30960 |
| aaacactttg  | accgtagcaa | ctggtccagg  | tgtgactatt | aataatactt  | ccttgcaaac | 31020 |
| taaagttact  | ggagccttgg | gttttgattc  | acaaggcaat | atgcaactta  | atgtagcagg | 31080 |
| aggactaagg  | attgattctc | aaaacagacg  | ccttatactt | gatgttagtt  | atccgtttga | 31140 |
| tgctcaaaac  | caactaaatc | taagactagg  | acagggccct | ctttttataa  | actcagccca | 31200 |
| caacttgat   | attaactaca | acaaaggcct  | ttacttgttt | acagcttcaa  | acaattccaa | 31260 |
| aaagcttgag  | gttaacctaa | gcactgccaa  | ggggttgatg | tttgacgcta  | cagccatagc | 31320 |
| cattaatgca  | ggagatgggc | ttgaatttgg  | ttcaccta   | gcaccaaaca  | caaatcccct | 31380 |
| caaaacaaaa  | attggccatg | gcctagaatt  | tgattcaa   | aacgctatgg  | ttcctaaact | 31440 |
| aggaactggc  | cttagttttg | acagcacagg  | tgccattaca | gtaggaaaca  | aaaataatga | 31500 |
| taagctaact  | ttgtggacca | caccagctcc  | atctccta   | tgtagactaa  | atgcagagaa | 31560 |
| agatgctaaa  | ctcacttttg | tcttaacaaa  | atgtggcagt | caaatacttg  | ctacagtttc | 31620 |
| agttttggct  | gttaaaggca | gtttggctcc  | aatatctgga | acagttcaaa  | gtgctcatct | 31680 |
| tattataaga  | tttgacgaaa | atggagtgtc  | actaaaca   | tccttcctgg  | accagaata  | 31740 |
| ttggaacttt  | agaaatggag | atcttactga  | aggcacagcc | tatacaaacg  | ctgttggatt | 31800 |
| tatgccta    | ctatcagctt | atccaaaatc  | tcacggtaaa | actgccaaaa  | gtaacattgt | 31860 |
| cagtcaagtt  | tacttaa    | acg         | gagacaaa   | ac          | taacctgt   | 31920 |
| cggtacacag  | gaaacaggag | acacaactcc  | aagtgcatac | tctatgtcat  | tttcatggga | 31980 |
| ctggctctggc | cacaactaca | ttaatgaaat  | atttggcaca | tcctcttaca  | ctttttcata | 32040 |
| cattgcccaa  | gaataaagaa | tcgtttgtgt  | tatgtttcaa | cggtgtttatt | tttcaattgc | 32100 |
| agaaaatttc  | aagtcatttt | tcattcagta  | gtatagcccc | accaccacat  | agcttataca | 32160 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |            |             |            |             |       |
|------------|-------------|------------|-------------|------------|-------------|-------|
| gatcaccgta | ccttaatcaa  | actcacagaa | ccctagtatt  | caacctgcca | cctccctccc  | 32220 |
| aacacacaga | gtacacagtc  | ctttctcccc | ggctggcctt  | aaaaagcatc | atatcatggg  | 32280 |
| taacagacat | attcttaggt  | gttatattcc | acacgggtttc | ctgtcgagcc | aaacgctcat  | 32340 |
| cagtgatatt | aataaactcc  | ccgggcagct | cacttaagtt  | catgtcgctg | tccagctgct  | 32400 |
| gagccacagg | ctgctgtcca  | acttgcggtt | gcttaacggg  | cggcgaagga | gaagtccacg  | 32460 |
| cctacatggg | ggtagagtca  | taatcgtgca | tcaggatagg  | gcggtggtgc | tgcagcagcg  | 32520 |
| cgcgaaataa | ctgctgccgc  | cggcgctccg | tcctgcagga  | atacaacatg | gcagtgggtct | 32580 |
| cctcagcgat | gattcgcacc  | gcccgcagca | taaggcgcct  | tgtcctccgg | gcacagcagc  | 32640 |
| gcaccctgat | ctcacttaaa  | tcagcacagt | aactgcagca  | cagcaccaca | atattgttca  | 32700 |
| aaatcccaca | gtgcaaggcg  | ctgtatccaa | agctcatggc  | ggggaccaca | gaacccacgt  | 32760 |
| ggccatcata | ccacaagcgc  | aggtagatta | agtggcgacc  | cctcataaac | acgctggaca  | 32820 |
| taaacattac | ctcttttggc  | atgttgtaat | tcaccacctc  | ccggtaccat | ataaacctct  | 32880 |
| gattaaacat | ggcgccatcc  | accaccatcc | taaaccagct  | ggccaaaacc | tgcccgccgg  | 32940 |
| ctatacactg | cagggaaaccg | ggactggaac | aatgacagtg  | gagagcccag | gactcgtaac  | 33000 |
| catggatcat | catgctcgtc  | atgatatcaa | tgttggcaca  | acacaggcac | acgtgcatac  | 33060 |
| acttcctcag | gattacaagc  | tcctcccgcg | ttagaaccat  | atcccaggga | acaacccatt  | 33120 |
| cctgaatcag | cgtaaattcc  | acactgcagg | gaagacctcg  | cacgtaactc | acgttggtgca | 33180 |
| ttgtcaaagt | gttacattcg  | ggcagcagcg | gatgatcctc  | cagtatggta | gcgcggggtt  | 33240 |
| ctgtctcaaa | aggaggtaga  | cgatccctac | tgtacggagt  | gcgccgagac | aaccgagatc  | 33300 |
| gtgttggtcg | tagtgtcatg  | ccaaatggaa | cgccggacgt  | agtcataatt | cctgaagcaa  | 33360 |
| aaccaggtgc | gggcgtgaca  | aacagatctg | cgtctccggt  | ctcgccgctt | agatcgctct  | 33420 |
| gtgtagtagt | tgtagtatat  | ccactctctc | aaagcatcca  | ggcgccccct | ggcttcgggt  | 33480 |
| tctatgtaaa | ctccttcatg  | cggcgctgcc | ctgataacat  | ccaccaccgc | agaataagcc  | 33540 |
| acaccagcc  | aacctacaca  | ttcgttctgc | gagtcacaca  | cgggaggagc | gggaagagct  | 33600 |
| ggaagaacca | tgtttttttt  | tttattccaa | aagattatcc  | aaaacctcaa | aatgaagatc  | 33660 |
| tattaagtga | acgcgctccc  | ctccggtggc | gtgggtcaa   | tcacagcca  | aagaacagat  | 33720 |
| aatggcattt | gtaagatggt  | gcacaatggc | ttccaaaagg  | caaacggccc | tcacgtccaa  | 33780 |
| gtggacgtaa | aggctaaacc  | cttcaggggt | aatctcctct  | ataaacattc | cagcaccttc  | 33840 |
| aaccatgccc | aaataattct  | catctcgcca | ccttctcaat  | atatctctaa | gcaaattccc  | 33900 |
| aatattaagt | ccggccattg  | taaaaatctg | ctccagagcg  | ccctccacct | tcagcctcaa  | 33960 |
| gcagcgaatc | atgattgcaa  | aaattcaggt | tcctcacaga  | cctgtataag | attcaaaagc  | 34020 |
| ggaacattaa | caaaaatacc  | gcgatcccgt | aggctccctc  | gcagggccag | ctgaacataa  | 34080 |
| tcgtgcaggt | ctgcacggac  | cagcgcggcc | acttccccgc  | caggaaccat | gacaaaagaa  | 34140 |
| cccacactga | ttatgacacg  | catactcgga | gctatgctaa  | ccagcgtagc | cccgatgtaa  | 34200 |

# 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |            |            |             |       |
|------------|------------|------------|------------|------------|-------------|-------|
| gcttggtgca | tgggcggcga | tataaaatgc | aaggtgctgc | tcaaaaaatc | aggcaaagcc  | 34260 |
| tcgcgcaaaa | aagaaagcac | atcgtagtca | tgctcatgca | gataaaggca | ggtaagctcc  | 34320 |
| ggaaccacca | cagaaaaaga | caccattttt | ctctcaaaca | tgtctgcggg | tttctgcata  | 34380 |
| aacacaaaat | aaaataacaa | aaaaacattt | aaacattaga | agcctgtctt | acaacaggaa  | 34440 |
| aaacaaccct | tataagcata | agacggacta | cggccatgcc | ggcgtgaccg | taaaaaaact  | 34500 |
| ggtcaccgtg | attaaaaagc | accaccgaca | gctcctcggt | catgtccgga | gtcataatgt  | 34560 |
| aagactcggg | aaacacatca | ggttgattca | catcggtcag | tgctaaaaag | cgaccgaaat  | 34620 |
| agcccggggg | aatacatacc | cgcaggcgta | gagacaacat | tacagccccc | ataggaggta  | 34680 |
| taacaaaatt | aataggagag | aaaaacacat | aaacacctga | aaaaccctcc | tgcctaggca  | 34740 |
| aaatagcacc | ctcccgtctc | agaacaacat | acagcgcttc | cacagcggca | gccataacag  | 34800 |
| tcagccttac | cagtaaaaaa | gaaaacctat | taaaaaaaca | ccactcgaca | cggcaccagc  | 34860 |
| tcaatcagtc | acagtgtaaa | aaagggccaa | gtgcagagcg | agtatatata | ggactaaaaa  | 34920 |
| atgacgtaac | ggttaaagtc | cacaaaaaac | accagaaaaa | ccgcacgcga | acctacgccc  | 34980 |
| agaaacgaaa | gccaaaaaac | ccacaacttc | ctcaaatcgt | cacttccggt | ttcccacggt  | 35040 |
| acgtcacttc | ccattttaag | aaaactacaa | ttccaacac  | atacaagtta | ctccgccccta | 35100 |
| aaacctacgt | caccgcgcc  | gttcccacgc | cccgcgccac | gtcacaaact | ccacccccctc | 35160 |
| attatcatat | tggcttcaat | ccaaaataag | gtatattatt | gat        |             | 35203 |

<210> 21  
 <211> 36460  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Construct containing two mismatches with duplication

