Gene: APC - Sequence: NG_008481.4
Transcript: NM_000038.4 - Protein: NP_000029.2
Date : February 26, 2015

1^{st} line: Base numbering. Full stops for intronic +/- 5, 10, 15...
2^{nd} line: Base sequence. lower case Introns, upper case Exons
3^{rd} line: Amino acid sequence. Printed on FIRST base of codon
4^{th} line: Amino acid numbering. Numbered on 1^{st} and increments of 10

```
Exon 2 | Start: 50339 | End: 50405 | Length: 66

.    .    .    .    .    .    .    .    .    .    .    .
ttgtgctaatccttctgccctgcggacctcccccgactctttactatgcgtgtcaactgc

.    .    .    .    .    .    .    .    .    .    .    .
catcaacttccttgcttgctggggactggggccgcgagggcatacccccgaggggtacgg

.    .    .    .    .    .    .    .    .    .    .    .
ggctagggctaggcaggctgtgcggttgggcggggccctgtgccccactgcggagtgcgg

.    .    .    .    .    .    .    .    .    .    .    .
gtcgggaagcggagagagaagcagctgtgtaatccgctggatgcggaccagggcgctccc

.    .    .    .    .    .    .    .    .    .    .    .
cattcccgtcgggagcccgccgattggctgggtgtgggcgcacgtgaccgacatgtggct

      |-79      |-69      |-59      |-49      |-39      |-29
GTATTGGTGCAGCCCGCCAGGGTGTCACTGGAGACAGAATGGAGGTGCTGCCGGACTCGG

      |-19 .    .    .    .    .    .    .    .    .    .
AAATGGGgtaggtgctggagccaccatggccaggcttgctgcgggggggaggggggaaggt

 .    .    .    .    .    .    .    .    .    .    .    .
ggttttccctcgcactgtcttaaaccgatggcctttccttggcacagggtccactgcagc

 .    .    .    .    .    .    .    .    .    .    .    .
atgccaaacgaggaggcaggggcgtcgtccccccgccccccactgcagcactggagatgg

 .    .    .    .    .    .    .    .    .    .    .    .
atttcctgtacttcggatccagggtttttgacagaagaggaagaaggggggaggggtagaa

 .    .    .    .    .    .    .    .    .    .    .    .
gtgttaaggggagtctgctgagaaaagctgtttttgaagccagaaggggttttttgttttt

 .    .
ataatgc
```

Exon 4 | Start: 67353 | End: 67505 | Length: 152

```
.    .    .    .    .    .    .    .    .    .    .    .
ccttgaagaaattattacttgatagaaagtttaatccatctgtgagaaggcaaatgtatt

.    .    .    .    .    .    .    .    .    .    .    .
cagacacaactaaagttctctcttctattttaatttcatttatcttgaactaagactcca

.    .    .    .    .    .    .    .    .    .    .    .
ctgtttcatcctcttagatgctgctacttgaacaatattgttttgagaccaaaaactagc

.    .    .    .    .    .    .    .    .    .    .    .
atattaacacaattcttcttaaacgtcttaagagttttgtttcctttacccctttcttta

.    .    .    .    .    .    .    .    .    .    .    .
aaaacaagcagccactaaatttttttagtagtgaatttcaaaatccttttttaaccttatag

         |-9      |1        |11       |21       |31       |41
GTCCAAGGGTAGCCAAGGATGGCTGCAGCTTCATATGATCAGTTGTTAAAGCAAGTTGAG
                 M  A  A  A  S  Y  D  Q  L  L  K  Q  V  E
                 |1                          |11

        |51       |61       |71       |81       |91       |101
GCACTGAAGATGGAGAACTCAAATCTTCGACAAGAGCTAGAAGATAATTCCAATCATCTT
A  L  K  M  E  N  S  N  L  R  Q  E  L  E  D  N  S  N  H  L
                 |21                         |31

        |111      |121      |131    .    .    .    .    .
ACAAAACTGGAAACTGAGGCATCTAATATGAAGgtatcaagactgtgacttttaattgta
T  K  L  E  T  E  A  S  N  M  K
                 |41

  .    .    .    .    .    .    .    .    .    .    .    .
gtttatccatttttattcagtattccctcttgtaaacttgaggtaagacactttacttaa

  .    .    .    .    .    .    .    .    .    .    .    .
aagtgtattttaaattaagcaataatatgtaaactctttcttgcaaaagttagcatttat

  .    .    .    .    .    .    .    .    .    .    .    .
atttttaaataagatatattgaattcattcagtgaatcatataaagaaaataagtgtaaa

  .    .    .    .    .    .    .    .    .    .    .    .
actccaatggctagttagttcttagttctttttaagattaaagagaagagaccaaatata

  .    .    .    .    .    .    .
gcatcactgtactgaggcaaggttttctgtgta
```