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| <400> 21   |            |            |            |            |            |     |
| catcatcaat | aatatacctt | attttggatt | gaagccaata | tgataatgag | ggggtggagt | 60  |
| ttgtgacgtg | gcgcggggcg | tgggaacggg | gcgggtgacg | tagtagtgtg | gcggaagtgt | 120 |
| gatgttgcaa | gtgtggcgga | acacatgtaa | gcgacggatg | tggcaaaagt | gacgtttttg | 180 |
| gtgtgcgccg | gtgtacacag | gaagtgacaa | ttttcgcgcg | gttttaggcg | gatgttgtag | 240 |
| taaatttggg | cgtaaccgag | taagatttgg | ccattttcgc | gggaaaactg | aataagagga | 300 |
| agtgaatct  | gaataatttt | gtgttactca | tagcgcgtaa | tatttgtcta | gggccgcggg | 360 |
| gactttgacc | gtttacgtgg | agactcgccc | aggtgttttt | ctcaggtggt | ttccgcgttc | 420 |
| cgggtcaaag | ttggcgtttt | attattatag | tcagtacgta | cgtgtacttc | tgatcggcga | 480 |
| tactagggag | ataaggatgt | acctgacaaa | accacattgt | tgttgttatc | attattattt | 540 |
| agttttcctt | ccttgctaac | tcctgacgga | atctttctca | cctcaaatgc | gaagtacttt | 600 |
| agtttagaaa | agacttggtg | gaaggggtgg | tgggtgaaaa | gtagggtgat | cttccaaact | 660 |
| aatctgggtc | cccgcgccgc | ccagtagctg | ggattcaaga | gcgaagagtg | gggatcgtcc | 720 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |             |             |            |            |      |
|------------|-------------|-------------|-------------|------------|------------|------|
| ccttgtttga | tcagaaagac  | ataaaaggaa  | aatcaagtga  | acaatgatca | gccccacctc | 780  |
| cacccccacc | ccctgcgcgc  | gcacaataca  | atctatttaa  | ttgtacttca | tacttttcat | 840  |
| tccaatgggg | tgactttgct  | tctggagaaa  | ctcttgattc  | ttgaactctg | gggctggcag | 900  |
| ctagcctcca | gaagcaaagt  | caccccattg  | gaatgaaaag  | tatgaagtac | aatgaaaagt | 960  |
| atgaagtact | ggctccagaa  | gcaaagtcac  | cctccagaag  | caaagtcacc | ccattggaat | 1020 |
| gaaaagtatg | aagtacgcta  | gcaaaagggg  | aagcgggctg  | ctgctctctg | caggttctgc | 1080 |
| agcggctctt | gtctagtggg  | tgttttcttt  | ttcttagccc  | tgcccctgga | ttgtcagacg | 1140 |
| gcgggctgct | gcctctgaag  | ttagccgtga  | tttctcttag  | agccgggtct | tatctctggc | 1200 |
| tgacgcttgc | ctgtgggtga  | ctaatacacac | aataacattg  | tttagggctg | gaataaagtc | 1260 |
| agagctgttt | acccccactc  | tataggggtt  | caatataaaa  | aggcggcgga | gaactgtccg | 1320 |
| agtcagaagc | gttctgcac   | cggcgctgag  | agcctgaccc  | ggctctgctc | gctgtccttg | 1380 |
| cgcgctgcct | ccgggctgcc  | cgcgacgctt  | tcgccccagt  | ggaagggcca | cttgctgcgg | 1440 |
| ccgctaattc | tgcatatcgg  | gatccggcat  | gggcctctcc  | accgtgcctg | acctgctgct | 1500 |
| gccgctggtg | ctcctggagc  | tgttggtggg  | aatatacccc  | tcaggggtta | ttggactggt | 1560 |
| ccctcaccta | ggggacaggg  | agaagagaga  | tagtgtgtgt  | ccccaaggaa | aatatatcca | 1620 |
| ccctcaaaat | aattcgattt  | gctgtaccaa  | gtgccacaaa  | ggaacctact | tgtacaatga | 1680 |
| ctgtccaggc | ccggggcagg  | atacggactg  | caggagagtgt | gagagcggct | ccttcaccgc | 1740 |
| ttcagaaaac | cacctcagac  | actgcctcag  | ctgctccaaa  | tgccgaaagg | aaatgggtca | 1800 |
| ggtggagatc | tcttcttgca  | cagtggaccg  | ggacaccgtg  | tgtggctgca | ggaagaacca | 1860 |
| gtaccggcat | tattggagtg  | aaaacctttt  | ccagtgcctc  | aattgcagcc | tctgcctcaa | 1920 |
| tgggaccgtg | cacctctcct  | gccaggagaa  | acagaacacc  | gtgtgcacct | gccatgcagg | 1980 |
| tttctttcta | agagaaaacg  | agtgtgtctc  | ctgtagtaac  | tgtaagaaaa | gcctggagtg | 2040 |
| cacgaagtgt | tgcttaccaa  | gcttaggata  | cagatctaac  | ttgggggtgg | tttgtcttct | 2100 |
| tcttttgcca | attccactaa  | ttgtttgggt  | gaagagaaaag | gaagtacaga | aaacatgcag | 2160 |
| aaagcacaga | aaggaaaacc  | aaggttctca  | tgaatctcca  | accttaaata | ctgaaacagt | 2220 |
| ggcaataaat | ttatctgatg  | ttgacttgag  | taaatatatc  | accactattg | ctggagtcac | 2280 |
| gacactaagt | caagttaaag  | gctttgttcg  | aaagaatggg  | gtcaatgaag | ccaaaataga | 2340 |
| tgagatcaag | aatgacaatg  | tccaagacac  | agcagaacag  | aaagttcaac | tgcttcgtaa | 2400 |
| ttggcatcaa | cttcatggaa  | agaaagaagc  | gtatgacaca  | ttgattaaag | atctcaaaaa | 2460 |
| agccaatctt | tgtactcttg  | cagagaaaat  | tcagactatc  | atcctcaagg | acattactag | 2520 |
| tgactcagaa | aattcaaact  | tcagaaatga  | aatccaaagc  | ttggtctagc | tcgagcatgc | 2580 |
| atctaggcgg | ccgcatggca  | gaaattcgcg  | aattcgctag  | cgttaacgga | tcctctagac | 2640 |
| gagatccgaa | cttgttttatt | gcagcttata  | atggttacia  | ataaagcaat | agcatcacia | 2700 |
| atttcacaaa | taaagcattt  | ttttcactgc  | attctagtgt  | tggtttgtcc | aaactcatca | 2760 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |            |             |             |             |      |
|-------------|-------------|------------|-------------|-------------|-------------|------|
| atgtatctta  | tcatgtctag  | atctgtactg | aaatgtgtgg  | gcgtggctta  | aggggtgggaa | 2820 |
| agaatatata  | aggtgggggt  | cttatgtagt | tttgtatctg  | ttttgcagca  | gccgccgccg  | 2880 |
| ccatgagcac  | caactcgttt  | gatggaagca | ttgtgagctc  | atatttgaca  | acgcgcatgc  | 2940 |
| ccccatgggc  | cggggtgcgt  | cagaatgtga | tgggctccag  | cattgatggg  | cgccccgtcc  | 3000 |
| tgcccgcaaa  | ctctactacc  | ttgacctacg | agaccgtgtc  | tggaacgccg  | ttggagactg  | 3060 |
| cagcctccgc  | cgccgcttca  | gccgctgcag | ccaccgcccc  | cgggattgtg  | actgactttg  | 3120 |
| ctttcctgag  | cccgccttga  | agcagtgcag | cttcccgttc  | atccgccccg  | gatgacaagt  | 3180 |
| tgacggctct  | tttggcacia  | ttggattctt | tgacccggga  | acttaatgtc  | gtttctcagc  | 3240 |
| agctgttggg  | tctgcgccag  | caggtttctg | ccctgaaggc  | ttcctcccct  | cccaatgcgg  | 3300 |
| tttaaaacat  | aaataaaaaa  | ccagactctg | tttggatttg  | gatcaagcaa  | gtgtcttgct  | 3360 |
| gtctttatct  | aggggttttg  | cgcgcgcggt | aggcccggga  | ccagcgggtc  | cggtcggtga  | 3420 |
| gggtcctgtg  | tattttttcc  | aggacgtggg | aaagggtgact | ctggatgttc  | agatacatgg  | 3480 |
| gcataagccc  | gtctctgggg  | tggaggtagc | accactgcag  | agcttcatgc  | tgccggggtg  | 3540 |
| tggtgtagat  | gatccagtcg  | tagcaggagc | gctgggcgtg  | gtgcctaaaa  | atgtctttca  | 3600 |
| gtagcaagct  | gattgccagg  | ggcaggccct | tggtgtaagt  | gtttacaaag  | cggttaagct  | 3660 |
| gggatgggtg  | catacgtggg  | gatatgagat | gcatcttgga  | ctgtatTTTT  | aggttggcta  | 3720 |
| tgttcccagc  | catatccctc  | cggggattca | tggtgtgcag  | aaccaccagc  | acagtgtatc  | 3780 |
| cgggtgcactt | gggaaatttg  | tcatgtagct | tagaaggaaa  | tgctgtggaag | aacttggaga  | 3840 |
| cgcccttgtg  | acctccaaga  | ttttccatgc | attcgtccat  | aatgatggca  | atgggcccac  | 3900 |
| ggcgggcggc  | ctgggcgaag  | atatttctgg | gatcactaac  | gtcatagtgg  | tgttccagga  | 3960 |
| tgagatcgtc  | ataggccatt  | tttacaaagc | gcgggcggag  | gggtgccagac | tgccgtataa  | 4020 |
| tggttccatc  | cggcccaggg  | gcgtagttac | cctcacagat  | ttaagggtgg  | gaaagaatat  | 4080 |
| ataagggtggg | ggtcttatgt  | agttttgtat | ctgttttgca  | gcagccgccg  | ccgcatgag   | 4140 |
| caccaactcg  | tttgatggaa  | gcattgtgag | ctcatatttg  | acaacgcgca  | tgcccccatg  | 4200 |
| ggccgggggtg | cgtcagaatg  | tgatgggctc | cagcattgat  | ggtcgccccg  | tcctgcccgc  | 4260 |
| aaactctact  | accttgacct  | acgagaccgt | gtctggaacg  | ccgttggaga  | ctgcagcctc  | 4320 |
| cgccgccgct  | tcagccgctg  | cagccaccgc | ccgcgggatt  | gtgactgact  | ttgctttcct  | 4380 |
| gagcccgttt  | gcaagcagtg  | cagcttcccc | ttcatccgcc  | cgcatgaca   | agttgacggc  | 4440 |
| tcttttggca  | caattggatt  | ctttgaccgg | ggaacttaat  | gtcgtttctc  | agcagctggt  | 4500 |
| ggatctgcgc  | cagcaggttt  | ctgccctgaa | ggcttcctcc  | cctcccaatg  | cggtttaaaa  | 4560 |
| cataaataaa  | aaaccagact  | ctgtttggat | ttggatcaag  | caagtgtctt  | gctgtcttta  | 4620 |
| tttaggggtt  | ttgcgcgcgc  | ggtagggccc | ggaccagcgg  | tctcggtcgt  | tgaggggtcct | 4680 |
| gtgtatTTTT  | tccaggacgt  | ggtaaagggt | actctggatg  | ttcagataca  | tgggcataag  | 4740 |
| cccgtctctg  | gggtggagggt | agcaccactg | cagagcttca  | tgctgcgggg  | tggtgttgta  | 4800 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |              |             |             |              |             |      |
|-------------|--------------|-------------|-------------|--------------|-------------|------|
| gatgatccag  | tcgtagcagg   | agcgctgggc  | gtggtgccta  | aaaatgtctt   | tcagtagcaa  | 4860 |
| gctgattgcc  | aggggcaggc   | ccttggtgta  | agtgtttaca  | aagcggttaa   | gctgggatgg  | 4920 |