Exon 5 | Start: 78806 | End: 78890 | Length: 84

```
.    .    .    .    .    .    .    .    .    .    .    .
ctgaaaaatgagaataatttgcattgttggtttttaggtttgaaataatgaatgtatctt

.    .    .    .    .    .    .    .    .    .    .    .
aaatgtgtttctaataccttgcacagagactccccataatcaccattatctcaaaatatc

.    .    .    .    .    .    .    .    .    .    .    .
actattattatttggccatgatttatttattaataatgaataataggtaatatatataag

.    .    .    .    .    .    .    .    .    .    .    .
gtgcgtgctttgagagtgatctgaatttttttctcagcatacttaaatgtcaagaaatac

.    .    .    .    .    .    .    .    .    .    .    .
agaatcatgtcttgaagttatttagaatttcatgttaatatattgtgttctttttaacag

     |141      |151      |161      |171      |181      |191
GAAGTACTTAAACAACTACAAGGAAGTATTGAAGATGAAGCTATGGCTTCTTCTGGACAG
E  V  L  K  Q  L  Q  G  S  I  E  D  E  A  M  A  S  S  G  Q
               |51                          |61

     |201      |211          .    .    .    .    .    .    .
ATTGATTTATTAGAGCGTCTTAAAGgtagattttaaaaaggtgttttaaaataatttttt
I  D  L  L  E  R  L  K  E
               |71

    .    .    .    .    .    .    .    .    .    .    .    .
aagctcaaattgtcatctttaggtgtgtagatccaagtacagcttctctcgatttgggtg

    .    .    .    .    .    .    .    .    .    .    .    .
ttggtatcagttttcttggtatgttagccttaccctcaggatgtaattgttaaagtacaa

    .    .    .    .    .    .    .    .    .    .    .    .
ataaataaaaaatgtatttgtgtgtcatttcttcagttaaacatttaactggctttgaat

    .    .    .    .    .    .    .    .    .    .    .    .
gaactattttaaatccctcccttaaataatttcggctctttgtaaagcttgttgctatt

    .    .    .    .    .
ctgccagtcactaaatagggcttta
```

```
Exon 6 | Start: 79669 | End: 79870 | Length: 201

.    .    .    .    .    .    .    .    .    .    .    .
gagaaagtgcttgataataattgaagccagacagagaaattacttttggattctaaaata

.    .    .    .    .    .    .    .    .    .    .    .
ttatttagaggaagtctaaggaagtacattttatctaattttcctttaacacactcctta

.    .    .    .    .    .    .    .    .    .    .    .
tttttaccctgacccaagtggacttttcagggaaagtcctaaataatttttgttttcagt

.    .    .    .    .    .    .    .    .    .    .    .
catgtatatttgtggttaaaatgtaaacctaatatttcactttaaaataatatataacatta

.    .    .    .    .    .    .    .    .    .    .    .
agaatattttagactgcttaaagcaattgttgtataaaaacttgtttctattttatttag

|221      |231      |241      |251      |261      |271
AGCTTAACTTAGATAGCAGTAATTTCCCTGGAGTAAAACTGCGGTCAAAAATGTCCCTCC
  L  N  L  D  S  S  N  F  P  G  V  K  L  R  S  K  M  S  L  R
                    |81                       |91

|281      |291      |301      |311      |321      |331
GTTCTTATGGAAGCCGGGAAGGATCTGTATCAAGCCGTTCTGGAGAGTGCAGTCCTGTTC
  S  Y  G  S  R  E  G  S  V  S  S  R  S  G  E  C  S  P  V  P
                    |101                      |111

|341      |351      |361      |371      |381      |391
CTATGGGTTCATTTCCAAGAAGAGGGTTTGTAAATGGAAGCAGAGAAAGTACTGGATATT
  M  G  S  F  P  R  R  G  F  V  N  G  S  R  E  S  T  G  Y  L
                    |121                      |131

|401      |411      |421  .    .    .    .    .    .    .
TAGAAGAACTTGAGAAAGAGAGgtaacttttcttcatatagtaaacattgccttgtgtac
  E  E  L  E  K  E  R
                    |141

 .    .    .    .    .    .    .    .    .    .    .    .
tccagtttattgttattttgtaatataatatttaaattgtgaatttatagtaggtgatag

 .    .    .    .    .    .    .    .    .    .    .    .
ctaacacttagagcattttgcatttttaaactcaaagatagcatgttattgattgcactt

 .    .    .    .    .    .    .    .    .    .    .    .
acattaaatctaaaaatataaacaaggccgtttcctgggattctgaagacctattttgtc
```