| gtgcatacgt  | ggggatatga   | gatgcatctt  | ggactgtatt  | tttaggttgg   | ctatgttccc  | 4980 |
| agccatatcc  | ctccggggat   | tcatgttggt  | cagaaccacc  | agcacagtgt   | atccggtgca  | 5040 |
| cttgggaaat  | ttgtcatgta   | gcttagaagg  | aaatgctgtg  | aagaacttgg   | agacgccctt  | 5100 |
| gtgacctcca  | agatthttcca  | tgcattcgtc  | cataatgatg  | gcaatgggcc   | cacgggcggc  | 5160 |
| ggcctggggc  | aagatatttc   | tgggatcact  | aacgtcatag  | ttgtgttcca   | ggatgagatc  | 5220 |
| gtcataggcc  | atthtttaca   | agcgcgggcg  | gagggtgcca  | gactgcggta   | taatggttcc  | 5280 |
| atccggccca  | ggggcgtagt   | taccctcaca  | gatttgcatt  | tcccacgctt   | tgagttcaga  | 5340 |
| tggggggatc  | atgtctacct   | gcggggcgat  | gaagaaaacg  | gtttccgggg   | taggggagat  | 5400 |
| cagctgggaa  | gaaagcaggt   | tcctgagcag  | ctgcgactta  | ccgcagccgg   | tggggccgta  | 5460 |
| aatcacacct  | attaccggct   | gcaactggta  | gttaagagag  | ctgcagctgc   | cgatcatccct | 5520 |
| gagcaggggg  | gccacttcgt   | taagcatgtc  | cctgactcgc  | atgtthttccc  | tgaccaaadc  | 5580 |
| cgccagaagg  | cgctcgccgc   | ccagcgatag  | cagttcttgc  | aaggaagcaa   | agthttttcaa | 5640 |
| cggtttgaga  | ccgtccgccc   | taggcatgct  | tttgagcggt  | tgaccaagca   | gttccaggcg  | 5700 |
| gtcccacagc  | tcggtcacct   | gctctacggc  | atctcgatcc  | agcatatctc   | ctcgthttcgc | 5760 |
| gggttggggc  | ggctthtcgt   | gtacggcagt  | agtcggtgct  | cgthccagacg  | ggccagggtc  | 5820 |
| atgtctthtc  | acgggcgcag   | ggtcctcgtc  | agcgtagtct  | gggtcacgggt  | gaaggggtgc  | 5880 |
| gthccgggct  | gcgcgctggc   | cagggtgcgc  | ttgaggctgg  | thctgctgggt  | gctgaagcgc  | 5940 |
| tgccggtctt  | cgccctgcgc   | gtcggccagg  | tagcatttga  | ccatgggtgtc  | atagtccagc  | 6000 |
| ccctccgcgg  | cgthggccctt  | ggcgcgcacg  | thggcccttgg | aggaggcgcc   | gcacgagggg  | 6060 |
| cagthcagac  | thtttgagggc  | gtagagcttg  | ggcgcgagaa  | ataccgattc   | cggggagtag  | 6120 |
| gcatccgcgc  | cgcaggcccc   | gcagacggtc  | thgcattcca  | cgagccaggt   | gagctctggc  | 6180 |
| cgthcgggggt | caaaaaccag   | gtthccccca  | thctthtttga | thcgthttctt  | acctctgggt  | 6240 |
| thcatgagcc  | ggtgtccacg   | ctcggtgacg  | aaaaggctgt  | ccgtgtcccc   | gtatacagac  | 6300 |
| thgagaggcc  | thtcctcgag   | cgggtgttccg | cggthctctc  | cgthatagaaa  | ctcggaaccac | 6360 |
| thtgagacaa  | aggctcgcgt   | ccaggccagc  | acgaaggagg  | ctaagtggga   | ggggtagcgg  | 6420 |
| thgttgthcca | ctaggggggtc  | cactcgctcc  | agggtgtgaa  | gacacatgtc   | ggccctcttcg | 6480 |
| gcatcaagga  | aggthgattgg  | thttgtaggtg | taggccacgt  | gaccgggtgt   | thctgaaggg  | 6540 |
| gggctataaa  | aggggggtggg  | ggcgcgthtcg | thctcactct  | ctthccgcac   | gctgtctgcg  | 6600 |
| agggccagct  | gtthgggggtga | gtactccctc  | thgaaaagcgg | gcatgacttc   | thcgctaaga  | 6660 |
| thgtcagtht  | ccaaaaacga   | ggaggatttg  | atattcacct  | ggcccgcgggt  | gatgccttht  | 6720 |
| agggtggccg  | catccatctg   | gtcagaaaag  | acaatcttht  | thgttgthcaag | ctthggtggca | 6780 |
| aacgaccctg  | agagggcgtht  | ggacagcaac  | thggcgatgg  | agcgaggggt   | thggththttg | 6840 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |             |            |      |
|------------|------------|-------------|------------|-------------|------------|------|
| tcgcgatcgg | cgcgctcctt | ggccgcgatg  | tttagctgca | cgtattcgcg  | cgcaacgcac | 6900 |
| cgccattcgg | gaaagacggt | ggtgcgctcg  | tcgggcacca | ggtgcacgcg  | ccaaccgcgg | 6960 |
| ttgtgcaggg | tgacaaggtc | aacgctggtg  | gctacctctc | cgcgtagggc  | ctcgttggtc | 7020 |
| cagcagaggc | ggccgccctt | gcgcgagcag  | aatggcggtg | gggggtctag  | ctgcgtctcg | 7080 |
| tccggggggg | ctgcgtccac | ggtaaagacc  | ccgggcagca | ggcgcgcgct  | gaagtagtct | 7140 |
| atcttgcatc | cttgcaagtc | tagcgcctgc  | tgccatgcgc | gggcggcaag  | cgcgcgctcg | 7200 |
| tatgggttga | gtgggggacc | ccatggcatg  | gggtgggtga | gcgcggaggc  | gtacatgccg | 7260 |
| caaatgtcgt | aaacgtagag | gggctctctg  | agtattccaa | gatatgtagg  | gtagcatctt | 7320 |
| ccaccgcgga | tgctggcgcg | cacgtaatcg  | tatagttcgt | gcgagggagc  | gaggaggctc | 7380 |
| ggaccgaggt | tgctacgggc | gggctgctct  | gctcggaaga | ctatctgcct  | gaagatggca | 7440 |
| tgtgagttgg | atgatatggt | tggacgctgg  | aagacgttga | agctggcgct  | tgtgagacct | 7500 |
| accgcgtcac | gcacgaagga | ggcgtaggag  | tcgcgcagct | tgttgaccag  | ctcggcggtg | 7560 |
| acctgcacgt | ctagggcgca | gtagtccagg  | gtttccttga | tgatgtcata  | cttatcctgt | 7620 |
| cccttttttt | tccacagctc | gcggttgagg  | acaaactctt | cgcggtcttt  | ccagtactct | 7680 |
| tggatcggaa | acccgtcggc | ctccgaacgg  | taagagccta | gcatgtagaa  | ctggttgacg | 7740 |
| gcctggtagg | cgcagcatcc | cttttctacg  | ggtagcgctg | atgcctgcgc  | ggccttccgg | 7800 |
| agcgaggtgt | gggtgagcgc | aaagggtgtcc | ctgaccatga | ctttgaggta  | ctggtatttg | 7860 |
| aagtcagtgt | cgtcgcatcc | gccctgctcc  | cagagcaaaa | agtccgtgcg  | ctttttggaa | 7920 |
| cgcggatttg | gcagggcgaa | ggtgacatcg  | ttgaagagta | tctttcccg   | gcgaggcata | 7980 |
| aagttgcgtg | tgatgcggaa | gggtcccggc  | acctcggaac | ggttggtta   | tacctgggcg | 8040 |
| gcgagcacga | tctcgtcaaa | gccgttgatg  | ttgtggccca | caatgtaaag  | ttccaagaag | 8100 |
| cgcgggatgc | ccttgatgga | aggcaatttt  | ttaagttcct | cgtagggtgag | ctcttcaggg | 8160 |
| gagctgagcc | cgtgctctga | aaggggcccag | tctgcaagat | gagggttgga  | agcgacgaat | 8220 |
| gagctccaca | ggtcacgggc | cattagcatt  | tgcaggtggt | cgcgaaaggt  | cctaaactgg | 8280 |
| cgacctatgg | ccattttttt | tgggggtgatg | cagtagaagg | taagcgggtc  | ttgttcccag | 8340 |
| cggtcccatc | caaggttcgc | ggctagggtct | cgcgcggcag | tcactagagg  | ctcatctccg | 8400 |
| ccgaacttca | tgaccagcat | gaagggcacg  | agctgcttcc | caaaggcccc  | catccaagta | 8460 |
| taggtctcta | catcgtaggt | gacaaagaga  | cgctcgggtg | gaggatgcga  | gccgatcggg | 8520 |
| aagaactgga | tctcccgcca | ccaattggag  | gagtggttat | tgatgtggtg  | aaagtagaag | 8580 |
| tccctgcgac | gggccgaaca | ctcgtgctgg  | cttttgtaaa | aacgtgcgca  | gtactggcag | 8640 |
| cggtgcacgg | gctgtacatc | ctgcacgagg  | ttgacctgac | gaccgcgcac  | aaggaagcag | 8700 |
| agtgggaatt | tgagcccctc | gcctggcggg  | tttggctggt | ggtcttctac  | ttcggctgct | 8760 |
| tgtccttgac | cgtctggctg | ctcgagggga  | gttacggtgg | atcggaccac  | cacgccgcgc | 8820 |
| gagcccaaag | tccagatgtc | cgcgcgcggc  | ggtcggagct | tgatgacaac  | atcgcgcaga | 8880 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |             |             |       |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| tgggagctgt  | ccatggtctg  | gagctcccg   | ggcgtcaggt  | caggcgggag  | ctcctgcagg  | 8940  |
| tttacctcgc  | atagacgggt  | cagggcgcg   | gctagatcca  | ggtgatacct  | aatttccagg  | 9000  |
| ggctgggttg  | tggcggcg    | gatggcttgc  | aagaggccgc  | atccccgcgg  | cgcgactacg  | 9060  |
| gtaccgcgcg  | gcgggcgggtg | ggccgcgggg  | gtgtccttgg  | atgatgcac   | taaaagcggt  | 9120  |
| gacgcgggcg  | agcccccgga  | ggtagggggg  | gctccggacc  | cgcggggaga  | gggggcaggg  | 9180  |
| gcacgtcggc  | gccgcgcgcg  | ggcaggagct  | ggtgctgcgc  | gcgtaggttg  | ctggcgaacg  | 9240  |
| cgacgacgcg  | gcggttgatc  | tcctgaatct  | ggcgcctctg  | cgtgaagacg  | acgggcccgg  | 9300  |
| tgagcttgaa  | cctgaaagag  | agttcgacag  | aatcaatttc  | ggtgtcgttg  | acggcggcct  | 9360  |
| ggcgaaaaat  | ctcctgcacg  | tctcctgagt  | tgtcttgata  | ggcgatctcg  | gccatgaact  | 9420  |
| gctcgatctc  | ttcctcctgg  | agatctccgc  | gtccggctcg  | ctccacgggtg | gcggcgagggt | 9480  |
| cgttggaaat  | gcggggccatg | agctgcgaga  | aggcgttgag  | gcctccctcg  | ttccagacgc  | 9540  |
| ggctgtagac  | cacgccccct  | tcggcatcgc  | gggcgcgcgc  | gaccacctgc  | gcgagattga  | 9600  |
| gctccacgtg  | ccgggcgaag  | acggcgtagt  | ttcgcaggcg  | ctgaaagagg  | tagttgaggg  | 9660  |
| tggtggcggt  | gtgttctgcc  | acgaagaagt  | acataacca   | gcgtcgcaac  | gtggattcgt  | 9720  |
| tgatatcccc  | caaggcctca  | aggcgctcca  | tggcctcgta  | gaagtccacg  | gcgaagttga  | 9780  |
| aaaactggga  | gttgcgcgcc  | gacacgggta  | actcctcctc  | cagaagacgg  | atgagctcgg  | 9840  |
| cgacagtgtc  | gcgcacctcg  | cgctcaaagg  | ctacaggggc  | ctcttcttct  | tcttcaatct  | 9900  |
| cctcttccat  | aagggcctcc  | ccttcttctt  | cttctggcgg  | cgggtggggga | ggggggacac  | 9960  |
| ggcggcgacg  | acgggcgcacc | gggaggcggt  | cgacaaagcg  | ctcgatcac   | tccccgcggc  | 10020 |
| gacggcgcat  | ggtctcggtg  | acggcgcggc  | cgttctcgcg  | ggggcgaggt  | tggaagacgc  | 10080 |
| cggcggtcat  | gtcccggtta  | tgggttggcg  | gggggctgcc  | atgcggcagg  | gatacggcg   | 10140 |
| taacgatgca  | tctcaacaat  | tgttggtgtag | gtactccgcc  | gccgagggac  | ctgagcgaggt | 10200 |
| ccgcacgcac  | cggatcgga   | aacctctcga  | gaaaggcgctc | taaccagtca  | cagtcgcaag  | 10260 |
| gtaggctgag  | caccgtggcg  | ggcggcagcg  | ggcggcggtc  | ggggttgttt  | ctggcggagg  | 10320 |
| tgctgctgat  | gatgtaatta  | aagtaggcgg  | tcttgagacg  | gcggatgggtc | gacagaagca  | 10380 |
| ccatgtcctt  | gggtccggcc  | tgctgaatgc  | gcaggcggtc  | ggccatgccc  | caggcttcgt  | 10440 |
| tttgacatcg  | gcgcagggtct | ttgtagtagt  | cttgcatgag  | cctttctacc  | ggcacttctt  | 10500 |
| cttctccttc  | ctcttgcct   | gcatctcttg  | catctatcgc  | tgcggcggcg  | gcggagtttg  | 10560 |
| gccgtaggtg  | gcgccctctt  | cctcccatgc  | gtgtgacccc  | gaagcccctc  | atcggtgaa   | 10620 |
| gcagggctag  | gtcggcgaca  | acgcgctcgg  | ctaataatggc | ctgctgcacc  | tgctgaggg   | 10680 |
| tagactggaa  | gtcatccatg  | tccacaaagc  | ggtgggtatgc | gcccgtgttg  | atggtgtaag  | 10740 |
| tgaggtggc   | cataacggac  | cagttaacgg  | tctgggtgacc | cggctgcgag  | agctcggtgt  | 10800 |
| acctgagacg  | cgagtaagcc  | ctcgagtcaa  | atacgtagtc  | gttgcaagtc  | cgcaccaggt  | 10860 |
| actggatatcc | cacaaaaag   | tgcggcggcg  | gctggcggtg  | gaggggcccag | cgtagggtgg  | 10920 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |             |             |            |       |
|------------|------------|------------|-------------|-------------|------------|-------|
| ccggggctcc | gggggcgaga | tcttccaaca | taaggcgatg  | atatccgtag  | atgtacctgg | 10980 |
| acatccaggt | gatgccggcg | gcggtggtgg | aggcgcgcg   | aaagtcgagg  | acgcggttcc | 11040 |
| agatgttgcg | cagcggcaaa | aagtgtctca | tggtcggggac | gctctggccg  | gtcaggcgcg | 11100 |
| cgcaatcggt | gacgctctag | accgtgcaaa | aggagagcct  | gtaagcgggc  | actcttccgt | 11160 |
| ggtctggtgg | ataaattcgc | aagggtatca | tggcggacga  | ccgggggttcg | agccccgtat | 11220 |
| ccggccgtcc | gccgtgatcc | atgcggttac | cgcccgcgtg  | tcgaaccag   | gtgtgcgacg | 11280 |
| tcagacaacg | ggggagtgt  | ccttttggct | tccttcagg   | cgcgcggt    | gctgctgtag | 11340 |
| cttttttggc | cactggccgc | gcgcagcgta | agcggttagg  | ctggaaagcg  | aaagcattaa | 11400 |
| gtggctcgct | ccctgtagcc | ggagggttat | ttccaagg    | ttgagtcg    | ggacccccgg | 11460 |
| ttcgagtctc | ggaccggccg | gactgcggcg | aacgggggtt  | tgctccccg   | tcatgcaaga | 11520 |
| ccccgcttgc | aaattcctcc | ggaaacaggg | acgagcccct  | tttttgcttt  | tcccagatgc | 11580 |
| atccggtgct | gcggcagatg | cgccccctc  | ctcagcagcg  | gcaagagcaa  | gagcagcggc | 11640 |
| agacatgcag | ggcaccctcc | cctcctccta | ccgcgtcagg  | aggggcgaca  | tccgcggttg | 11700 |
| acgcggcagc | agatggtgat | tacgaacccc | cgcggcggcg  | ggcccggcac  | tacctggact | 11760 |
| tggaggaggg | cgagggcctg | gcgcggctag | gagcgccctc  | tcctgagcgg  | caccaagg   | 11820 |
| tgagctgaa  | gcgtgatacg | cgtgaggcgt | acgtgccg    | gcagaacctg  | tttcgcgacc | 11880 |
| gcgagggaga | ggagcccag  | gagatgcggg | atcgaaagt   | ccacgcagg   | cgcgagctgc | 11940 |
| ggcatggcct | gaatcgcgag | cggttgctgc | gcgaggagga  | ctttgagccc  | gacgcgcgaa | 12000 |
| ccgggattag | tccgcgcgc  | gcacacgtgg | cggccgccga  | cctggtaacc  | gcatacgagc | 12060 |
| agacggtgaa | ccaggagatt | aactttcaaa | aaagctttaa  | caaccacgtg  | cgtacgcttg | 12120 |
| tggcgcgcg  | ggaggtggct | ataggactga | tgcattctgt  | ggactttgta  | agcgcgctgg | 12180 |
| agcaaaaccc | aaatagcaag | ccgctcatgg | cgagctgtt   | ccttatagtg  | cagcacagca | 12240 |
| gggacaacga | ggcattcagg | gatgcgctgc | taaacatagt  | agagcccag   | ggccgctggc | 12300 |
| tgctcgattt | gataaacatc | ctgcagagca | tagtggtgca  | ggagcgagc   | ttgagcctgg | 12360 |
| ctgacaagg  | ggccgccatc | aactattcca | tgcttagcct  | gggcaagttt  | tacgcccgc  | 12420 |
| agatatacca | taccctttac | gttcccatag | acaaggaggt  | aaagatcgag  | gggttctaca | 12480 |
| tgcgcatggc | gctgaagggt | cttaccttga | gcgacgacct  | gggcgtttat  | cgcaacgagc | 12540 |
| gcatccacaa | ggccgtgagc | gtgagccggc | ggcgcgagct  | cagcgaccgc  | gagctgatgc | 12600 |
| acagcctgca | aagggccctg | gctggcacgg | gcagcggcga  | tagagaggcc  | gagtcctact | 12660 |
| ttgacgcggg | cgctgacctg | cgctggggcc | caagccgacg  | cgccctggag  | gcagctgggg | 12720 |
| ccggacctgg | gctggcggtg | gcacccgcgc | gcgctggcaa  | cgtcggcggc  | gtggaggaat | 12780 |
| atgacgagga | cgatgagtac | gagccagagg | acggcgagta  | ctaagcgggtg | atgtttctga | 12840 |
| tcagatgatg | caagacgcaa | cggacccggc | ggtgcggggc  | gcgctgcaga  | gccagccgtc | 12900 |
| cggccttaac | tccacggacg | actggcgcca | ggtcatggac  | cgcattcatgt | cgctgactgc | 12960 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |             |             |             |       |
|------------|------------|-------------|-------------|-------------|-------------|-------|
| gcgcaatcct | gacgcgttcc | ggcagcagcc  | gcaggccaac  | cggctctccg  | caattctgga  | 13020 |
| agcggtggtc | ccggcgcgcg | caaacccccac | gcacgagaag  | gtgctggcga  | tcgtaaacgc  | 13080 |
| gctggccgaa | aacagggcca | tccggccccga | cgaggccggc  | ctggtctacg  | acgcgctgct  | 13140 |
| tcagcgctg  | gctcgttaca | acagcggcaa  | cgtgcagacc  | aacctggacc  | ggctggtggg  | 13200 |
| ggatgtgctg | gaggccgtgg | cgcagcggtga | gcgcgcgcag  | cagcagggca  | acctgggctc  | 13260 |
| catggttgca | ctaaacgcct | tcctgagtag  | acagccccgc  | aacgtgccgc  | ggggacagga  | 13320 |
| ggactacacc | aactttgtga | gcgcactgctg | gctaattggtg | actgagacac  | cgcaaagtga  | 13380 |
| ggtgtaccag | tctgggccag | actatTTTTT  | ccagaccagt  | agacaaggcc  | tgcagaccgt  | 13440 |
| aaacctgagc | caggctttca | aaaacttgca  | ggggctgtgg  | ggggtgcggg  | ctccacaggg  | 13500 |
| cgaccgcgcg | accgtgtcta | gcttgctgac  | gcccactcg   | cgctgttgc   | tgctgctaata | 13560 |
| agcgcccttc | acggacagt  | gcagcggtg   | ccgggacaca  | tacctaggct  | acttgctgac  | 13620 |
| actgtaccgc | gaggccatag | gtcaggcgca  | tgtggacgag  | catactttcc  | aggagattac  | 13680 |
| aagtgtcagc | cgcgcgctgg | ggcaggagga  | cacgggcagc  | ctggaggcaa  | ccctaaacta  | 13740 |
| cctgctgacc | aaccggcggc | agaagatccc  | ctcgttgac   | agtttaaaca  | gcgaggagga  | 13800 |
| gcgcattttg | cgctacgtgc | agcagagcgt  | gagccttaac  | ctgatgcgcg  | acggggtaac  | 13860 |
| gcccagcgtg | gcgctggaca | tgaccgcgcg  | caacatggaa  | ccgggcatgt  | atgcctcaaa  | 13920 |
| ccggccgttt | atcaaccgcc | taatggacta  | cttgcatcgc  | gcggccgccg  | tgaacccccga | 13980 |
| gtatttcacc | aatgccatct | tgaacccgca  | ctggctaccg  | ccccctgggt  | tctacaccgg  | 14040 |
| gggattcgag | gtgcccagag | gtaacgatgg  | attcctctgg  | gacgacatag  | acgacagcgt  | 14100 |
| gttttccccg | caaccgcaga | ccctgctaga  | gttgcaacag  | cgcgagcagg  | cagaggcggc  | 14160 |
| gctgcgaaag | gaaagcttcc | gcaggccaag  | cagcttgtcc  | gatctaggcg  | ctgcggcccc  | 14220 |
| gcggtcagat | gctagtagcc | cattttccaag | cttgataggg  | tctcttacca  | gcactcgcac  | 14280 |
| caccgccccg | cgctgtctgg | gcgaggagga  | gtacctaaac  | aactcgctgc  | tgcagccgca  | 14340 |
| gcgcgaaaaa | aacctgcctc | cggcatttcc  | caacaacggg  | atagagagcc  | tagtggacaa  | 14400 |
| gatgagtaga | tggaagacgt | acgcgcagga  | gcacaggggac | gtgccaggcc  | cgcgccccgc  | 14460 |
| caccgctcgt | caaaggcacg | accgtcagcg  | gggtctggtg  | tgaggaggacg | atgactcggc  | 14520 |
| agacgacagc | agcgtcctgg | atttgggagg  | gagtggcaac  | ccgtttgcgc  | accttcgccc  | 14580 |
| caggctgggg | agaatgtttt | aaaaaaaaaa  | aaagcatgat  | gcaaaaataaa | aaactcacca  | 14640 |
| aggccatggc | accgagcggt | ggttttcttg  | tattccccct  | agtatgcggc  | gcgcggcgat  | 14700 |
| gtatgaggaa | ggtcctcctc | cctcctacga  | gagtgtggtg  | agcgcggcgc  | cagtggcggc  | 14760 |
| ggcgctgggt | tctcccttcg | atgctccccct | ggacccgccc  | tttgtgcctc  | cgcggtacct  | 14820 |
| gcggcctacc | ggggggagaa | acagcatccg  | ttactctgag  | ttggcacccc  | tattcgacac  | 14880 |
| caccgctgtg | tacctggtgg | acaacaagtc  | aacggatgtg  | gcatccctga  | actaccagaa  | 14940 |
| cgaccacagc | aactttctga | ccacggtcat  | tcaaaacaat  | gactacagcc  | cgggggaggc  | 15000 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |            |             |            |             |       |
|-------------|-------------|------------|-------------|------------|-------------|-------|