. . . . . .
acttatttgttttttgtttgttttttggggtttatttgagacagggtgtcactgtgt

. . . . .
ctcccaggctggagtgtagtgg

```
Exon 7 | Start: 88109 | End: 88217 | Length: 108

.    .    .    .    .    .    .    .    .    .    .    .
acctatcattatattcttagactataaatatgaagaaagcctttggtgaagtgtaagtat

.    .    .    .    .    .    .    .    .    .    .    .
tcttttaaggatgattaccagtttatttagaaaaaaagttctttttaatactctaatttt

.    .    .    .    .    .    .    .    .    .    .    .
aatgactgtaatattctaagtcctacctttaaaaattgaaatcaatgtaaatttttgag

.    .    .    .    .    .    .    .    .    .    .    .
taattcattattagcactttaggtagagaagtttgcaataacaactgatgtaagtattgc

.    .    .    .    .    .    .    .    .    .    .    .
tcttctgcagtctttattagcattgtttaaacgtacctttttttaaaaaaaaaaaaatag

        |431      |441      |451      |461      |471      |481
GTCATTGCTTCTTGCTGATCTTGACAAAGAAGAAAAGGAAAAAGACTGGTATTACGCTCA
 S  L  L  L  A  D  L  D  K  E  E  K  E  K  D  W  Y  Y  A  Q
                           |151                           |161

        |491      |501      |511      |521      |531 .    .
ACTTCAGAATCTCACTAAAAGAATAGATAGTCTTCCTTTAACTGAAAATgtaagtaactt
 L  Q  N  L  T  K  R  I  D  S  L  P  L  T  E  N
                           |171

   .    .    .    .    .    .    .    .    .    .    .    .
ggcagtacaacttatttgaaactttaataacttgatattttaaagtacctaggtaatcca

   .    .    .    .    .    .    .    .    .    .    .    .
ttaaaattcaggataactgaatttatagttatttgtaaattgcaatatgttttacccaac

   .    .    .    .    .    .    .    .    .    .    .    .
tttaggcctgaatatataatagttaatgaatttttgttggtaaagatgataaaactttat

   .    .    .    .    .    .    .    .    .    .    .    .
tgtgctcaaatgtttttatttaaagctcttatttagaaaatctataaagtttgaattctag

   .    .    .    .    .    .    .    .    .    .
aggacctcagggttcaactaggcaactagtttttttaactccgtgtattg
```

```
Exon 8 | Start: 93270 | End: 93383 | Length: 113

.    .    .    .    .    .    .    .    .    .    .    .
tttaacctcactctaactggaccaattatatattttaagtgaaataggccaatctaatta

.    .    .    .    .    .    .    .    .    .    .    .
aagccacttgtgactttggcaaataagtgtttgaattccacgtcacatcagggatccaga

.    .    .    .    .    .    .    .    .    .    .    .
ttgagtctgacacctataatcaaatttaaacactccttggagtaaaaaataattttctca

.    .    .    .    .    .    .    .    .    .    .    .
tgcaccatgactgacgtatttgcttattcattttctttattggttcttatatgctttttt

.    .    .    .    .    .    .    .    .    .    .    .
gcttttactgattaacgtaaatacaagatattgatacttttttattatttgtggttttag

         |541      |551      |561      |571      |581      |591
TTTTCCTTACAAACAGATATGACCAGAAGGCAATTGGAATATGAAGCAAGGCAAATCAGA
F  S  L  Q  T  D  M  T  R  R  Q  L  E  Y  E  A  R  Q  I  R
         |181                          |191

         |601      |611      |621      |631      |641      .
GTTGCGATGGAAGAACAACTAGGTACCTGCCAGGATATGGAAAAACGAGCACAGgtaagt
V  A  M  E  E  Q  L  G  T  C  Q  D  M  E  K  R  A  Q
         |201                          |211

   .    .    .    .    .    .    .    .    .    .    .    .
tacttgtttctaagtgataaaacagcgaagagctattaggaataaaatgaattacagctc

   .    .    .    .    .    .    .    .    .    .    .    .
tgttaatattgattaaattttattaaagacataaggctgtgtttattttggctctatttc

   .    .    .    .    .    .    .    .    .    .    .    .
aaaataagatttatcatggctgctgagcaacataatcaatattcacatagttgtgtcttt

   .    .    .    .    .    .    .    .    .    .    .    .
accatattcatttcccctggtactgttctgttctgccttggaattataagggagagacag

   .    .    .    .    .    .    .    .    .    .    .
agttagatggtggtcttccggtagctaatgactagcttcagttctcctttgaaa
```