| aagcacacag  | accatcaatc  | ttgacgaccg | gtcgcactgg  | ggcggcgacc | tgaaaacccat | 15060 |
| cctgcatacc  | aacatgccaa  | atgtgaacga | gttcatgttt  | accaataagt | ttaaggcgcg  | 15120 |
| ggtgatgggtg | tcgcgcttgc  | ctactaagga | caatcaggtg  | gagctgaaat | acgagtgggt  | 15180 |
| ggagttcacg  | ctgcccagag  | gcaactactc | cgagaccatg  | accatagacc | ttatgaacaa  | 15240 |
| cgcgatcgtg  | gagcactact  | tgaaagtggg | cagacagaac  | ggggttctgg | aaagcgacat  | 15300 |
| cggggtaaag  | tttgacaccc  | gcaacttcag | actgggggtt  | gaccccgta  | ctggtcttgt  | 15360 |
| catgcctggg  | gtatatacaa  | acgaagcctt | ccatccagac  | atcattttgc | tgccaggatg  | 15420 |
| cgggggtggac | ttcaccacaa  | gccgcctgag | caacttggtg  | ggcatccgca | agcggcaacc  | 15480 |
| cttccaggag  | ggcttttagga | tcacctacga | tgatctggag  | ggtggtaaca | ttcccgcaact | 15540 |
| gttgatgtg   | gacgcctacc  | aggcgagctt | gaaagatgac  | accgaacagg | gcgggggtgg  | 15600 |
| cgcaggcggc  | agcaacagca  | gtggcagcgg | cgcggaagag  | aactccaacg | cggcagccgc  | 15660 |
| ggcaatgcag  | ccggtggagg  | acatgaacga | tcatgccatt  | cgcggcgaca | cctttgccac  | 15720 |
| acgggctgag  | gagaagcgcg  | ctgaggccga | agcagcggcc  | gaagctgccg | cccccgctgc  | 15780 |
| gcaacccgag  | gtcgagaagc  | ctcagaagaa | accggtgatc  | aaaccctga  | cagaggacag  | 15840 |
| caagaaacgc  | agttacaacc  | taataagcaa | tgacagcacc  | ttcaccagct | accgcagctg  | 15900 |
| gtaccttgca  | tacaactacg  | gcgaccctca | gaccggaatc  | cgctcatgga | ccctgctttg  | 15960 |
| cactcctgac  | gtaacctgcg  | gctcggagca | ggtctactgg  | tcgttgccag | acatgatgca  | 16020 |
| agaccccgctg | accttccgct  | ccacgcgcca | gatcagcaac  | tttccggtgg | tgggcgcccga | 16080 |
| gctgttgccc  | gtgcaactca  | agagcttcta | caacgaccag  | gccgtctact | cccaactcat  | 16140 |
| ccgccagttt  | acctctctga  | cccacgtggt | caatcgcttt  | cccgagaacc | agattttggc  | 16200 |
| gcgcccgcga  | gccccaccca  | tcaccaccgt | cagtgaaaac  | gttcctgctc | tcacagatca  | 16260 |
| cgggacgcta  | ccgctgcgca  | acagcatcgg | aggagtccag  | cgagtgaaca | ttactgacgc  | 16320 |
| cagacgccgc  | acctgcccct  | acgtttacaa | ggccctgggc  | atagtctcgc | cgcgcgctct  | 16380 |
| atcgagccgc  | actttttgag  | caagcatgtc | catccttata  | tcgcccagca | ataacacagg  | 16440 |
| ctggggcctg  | cgcttcccaa  | gcaagatggt | tggcggggcc  | aagaagcgct | ccgaccaaca  | 16500 |
| cccagtgcgc  | gtgcgcgggc  | actaccgcgc | gccctggggc  | gcgcacaaac | gcggccgcac  | 16560 |
| tgggcgcacc  | accgtcgatg  | acgccatcga | cgcggtgggtg | gaggaggcgc | gcaactacac  | 16620 |
| gcccacgccg  | ccaccagtgt  | ccacagtgga | cgcggccatt  | cagaccgtgg | tgcgcgagagc | 16680 |
| ccggcgctat  | gctaaaatga  | agagacggcg | gaggcgcgta  | gcacgtcgcc | accgccgccg  | 16740 |
| acccggcact  | gccgcccac   | gcgcggcggc | ggccctgctt  | aaccgcgcac | gtcgcaccgg  | 16800 |
| ccgacggggc  | gccatgcggg  | ccgctcgaag | gctggccgcg  | ggtattgtca | ctgtgcccc   | 16860 |
| caggtccagg  | cgacgagcgg  | ccgccgcagc | agccgcggcc  | attagtgcta | tgactcaggg  | 16920 |
| tcgcaggggc  | aacgtgtatt  | gggtgcgcga | ctcggttagc  | ggcctgcgcg | tgcccgtgcg  | 16980 |
| cacccgcccc  | ccgcgcaact  | agattgcaag | aaaaaactac  | ttagactcgt | actgttgat   | 17040 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |            |             |            |       |
|------------|------------|------------|------------|-------------|------------|-------|
| gtatccagcg | gcggcggcgc | gcaacgaagc | tatgtccaag | cgcaaaatca  | aagaagagat | 17100 |
| gctccaggtc | atcgcgccgg | agatctatgg | ccccccgaag | aaggaagagc  | aggattacaa | 17160 |
| gccccgaaag | ctaaagcggg | tcaaaaagaa | aaagaaagat | gatgatgatg  | aacttgacga | 17220 |
| cgaggtggaa | ctgctgcacg | ctaccgcgcc | caggcgacgg | gtacagtgga  | aaggtcgacg | 17280 |
| cgtaaaacgt | gttttgcgac | ccggcaccac | cgtagtcttt | acgcccgggtg | agcgctccac | 17340 |
| ccgcacctac | aagcgcgtgt | atgatgaggt | gtacggcgac | gaggacctgc  | ttgagcaggg | 17400 |
| caacgagcgc | ctcggggagt | ttgcctacgg | aaagcggcat | aaggacatgc  | tggcgttgcc | 17460 |
| gctggacgag | ggcaacccaa | cacctagcct | aaagcccgtg | acactgcagc  | aggtgctgcc | 17520 |
| cgcgcttgca | ccgtccgaag | aaaagcgcgg | cctaaagcgc | gagtctggtg  | acttggcacc | 17580 |
| caccgtgcag | ctgatggtac | ccaagcgcca | gcgactggaa | gatgtcttgg  | aaaaaatgac | 17640 |
| cgtggaacct | gggctggagc | ccgaggtccg | cgtgcggcca | atcaagcagg  | tggcgccggg | 17700 |
| actgggcgtg | cagaccgtgg | acgttcagat | accactacc  | agtagcacca  | gtattgccac | 17760 |
| cgccacagag | ggcatggaga | cacaaacgtc | cccggttgcc | tcagcgggtg  | cggatgccgc | 17820 |
| ggtgcaggcg | gtcgtgcgg  | ccgcgtccaa | gacctctacg | gaggtgcaaa  | cggacccgtg | 17880 |
| gatgtttcgc | gtttcagccc | cccggcgccc | gcgccgttcg | aggaagtacg  | gcgccgccag | 17940 |
| cgcgctactg | cccgaatatg | ccctacatcc | ttccattgcg | cctacccccg  | gctatcgtgg | 18000 |
| ctacacctac | cgccccagaa | gacgagcaac | tacccgacgc | cgaaccacca  | ctggaacccg | 18060 |
| ccgccgccgt | cgccgtcgcc | agcccgtgct | ggccccgatt | tccgtgcgca  | gggtggctcg | 18120 |
| cgaaggaggc | aggaccctgg | tgctgccaac | agcgcgctac | caccccagca  | tcgtttaaaa | 18180 |
| gccggtcttt | gtggttcttg | cagatatggc | cctcacctgc | cgctctcggt  | tcccggtgcc | 18240 |
| gggattccga | ggaagaatgc | accgtaggag | gggcatggcc | ggccacggcc  | tgacgggcgg | 18300 |
| catgcgtcgt | gcgcaccacc | ggcggcgggc | cgcgtcgcac | cgtcgcatgc  | gcggcggtat | 18360 |
| cctgcccctc | cttattccac | tgatcgccgc | ggcgattggc | gccgtgcccg  | gaattgcatc | 18420 |
| cgtggccttg | caggcgcaga | gacactgatt | aaaaacaagt | tgcatgtgga  | aaaatcaaaa | 18480 |
| taaaaagtct | ggactctcac | gctcgcttgg | tcctgtaact | attttgtaga  | atggaagaca | 18540 |
| tcaactttgc | gtctctggcc | ccgcgacacg | gctcgcgccc | gttcatggga  | aactggcaag | 18600 |
| atatcggcac | cagcaatatg | agcggtgggc | ccttcagctg | gggctcgctg  | tggagcggca | 18660 |
| ttaaaaattt | cggttccacc | gttaagaact | atggcagcaa | ggcctggaac  | agcagcacag | 18720 |
| gccagatgct | gagggataag | ttgaaagagc | aaaatttcca | acaaaagggtg | gtagatggcc | 18780 |
| tggcctctgg | cattagcggg | gtggtggacc | tggccaacca | ggcagtgcaa  | aataagatta | 18840 |
| acagtaagct | tgatccccgc | cctcccgtag | aggagcctcc | accggccgtg  | gagacagtgt | 18900 |
| ctccagaggg | gcgtggcgaa | aagcgtccgc | gccccgacag | ggaagaaact  | ctggtgacgc | 18960 |
| aaatagacga | gcctccctcg | tacgaggagg | cactaaagca | aggcctgccc  | accacccgtc | 19020 |
| ccatcgcgcc | catggctacc | ggagtgcgtg | gccagcacac | accgtaacg   | ctggacctgc | 19080 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |            |             |       |
|-------------|-------------|-------------|-------------|------------|-------------|-------|
| ctccccccgc  | cgacacccag  | cagaaacctg  | tgctgccagg  | cccgaccgcc | gttgttgtaa  | 19140 |
| cccgtcctag  | ccgcgcgtcc  | ctgcgccgcg  | ccgccagcgg  | tccgcgatcg | ttgcggcccg  | 19200 |
| tagccagtgg  | caactggcaa  | agcacactga  | acagcatcgt  | gggtctgggg | gtgcaatccc  | 19260 |
| tgaagcgccg  | acgatgcttc  | tgatagctaa  | cgtgtcgtat  | gtgtgtcatg | tatgcgtcca  | 19320 |
| tgtcgccgcc  | agaggagctg  | ctgagccgcc  | gcgcgcccgc  | tttccaagat | ggctaccctt  | 19380 |
| tcgatgatgc  | cgcagtggtc  | ttacatgcac  | atctcggggc  | aggacgcctc | ggagtacctg  | 19440 |
| agccccgggc  | tggtgcagtt  | tgcccgcgcc  | accgagacgt  | acttcagcct | gaataacaag  | 19500 |
| tttagaaacc  | ccacggtggc  | gcctacgcac  | gacgtgacca  | cagaccggtc | ccagcgtttg  | 19560 |
| acgctgcggt  | tcatccctgt  | ggaccgtgag  | gatactgcgt  | actcgtacaa | ggcgcggttc  | 19620 |
| accctagctg  | tgggtgataa  | ccgtgtgctg  | gacatggctt  | ccacgtactt | tgacatccgc  | 19680 |
| ggcgtgctgg  | acagggggcc  | tacttttaag  | ccctactctg  | gactgccta  | caacgccctg  | 19740 |
| gctcccaagg  | gtgccccaaa  | tccttgcgaa  | tgggatgaag  | ctgctactgc | tcttgaaata  | 19800 |
| aacctagaag  | aagaggacga  | tgacaacgaa  | gacgaagtag  | acgagcaagc | tgagcagcaa  | 19860 |
| aaaactcacg  | tatttgggca  | ggcgccttat  | tctggtataa  | atattacaaa | ggagggtatt  | 19920 |
| caaataggtg  | tcgaaggtca  | aacacctaaa  | tatgccgata  | aaacatttca | acctgaacct  | 19980 |
| caaataggag  | aatctcagtg  | gtacgaaaca  | gaaattaatc  | atgcagctgg | gagagtccta  | 20040 |
| aaaaagacta  | ccccaatgaa  | accatgttac  | ggttcatatg  | caaaacccac | aaatgaaaat  | 20100 |
| ggagggcaag  | gcattcttgt  | aaagcaacaa  | aatggaaagc  | tagaaagtca | agtggaaatg  | 20160 |
| caatttttct  | caactactga  | ggcagccgca  | ggcaatggtg  | ataacttgac | tcctaaagtg  | 20220 |
| gtattgtaca  | gtgaagatgt  | agatatagaa  | accccagaca  | ctcatatttc | ttacatgccc  | 20280 |
| actattaagg  | aaggtaactc  | acgagaacta  | atgggccaac  | aatctatgcc | caacaggcct  | 20340 |
| aattacattg  | cttttaggga  | caatttttatt | ggtctaattgt | attacaacag | cacgggtaat  | 20400 |
| atgggtgttc  | tggcggggcca | agcatcgcag  | ttgaatgctg  | ttgtagattt | gcaagacaga  | 20460 |
| aacacagagc  | tttcatacca  | gcttttgctt  | gattccattg  | gtgatagaac | cagggtacttt | 20520 |
| tctatgtgga  | atcaggctgt  | tgacagctat  | gatccagatg  | ttagaattat | tgaaaatcat  | 20580 |
| ggaactgaag  | atgaacttcc  | aaattactgc  | tttcactggt  | gaggtgtgat | taatacagag  | 20640 |
| actcttacca  | aggtaaaacc  | taaaacaggt  | caggaaaatg  | gatgggaaaa | agatgctaca  | 20700 |
| gaattttcag  | ataaaaaatga | aataagagtt  | ggaaataatt  | ttgccatgga | aatcaatcta  | 20760 |
| aatgccaaacc | tgtggagaaa  | tttcctgtac  | tccaacatag  | cgctgtattt | gcccgcacaag | 20820 |
| ctaaagtaca  | gtccttccaa  | cgtaaaaatt  | tctgataacc  | caaacaccta | cgactacatg  | 20880 |
| aacaagcgag  | tggtggctcc  | cgggctagtg  | gactgctaca  | ttaaccttgg | agcacgctgg  | 20940 |
| tcccttgact  | atatggacaa  | cgtcaacca   | ttaaccacc   | accgcaatgc | tggcctgcgc  | 21000 |
| taccgctcaa  | tgttgctggg  | caatggtcgc  | tatgtgccct  | tccacatcca | ggtgcctcag  | 21060 |
| aagttctttg  | ccattaaaaa  | cctccttctc  | ctgccgggct  | catacaccta | cgagtggaac  | 21120 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |             |            |             |             |       |
|------------|-------------|-------------|------------|-------------|-------------|-------|
| ttcaggaagg | atgttaacat  | ggttctgcag  | agctccctag | gaaatgacct  | aagggttgac  | 21180 |
| ggagccagca | ttaagtttga  | tagcatttgc  | ctttacgcca | ccttcttccc  | catggcccac  | 21240 |
| aacaccgcct | ccacgcttga  | ggccatgctt  | agaaacgaca | ccaacgacca  | gtcctttaac  | 21300 |
| gactatctct | ccgccgcaa   | catgctctac  | cctatacccg | ccaacgctac  | caacgtgccc  | 21360 |
| atatccatcc | cctcccgcaa  | ctgggcggct  | ttccgcggt  | gggccttcac  | gcgccttaag  | 21420 |
| actaaggaaa | ccccatcact  | gggctcgggc  | tacgaccctt | attacaccta  | ctctggctct  | 21480 |
| ataccctacc | tagatggaac  | cttttacctc  | aaccacacct | ttaagaaggt  | ggccattacc  | 21540 |
| tttgactctt | ctgtcagctg  | gcctggcaat  | gaccgcctgc | ttacccccaa  | cgagtttgaa  | 21600 |
| attaagcgct | cagttgacgg  | ggaggggttac | aacgttgccc | agtgtaacat  | gaccaaagac  | 21660 |
| tggttcctgg | tacaaatgct  | agctaactat  | aacattggct | accagggtt   | ctatatccca  | 21720 |
| gagagctaca | aggaccgcat  | gtactccttc  | tttagaaact | tccagcccat  | gagccgtcag  | 21780 |
| gtggtggatg | atactaaata  | caaggactac  | caacaggtgg | gcatactaca  | ccaacacaac  | 21840 |
| aactctggat | ttgttggtta  | ccttgcccc   | accatgcgcg | aaggacaggc  | ctaccctgct  | 21900 |
| aacttcccct | atccgcttat  | aggcaagacc  | gcagttgaca | gcattaccca  | gaaaaagttt  | 21960 |
| ctttgcgatc | gcaccctttg  | gcgcataccca | ttctccagta | actttatgtc  | catgggcgca  | 22020 |
| ctcacagacc | tgggcaaaaa  | ccttctctac  | gccaactccg | cccacgcgct  | agacatgact  | 22080 |
| tttgaggtgg | atcccatgga  | cgagcccacc  | cttctttatg | ttttgtttga  | agtctttgac  | 22140 |
| gtggtccgtg | tgcaccagcc  | gcaccgcggc  | gtcatcgaaa | ccgtgtacct  | gcgcacgccc  | 22200 |
| ttctcggccg | gcaacgccac  | aacataaaga  | agcaagcaac | atcaacaaca  | gctgccgcca  | 22260 |
| tgggctccag | tgagcaggaa  | ctgaaagcca  | ttgtcaaaga | tcttggttgt  | gggcatatt   | 22320 |
| ttttgggcac | ctatgacaag  | cgctttccag  | gctttgtttc | tccacacaag  | ctcgcctgcg  | 22380 |
| ccatagtcaa | tacggccggt  | cgcgagactg  | ggggcgta   | ctggatggcc  | tttgccctgga | 22440 |
| acccgcactc | aaaaacatgc  | tacctctttg  | agccctttgg | cttttctgac  | cagcgactca  | 22500 |
| agcaggttta | ccagtttgag  | tacgagtcac  | tcctgcgccg | tagcgccatt  | gcttcttccc  | 22560 |
| ccgaccgctg | tataacgctg  | gaaaagtcca  | cccaaagcgt | acaggggccc  | aactcggccg  | 22620 |
| cctgtggact | attctgctgc  | atgtttctcc  | acgcctttgc | caactggccc  | caaactccca  | 22680 |
| tggatcacia | ccccaccatg  | aaccttatta  | ccggggtacc | caactccatg  | ctcaacagtc  | 22740 |
| cccaggtaca | gccaccctg   | cgtcgcaacc  | aggaacagct | ctacagcttc  | ctggagcgcc  | 22800 |
| actcgccta  | cttccgcagc  | cacagtgcgc  | agattaggag | cgccacttct  | ttttgtcact  | 22860 |
| tgaaaaacat | gtaaaaataa  | tgtactagag  | acactttcaa | taaaggcaaa  | tgcttttatt  | 22920 |
| tgtacactct | cggggtgatta | tttaccacca  | cccttgccgt | ctgcgccgtt  | taaaaatcaa  | 22980 |
| aggggttctg | ccgcgcatcg  | ctatgcgcca  | ctggcaggga | cacgttgcca  | tactggtggt  | 23040 |
| tagtgctcca | cttaaactca  | ggcacaacca  | tccgcggcag | ctcgggtgaag | ttttcactcc  | 23100 |
| acaggctgcg | caccatcacc  | aacgcgttta  | gcaggctggg | cgccgatatc  | ttgaagtcgc  | 23160 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |             |             |             |            |             |       |
|-------------|-------------|-------------|-------------|------------|-------------|-------|
| agttggggcc  | tccgccctgc  | gcgcgcgagt  | tgcgatacac  | agggttgcag | caactggaaca | 23220 |
| ctatcagcgc  | cggggtggtgc | acgctggcca  | gcacgctctt  | gtcggagatc | agatccgcgt  | 23280 |
| ccaggtcctc  | cgcgttgctc  | agggcgaaacg | gagtcaactt  | tggtagctgc | cttcccaaaa  | 23340 |
| agggcgcggtg | cccaggcttt  | gagttgcact  | cgaccgtag   | tgcatcaaa  | aggtgaccgt  | 23400 |
| gcccgggtctg | ggcgtttagga | tacagcgctt  | gcataaaagc  | cttgatctgc | ttaaaagcca  | 23460 |
| cctgagcctt  | tgcgccttca  | gagaagaaca  | tgccgcaaga  | cttgccggaa | aactgattgg  | 23520 |
| ccggacaggc  | cgcgctcgtgc | acgcagcacc  | ttgcgtcggg  | gttgagatc  | tgcaccacat  | 23580 |
| ttcggtccca  | ccggttcttc  | acgatcttgg  | ccttgctaga  | ctgctccttc | agcgcgcgct  | 23640 |
| gcccgttttc  | gctcgtcaca  | tccatttcaa  | tcacgtgctc  | cttatttata | ataatgcttc  | 23700 |
| cgtgtagaca  | cttaagctcg  | ccttcgatct  | cagcgagcgc  | gtgcagccac | aacgcgcagc  | 23760 |
| ccgtgggctc  | gtgatgcttg  | taggtcacct  | ctgcaaacga  | ctgcaggtac | gcctgcagga  | 23820 |
| atcgccccat  | catcgtcaca  | aaggcttctg  | tgctggtgaa  | ggtcagctgc | aaccgcggt   | 23880 |
| gctcctcggt  | cagccagggtc | ttgcatacgg  | ccgccagagc  | ttccacttgg | tcaggcagta  | 23940 |
| gtttgaagtt  | cgcttttaga  | tcgttatcca  | cgtgggtactt | gtccatcagc | gcgcgcgcag  | 24000 |
| cctccatgcc  | cttctccac   | gcagacacga  | tcggcacact  | cagcgggttc | atcacgtaa   | 24060 |
| tttactttc   | cgcttcgctg  | ggctcttcct  | cttctcttg   | cgtccgcata | ccacgcgcca  | 24120 |
| ctgggtcgtc  | ttcattcagc  | cgccgcactg  | tgcgcttacc  | tcctttgcca | tgcttgatta  | 24180 |
| gcaccggtgg  | gttgctgaaa  | cccaccattt  | gtagcgccac  | atcttctctt | tcttctcgc   | 24240 |
| tgtccacgat  | tacctctggt  | gatggcgggc  | gctcgggctt  | gggagaagg  | cgcttctttt  | 24300 |
| tcttcttggg  | cgcaatggcc  | aaatccgccg  | ccgaggtcga  | tgccgcggg  | ctgggtgtgc  | 24360 |
| gcggcaccag  | cgcgctcttg  | gatgagctct  | cctcgtcctc  | ggactcgata | cgccgcctca  | 24420 |
| tccgcttttt  | tgggggagcc  | cggggagggc  | gcggcgacgg  | ggacggggac | gacacgtcct  | 24480 |
| ccatggttgg  | gggacgtcgc  | gccgcaccgc  | gtccgcgctc  | gggggtggtt | tcgcgctgct  | 24540 |
| cctcttccc   | actggccatt  | tccttctcct  | ataggcagaa  | aaagatcatg | gagtcagtcg  | 24600 |
| agaagaagga  | cagcctaacc  | gccccctctg  | agttcgccac  | caccgcctcc | accgatgccg  | 24660 |
| ccaacgcgcc  | taccaccttc  | cccgtcgagg  | cacccccgct  | tgaggaggag | gaagtgatta  | 24720 |
| tcgagcagga  | cccaggtttt  | gtaagcgaag  | acgacgagga  | ccgctcagta | ccaacagagg  | 24780 |
| ataaaaagca  | agaccaggac  | aacgcagagg  | caaacgagga  | acaagtcggg | cggggggacg  | 24840 |
| aaaggcatgg  | cgactaccta  | gatgtgggag  | acgacgtgct  | gttgaagcat | ctgcagcgcc  | 24900 |
| agtgcgccat  | tatctgcgac  | gcgttgcaag  | agcgacgca   | tgtgcccctc | gccatagcgg  | 24960 |
| atgtcagcct  | tgcttacgaa  | cgccacctat  | tctcaccgcg  | cgtaccccc  | aaacgccaag  | 25020 |
| aaaacggcac  | atgcgagccc  | aacccgcgcc  | tcaacttcta  | ccccgtat   | gccgtgccag  | 25080 |
| aggtgcttgc  | cacctatcac  | atctttttcc  | aaaactgcaa  | gataccccta | tcctgccgtg  | 25140 |
| ccaaccgcag  | ccgagcggac  | aagcagctgg  | ccttgcgcca  | gggcgctgtc | atacctgata  | 25200 |

## 3182\_043PC02\_SequenceListing\_ascii

|             |            |             |             |             |             |       |
|-------------|------------|-------------|-------------|-------------|-------------|-------|
| tcgcctcgct  | caacgaagtg | ccaaaaatct  | ttgaggggtct | tggacgcgac  | gagaagcgcg  | 25260 |
| cggcaaacgc  | tctgcaacag | gaaaacagcg  | aaaatgaaag  | tcactctgga  | gtgttggtgg  | 25320 |
| aactcgaggg  | tgacaacgcg | cgccctagccg | tactaaaacg  | cagcatcgag  | gtcaccctact | 25380 |
| ttgcctaccc  | ggcacttaac | ctacccccca  | aggtcatgag  | cacagtcatg  | agtgagctga  | 25440 |
| tcgtgcgccg  | tgcgcagccc | ctggagaggg  | atgcaaattt  | gcaagaacaa  | acagaggagg  | 25500 |
| gcctaccgcg  | agttggcgac | gagcagctag  | cgcgctggct  | tcaaacgcgc  | gagcctgccg  | 25560 |
| acttgaggga  | gcgacgcaaa | ctaatgatgg  | ccgcagtgct  | cgttaccgtg  | gagcttgagt  | 25620 |
| gcatgcagcg  | gttctttgct | gaccgcggaga | tgcagcgcaa  | gctagaggaa  | acattgcact  | 25680 |
| acacctttcg  | acagggctac | gtacgccagg  | cctgcaagat  | ctccaacgtg  | gagctctgca  | 25740 |
| acctggtctc  | ctaccttgga | attttgcacg  | aaaaccgcct  | tgggcaaaac  | gtgcttcatt  | 25800 |
| ccacgctcaa  | ggcgagggcg | cgccgcgact  | acgtccgcga  | ctgcgtttac  | ttattttctat | 25860 |
| gctacacctg  | gcagacggcc | atgggcggtt  | ggcagcagtg  | cttgaggagg  | tgcaacctca  | 25920 |
| aggagctgca  | gaaactgcta | aagcaaaact  | tgaaggacct  | atggacggcc  | ttcaacgagc  | 25980 |
| gctccgtggc  | cgcgcacctg | gcggacatca  | ttttccccga  | acgcctgctt  | aaaaccctgc  | 26040 |
| aacaggggtct | gccagacttc | accagtcaaa  | gcatgttgca  | gaactttagg  | aactttatcc  | 26100 |
| tagagcgctc  | aggaatcttg | cccgccacct  | gctgtgcact  | tcctagcgac  | tttgtgcccc  | 26160 |
| ttaagtaccg  | cgaatgccct | ccgccgcttt  | ggggccactg  | ctaccttctg  | cagctagcca  | 26220 |
| actaccttgc  | ctaccactct | gacataatgg  | aagacgtgag  | cggtgacggt  | ctactggagt  | 26280 |
| gtcactgtcg  | ctgcaaccta | tgcaccccg   | accgctccct  | ggtttgcaat  | tcgcagctgc  | 26340 |
| ttaacgaaag  | tcaaattatc | ggtacctttg  | agctgcaggg  | tccctcgcct  | gacgaaaagt  | 26400 |
| ccgcggctcc  | ggggttgaaa | ctcactccgg  | ggctgtggac  | gtcggcttac  | cttcgcaaat  | 26460 |
| ttgtacctga  | ggactaccac | gcccacgaga  | ttaggttcta  | cgaagaccaa  | tcccgcgcgc  | 26520 |
| ctaatgcgga  | gcttaccgcc | tgcgtcatta  | cccagggccca | cattcttggc  | caattgcaag  | 26580 |
| ccatcaacaa  | agcccgccaa | gagtttctgc  | tacgaaaggg  | acgggggggtt | tacttgacc   | 26640 |
| cccagtccgg  | cgaggagctc | aacccaatcc  | ccccgccgcc  | gcagccctat  | cagcagcagc  | 26700 |
| cgcgggccct  | tgcttcccag | gatggcaccc  | aaaaagaagc  | tgcagctgcc  | gccgccaccc  | 26760 |
| acggacgagg  | aggaatactg | ggacagtcag  | gcagaggagg  | ttttggacga  | ggaggaggag  | 26820 |
| gacatgatgg  | aagactggga | gagcctagac  | gaggaagctt  | ccgaggtcga  | agagggtgtca | 26880 |
| gacgaaacac  | cgtcaccctc | ggtcgcattc  | ccctcgccgg  | cgccccagaa  | atcggaacc   | 26940 |
| ggttccagca  | tggctacaac | ctccgctcct  | caggcgccgc  | cggcactgcc  | cgttcgccga  | 27000 |
| cccaaccgta  | gatgggacac | cactggaacc  | agggccggta  | agtccaagca  | gccgccgccg  | 27060 |
| ttagcccaag  | agcaacaaca | gcgccaaggc  | taccgctcat  | ggcgcgggca  | caagaacgcc  | 27120 |
| atagttgctt  | gcttgcaaga | ctgtgggggc  | aacatctcct  | tcgcccgccg  | ctttcttctc  | 27180 |
| taccatcacg  | gcgtggcctt | ccccgtaac   | atcctgcatt  | actaccgtca  | tctctacagc  | 27240 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |            |            |       |
|------------|------------|-------------|------------|------------|------------|-------|
| ccatactgca | ccggcggcag | cggcagcaac  | agcagcggcc | acacagaagc | aaaggcgacc | 27300 |
| ggatagcaag | actctgacaa | agcccaagaa  | atccacagcg | gcggcagcag | caggaggagg | 27360 |
| agcgctgcgt | ctggcgccca | acgaacccgt  | atcgacccgc | gagcttagaa | acaggatttt | 27420 |
| tcccactctg | tatgctatat | ttcaacagag  | caggggccaa | gaacaagagc | tgaaaataaa | 27480 |
| aaacaggtct | ctgcgatccc | tcacccgcag  | ctgcctgtat | cacaaaagcg | aagatcagct | 27540 |
| tcggcgcacg | ctggaagacg | cggaggctct  | cttcagtaaa | tactgcgcgc | tgactcttaa | 27600 |
| ggactagttt | cgcgcccttt | ctcaaattta  | agcgcgaaaa | ctacgtcatc | tccagcggcc | 27660 |
| acacccggcg | ccagcacctg | ttgtcagcgc  | cattatgagc | aaggaaattc | ccacgccta  | 27720 |
| catgtggagt | taccagccac | aaatgggact  | tgcggtgga  | gctgccaag  | actactcaac | 27780 |
| ccgaataaac | tacatgagcg | cgggacccca  | catgatatcc | cgggtcaacg | gaatacgcgc | 27840 |
| ccaccgaaac | cgaattctcc | tggaacaggc  | ggctattacc | accacacctc | gtaataacct | 27900 |
| taatccccgt | agttggcccc | ctgccctggt  | gtaccaggaa | agtcccgctc | ccaccactgt | 27960 |
| ggtacttccc | agagacgccc | aggccgaagt  | tcagatgact | aactcagggg | cgcagcttgc | 28020 |
| gggaggcttt | cgtcacaggg | tgcggtcgcc  | cgggcagggt | ataactcacc | tgacaatcag | 28080 |
| agggcgaggt | attcagctca | acgacgagtc  | ggtgagctcc | tcgcttggtc | tccgtccgga | 28140 |
| cgggacattt | cagatcggcg | gcgccggccg  | ctcttcattc | acgcctcgtc | aggcaatcct | 28200 |
| aactctgcag | acctcgtcct | ctgagccgcg  | ctctggaggc | attggaactc | tgcaatttat | 28260 |
| tgaggagttt | gtgccatcgg | tctactttaa  | ccccttctcg | ggacctcccg | gccactatcc | 28320 |
| ggatcaattt | attcctaact | ttgacgcggt  | aaaggactcg | gcggacggct | acgactgaat | 28380 |
| gttaagtgga | gaggcagagc | aactgcgcct  | gaaacacctg | gtccactgtc | gccgccacaa | 28440 |
| gtgctttgcc | cgcgactccg | gtgagttttg  | ctactttgaa | ttgcccaggg | atcatatcga | 28500 |
| gggcccggcg | cacggcgtcc | ggcttaccgc  | ccagggagag | cttgcccgta | gcctgattcg | 28560 |
| ggagtttacc | cagcgccccc | tgctagttga  | gcgggacagg | ggaccctgtg | ttctcactgt | 28620 |
| gatttgcaac | tgctctaacc | ctggattaca  | tcaagatctt | tgttgccatc | tctgtgctga | 28680 |
| gtataataaa | tacagaaatt | aaaatatact  | ggggctccta | tcgccatcct | gtaaacgcca | 28740 |
| ccgtcttcac | ccgccaagc  | aaaccaaggc  | gaaccttacc | tggtactttt | aacatctctc | 28800 |
| cctctgtgat | ttacaacagt | ttcaaccag   | acggagtgag | tctacgagag | aacctctccg | 28860 |
| agctcagcta | ctccatcaga | aaaaacacca  | ccctccttac | ctgccgggaa | cgtacgagtg | 28920 |
| cgtcaccggc | cgctgcacca | cacctaccgc  | ctgaccgtaa | accagacttt | ttccggacag | 28980 |
| acctcaataa | ctctgtttac | cagaacagga  | ggtgagctta | gaaaaccctt | agggatttag | 29040 |
| gccaaaggcg | cagctactgt | ggggtttatg  | aacaattcaa | gcaactctac | gggctattct | 29100 |
| aattcaggtt | tctctagaat | cgggggttggg | gttattctct | gtcttgat   | tctctttatt | 29160 |
| cttatactaa | cgcttctctg | cctaaggctc  | gccgcctgct | gtgtgcacat | ttgcatttat | 29220 |
| tgtcagcttt | ttaaagcgtg | gggtcgccac  | ccaagatgat | taggtacata | atcctaggtt | 29280 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |             |            |            |             |       |
|------------|------------|-------------|------------|------------|-------------|-------|
| tactcacct  | tgcgtcagcc | cacggtacca  | cccaaaaggt | ggattttaag | gagccagcct  | 29340 |
| gtaatgttac | attcgcagct | gaagctaata  | agtgcaccac | tcttataaaa | tgcaccacag  | 29400 |
| aacatgaaaa | gctgcttatt | cgccacaaaa  | acaaaattgg | caagtatgct | gtttatgcta  | 29460 |
| tttggcagcc | aggtgacact | acagagtata  | atgttacagt | tttccagggt | aaaagtcata  | 29520 |
| aaacttttat | gtatactttt | ccattttatg  | aaatgtgcga | cattaccatg | tacatgagca  | 29580 |
| aacagtataa | gttgtggccc | ccacaaaatt  | gtgtggaaaa | cactggcact | ttctgctgca  | 29640 |
| ctgctatgct | aattacagtg | ctcgcttttg  | tctgtaccct | actctatatt | aaatacaaaa  | 29700 |
| gcagacgcag | ctttattgag | gaaaagaaaa  | tgccttaatt | tactaagtta | caaagctaata | 29760 |
| gtcaccacta | actgctttac | tcgctgcttg  | caaaacaaat | tcaaaaagtt | agcattataa  | 29820 |
| ttagaatagg | atttaaacc  | cccggtcatt  | tcctgctcaa | taccattccc | ctgaacaatt  | 29880 |
| gactctatgt | gggatatgct | ccagcgctac  | aaccttgaag | tcaggcttcc | tggatgtcag  | 29940 |
| catctgactt | tggccagcac | ctgtcccgcg  | gatttgttcc | agtccaacta | cagcgaccca  | 30000 |
| ccctaacaga | gatgaccaac | acaaccaacg  | cggccgccgc | taccggactt | acatctacca  | 30060 |
| caaatacacc | ccaagtttct | gcctttgtca  | ataactggga | taacttgggc | atgtggtggt  | 30120 |
| tctccatagc | gcttatgttt | gtatgcctta  | ttattatgtg | gctcatctgc | tgcctaaagc  | 30180 |
| gcaaacgcgc | ccgaccaccc | atctatagtc  | ccatcattgt | gctacacca  | aacaatgatg  | 30240 |
| gaatccatag | attggacgga | ctgaaacaca  | tgctcttttc | tcttacagta | tgattaaatg  | 30300 |
| agacatgatt | cctcgagttt | ttatattact  | gacccttggt | gcgctttttt | tgtgcgtgct  | 30360 |
| ccacattggc | tgcggtttct | cacatcgaag  | tagactgcat | tccagccttc | acagtctatt  | 30420 |
| tgctttacgg | atttgtcacc | ctcacgctca  | tctgcagcct | catcactgtg | gtcatcgctt  | 30480 |
| ttatccagtg | cattgactgg | gtctgtgtgc  | gctttgcata | tctcagacac | catccccagt  | 30540 |
| acagggacag | gactatagct | gagcttctta  | gaattcttta | attatgaaat | ttactgtgac  | 30600 |
| ttttctgctg | attatttgca | ccctatctgc  | gttttgttcc | ccgacctcca | agcctcaaag  | 30660 |
| acatatatca | tgcagattca | ctcgatatatg | gaatattcca | agttgctaca | atgaaaaaag  | 30720 |
| cgatctttcc | gaagcctggg | tatatgcaat  | catctctgtt | atggtgttct | gcagtaccat  | 30780 |
| cttagcccta | gctatatatc | cctaccttga  | cattggctgg | aacgcaatag | atgccatgaa  | 30840 |
| ccaccaact  | ttccccgcgc | ccgctatgct  | tccactgcaa | caagttgttg | ccggcggtt   | 30900 |
| tgtcccagcc | aatcagcctc | gcccaccttc  | tcccaccccc | actgaaatca | gctactttaa  | 30960 |
| tctaacagga | ggagatgact | gacaccctag  | atctagaaat | ggacggaatt | attacagagc  | 31020 |
| agcgcctgct | agaaagacgc | agggcagcgg  | ccgagcaaca | gcgcatgaat | caagagctcc  | 31080 |
| aagacatggg | taacttgcac | cagtgcaaaa  | ggggtatctt | ttgtctggta | aagcaggcca  | 31140 |
| aagtcaccta | cgacagtaat | accaccggac  | accgccttag | ctacaagttg | ccaaccaagc  | 31200 |
| gtcagaaatt | ggtggtcatg | gtggggagaaa | agcccattac | cataactcag | cactcggtag  | 31260 |
| aaaccgaagg | ctgcattcac | tcaccttgtc  | aaggacctga | ggatctctgc | acccttatta  | 31320 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |            |            |            |             |             |       |
|------------|------------|------------|------------|-------------|-------------|-------|
| agaccctgtg | cggtctcaaa | gatcttattc | cctttaacta | ataaaaaaaaa | ataataaagc  | 31380 |
| atcacttact | taaaatcagt | tagcaaattt | ctgtccagtt | tattcagcag  | cacctccttg  | 31440 |
| ccctcctccc | agctctggta | ttgcagcttc | ctcctggctg | caaactttct  | ccacaatcta  | 31500 |
| aatggaatgt | cagtttcctc | ctgttcctgt | ccatccgcac | ccactatctt  | catgttggtg  | 31560 |
| cagatgaagc | gcgcaagacc | gtctgaagat | accttcaacc | ccgtgtatcc  | atatgacacg  | 31620 |
| gaaaccggtc | ctccaactgt | gccttttctt | actcctccct | ttgtatcccc  | caatggggtt  | 31680 |
| caagagagtc | cccctggggg | actctctttg | cgcttatccg | aacctctagt  | tacctccaat  | 31740 |
| ggcatgcttg | cgctcaaaat | gggcaacggc | ctctctctgg | acgaggccgg  | caaccttacc  | 31800 |
| tcccaaaatg | taaccactgt | gagcccacct | ctcaaaaaaa | ccaagtcaaa  | cataaacctg  | 31860 |
| gaaatatctg | caccctcac  | agttacctca | gaagccctaa | ctgtggctgc  | cgccgcacct  | 31920 |
| ctaattggtc | cgggcaacac | actcaccatg | caatcacagg | ccccgctaac  | cgtgcacgac  | 31980 |
| tccaaactta | gcattgccac | ccaaggaccc | ctcacagtgt | cagaaggaaa  | gctagccctg  | 32040 |
| caaacatcag | gccccctcac | caccaccgat | agcagtacc  | ttactatcac  | tgcctcacc   | 32100 |
| cctctaacta | ctgccactgg | tagcttgggc | attgacttga | aagagcccat  | ttatacacia  | 32160 |
| aatggaaaac | taggactaaa | gtacggggct | cctttgcatg | taacagacga  | cctaaacact  | 32220 |
| ttgaccgtag | caactggtcc | aggtgtgact | attaataata | cttccttgca  | aactaaagtt  | 32280 |
| actggagcct | tgggttttga | ttcacaaggc | aatatgcaac | ttaatgtagc  | aggaggacta  | 32340 |
| aggattgatt | ctcaaaacag | acgccttata | cttgatgtta | gttatccgtt  | tgatgctcaa  | 32400 |
| aaccaactaa | atctaagact | aggacagggc | cctcttttta | taaactcagc  | ccacaacttg  | 32460 |
| gatattaact | acaacaaagg | cctttacttg | tttacagctt | caaacaattc  | caaaaagctt  | 32520 |
| gaggttaacc | taagcactgc | caaggggttg | atgtttgacg | ctacagccat  | agccattaat  | 32580 |
| gcaggagatg | ggcttgaatt | tggttcacct | aatgcaccaa | acacaaatcc  | cctcaaaaca  | 32640 |
| aaaattggcc | atggcctaga | atttgattca | aacaaggcta | tggttcctaa  | actaggaact  | 32700 |
| ggccttagtt | ttgacagcac | aggtgccatt | acagtaggaa | acaaaaataa  | tgataagcta  | 32760 |
| actttgtgga | ccacaccagc | tccatctcct | aactgtagac | taaatgcaga  | gaaagatgct  | 32820 |
| aaactcactt | tggctttaac | aaaatgtggc | agtcaaatac | ttgctacagt  | ttcagttttg  | 32880 |
| gctgttaaag | gcagtttggc | tccaatatct | ggaacagttc | aaagtgtca   | tcttattata  | 32940 |
| agatttgacg | aaaatggagt | gctactaaac | aattccttcc | tggaccaga   | atattggaac  | 33000 |
| tttagaaatg | gagatcttac | tgaaggcaca | gcctatacaa | acgctgttgg  | atttatgcct  | 33060 |
| aacctatcag | cttatccaaa | atctcacggt | aaaactgcca | aaagtaacat  | tgtcagtcaa  | 33120 |
| gtttacttaa | acggagacaa | aactaaacct | gtaacactaa | ccattacact  | aaacggtaca  | 33180 |
| caggaaacag | gagacacaa  | tccaagtgc  | tactctatgt | cattttcatg  | ggactgggtct | 33240 |
| ggccacaact | acattaatga | aatatttgcc | acatcctctt | acactttttc  | atacattgcc  | 33300 |
| caagaataaa | gaatcgtttg | tgttatgttt | caacgtgttt | atttttcaat  | tgcagaaaat  | 33360 |

## 3182\_043PC02\_SequenceListing\_ascii

|            |             |             |             |             |             |            |       |
|------------|-------------|-------------|-------------|-------------|-------------|------------|-------|
| ttcaagtc   | cat         | ttttcattca  | gtagtatagc  | cccaccacca  | catagcttat  | acagatcacc | 33420 |
| gtacctta   | aat         | caaactcaca  | gaaccttagt  | attcaacctg  | ccacctccct  | cccaacacac | 33480 |
| agagtacaca | gtccttttctc | cccggctggc  | cttaaaaagc  | atcatatcat  | gggtaacaga  |            | 33540 |
| catattctta | ggtgtttatat | tccacacggt  | ttcctgtcga  | gccaaacgct  | catcagtgat  |            | 33600 |
| attaataaac | tccccgggca  | gctcacttaa  | gttcattgtcg | ctgtccagct  | gctgagccac  |            | 33660 |
| aggctgctgt | ccaacttgcg  | gttgcttaac  | gggcggcgaa  | ggagaagtcc  | acgcctacat  |            | 33720 |
| gggggtagag | tcataatcgt  | gcatcaggat  | agggcggtgg  | tgctgcagca  | gcgcgcgaat  |            | 33780 |
| aaactgctgc | cgccgccgct  | ccgtcctgca  | ggaatacaac  | atggcagtg   | gttctctcagc |            | 33840 |
| gatgattcgc | accgcccgc   | gcataaggcg  | ccttgtcctc  | cgggcacagc  | agcgcaccct  |            | 33900 |
| gatctcactt | aaatcagcac  | agtaactgca  | gcacagcacc  | acaatattgt  | tcaaaatccc  |            | 33960 |
| acagtgaag  | gcgctgtatc  | caaagctcat  | ggcggggacc  | acagaacca   | cgtggccatc  |            | 34020 |
| ataccacaag | cgcaggtaga  | ttaagtggcg  | acccctcata  | aacacgctgg  | acataaacat  |            | 34080 |
| tacctctttt | ggcatgttgt  | aattcaccac  | ctcccggtag  | catataaacc  | tctgattaaa  |            | 34140 |
| catggcgcca | tccaccacca  | tcctaaacca  | gctggccaaa  | acctgcccgc  | cggctataca  |            | 34200 |
| ctgcagggaa | ccgggactgg  | aacaatgaca  | gtggagagcc  | caggactcgt  | aaccatggat  |            | 34260 |
| catcatgctc | gtcatgatat  | caatgttggc  | acaacacagg  | cacacgtgca  | tacacttcct  |            | 34320 |
| caggattaca | agctcctccc  | gcgttagaac  | catatcccag  | ggaacaaccc  | attcctgaat  |            | 34380 |
| cagcgtaa   | aat         | cccacactgc  | aggggaagacc | tcgcacgtaa  | ctcacgttgt  | gcattgtcaa | 34440 |
| agtgttacat | tcgggcagca  | gcggatgatc  | ctccagtagt  | gtagcgcg    | ggg         | tttctgtctc | 34500 |
| aaaaggaggt | agacgatccc  | tactgtacgg  | agtgcgccga  | gacaaccgag  | atcgtgttgg  |            | 34560 |
| tcgtagtg   | ctc         | atgccaaatg  | gaacgccgga  | cgtagtcata  | tttcctgaag  | caaaaccagg | 34620 |
| tgcgggcg   | tgt         | acaaacagat  | ctgcgtctcc  | ggtctcgccg  | cttagatcgc  | tctgtgtagt | 34680 |
| agttgtagta | tatccactct  | ctcaaagcat  | ccaggcgccc  | cctggcttcg  | ggttctatgt  |            | 34740 |
| aaactccttc | atgcgccgct  | gccctgataa  | catccaccac  | cgcagaataa  | gccacacca   |            | 34800 |
| gccaacctac | acattcgttc  | tgcgagtcac  | acacgggagg  | agcgggaaga  | gctggaagaa  |            | 34860 |
| ccatgttttt | ttttttattc  | caaaagatta  | tccaaaacct  | caaaatgaag  | atctattaag  |            | 34920 |
| tgaacgcgct | cccctccggt  | ggcgtgggtca | aactctacag  | caaagaaca   | gataatggca  |            | 34980 |
| tttgtaagat | gttgcacaa   | t           | ggcttccaaa  | aggcaaacgg  | ccctcacgtc  | caagtggacg | 35040 |
| taaaggctaa | acccttcagg  | gtgaatctcc  | tctataaaca  | ttccagcacc  | ttcaaccatg  |            | 35100 |
| cccaaataat | tctcatctcg  | ccaccttctc  | aatatatctc  | taagcaaatac | ccgaatatta  |            | 35160 |
| agtccggcca | ttgtaaaaaat | ctgctccaga  | gcgccctcca  | ccttcagcct  | caagcagcga  |            | 35220 |
| atcatgattg | caaaaattca  | ggttcctcac  | agacctgtat  | aagattcaaa  | agcgggaacat |            | 35280 |
| taacaaaaat | accgcgatcc  | cgtaggtccc  | ttcgcagggc  | cagctgaaca  | taatcgtgca  |            | 35340 |
| ggtctgcacg | gaccagcgcg  | gccacttccc  | cgccaggaac  | catgacaaaa  | gaaccacac   |            | 35400 |

# 3182\_043PC02\_SequenceListing\_ascii

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tgattatgac acgcatactc ggagctatgc taaccagcgt agccccgatg taagcttggt   | 35460 |
| gcatggggcgg cgatataaaa tgcaagggtgc tgctcaaaaa atcaggcaaa gcctcgcgca | 35520 |
| aaaaagaaaag cacatcgtag tcatgctcat gcagataaag gcaggtaagc tccggaacca  | 35580 |
| ccacagaaaa agacaccatt tttctctcaa acatgtctgc gggtttctgc ataaacacaa   | 35640 |
| aataaaataa caaaaaaaca tttaaacatt agaagcctgt cttacaacag gaaaaacaac   | 35700 |
| ccttataagc ataagacgga ctacggccat gccggcgtga ccgtaaaaaa actgggtcacc  | 35760 |
| gtgattaaaa agcaccaccg acagctcctc ggtcatgtcc ggagtcataa tgtaagactc   | 35820 |
| ggtaaacaca tcaggttgat tcacatcggt cagtgcataa aagcgaccga aatagcccgg   | 35880 |
| gggaatacat acccgaggc gtagagacaa cattacagcc cccataggag gtataacaaa    | 35940 |
| attaatagga gagaaaaaca cataaacacc tgaaaaacc tcctgcctag gcaaaatagc    | 36000 |
| accctcccgc tccagaacaa catacagcgc ttccacagcg gcagccataa cagtcagcct   | 36060 |
| taccagtaaa aaagaaaacc tattaataaaa acaccactcg acacggcacc agtcaatca   | 36120 |
| gtcacagtgt aaaaaagggc caagtgcaga gcgagtatat ataggactaa aaaatgacgt   | 36180 |
| aacggttaaa gtccacaaaa aacacccaga aaaccgcacg cgaacctacg cccagaaacg   | 36240 |
| aaagccaaaa aaccacaaac ttcctcaa at cgctacttcc gttttccac gttacgtcac   | 36300 |
| ttcccat tttt aagaaaacta caattcccaa cacatacaag ttactccgcc ctaaaaccta | 36360 |
| cgtcacccgc cccgttccca cgtcccgcg cagtcacaa actccacccc ctcattatca     | 36420 |
| tattggcttc aatccaaaat aaggatatatt attgatgatg                        | 36460 |

<210> 22  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Endothelial Cell-Specific Enhancer Element

<400> 22  
 ggtgactttg cttctggag 19

<210> 23  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Endothelial Cell-Specific Enhancer Element

<400> 23  
 ctccagaagc aaagtcacc 19

<210> 24  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Endothelial Cell-Specific Enhancer Element

<400> 24

gtacttcata cttttcatt

19

<210> 25

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Endothelial Cell-Specific Enhancer Element

<400> 25

aatgaaaagt atgaagtac

19

<210> 26

<211> 6

<212> DNA

<213> Artificial Sequence

<220>

<223> Hypoxia Response element

<400> 26

gcacgt

6

<210> 27

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> peptide linker

<400> 27

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

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser  
20 25 30

Gly Gly Gly Ser Gly Gly Gly Ser  
35 40