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Exon 9 | Start: 104926 | End: 105009 | Length: 83

.    .    .    .    .    .    .    .    .    .    .    .
tgaggcaaaagaatcacttgaacccggaaggcggaggttgcggtgagctgagattatgcc

.    .    .    .    .    .    .    .    .    .    .    .
actgcactccagccagggcaacagagcgagactctgtctcgaaaaaaaaagaaaaaaga

.    .    .    .    .    .    .    .    .    .    .    .
aaagaaaaattgaactgaccccaatttgttattaaagggtgaatatatttatatgtctag

.    .    .    .    .    .    .    .    .    .    .    .
ctttttaaatgagaatgatttgacataaccctgagcttttaagtggtagccatagtatga

.    .    .    .    .    .    .    .    .    .    .    .
ttatttctattaatattattaataaaaacataactaattaggtttcttgttttattttag

     |651      |661      |671      |681      |691      |701
CGAAGAATAGCCAGAATTCAGCAAATCGAAAAGGACATACTTCGTATACGACAGCTTTTA
R  R  I  A  R  I  Q  Q  I  E  K  D  I  L  R  I  R  Q  L  L
               |221                          |231

     |711      |721         .    .    .    .    .    .    .
CAGTCCCAAGCAACAGAAGCAGAGgttagtaaattgcctttcttgtttgtgggtataaaa
Q  S  Q  A  T  E  A  E
               |241

   .    .    .    .    .    .    .    .    .    .    .    .
ataggtagttattctgagaaaagaaaacatgtataatttaatgtgacaccattgaaatat

   .    .    .    .    .    .    .    .    .    .    .    .
agatgttctttcagagaatttaaataccgtaatttttttcgtgaaattaaattatcaaag

   .    .    .    .    .    .    .    .    .    .    .    .
atttggactattttgattttatctaacttttaggcagttaaaatttataaaactgtaaat

   .    .    .    .    .    .    .    .    .    .    .    .
atagataccttactttagctgtcagtttacatataatcaaatagttaacttaatttggct

   .    .    .    .    .
actatccagtaagtaaacttttttt
```

```
Exon 10 | Start: 113759 | End: 113863 | Length: 104

.    .    .    .    .    .    .    .    .    .    .    .
ggttatgttcctgatagtaatgtgagcgcagctggtagaggatggcattcctgtgagtct

.    .    .    .    .    .    .    .    .    .    .    .
cagaaaatcctttgtctcgtgcagctctaatgctcaagggacacacttcactttcccctt

.    .    .    .    .    .    .    .    .    .    .    .
accgagatagtcgaccgccaatcgtactggaggttatgaagtgtaatacacagttccatg

.    .    .    .    .    .    .    .    .    .    .    .
cctttatcagtctgtataattgatgcattcagagctttaaagcaaaaaaagaaaaaaagc

.    .    .    .    .    .    .    .    .    .    .    .
cttgggctaagaaagcctacaccatttttgcatgtactgatgttaactccatcttaacag

 |731      |741      |751      |761      |771      |781
AGGTCATCTCAGAACAAGCATGAAACCGGCTCACATGATGCTGAGCGGCAGAATGAAGGT
R  S  S  Q  N  K  H  E  T  G  S  H  D  A  E  R  Q  N  E  G
                    |251                          |261

 |791      |801      |811      |821      |831    .    .    .
CAAGGAGTGGGAGAAATCAACATGGCAACTTCTGGTAATGGTCAGgtaaataaattattt
Q  G  V  G  E  I  N  M  A  T  S  G  N  G  Q
                    |271

    .    .    .    .    .    .    .    .    .    .    .    .
tatcatatttttaaaattatttaaatatcagaaaagtatgaagcaagatggttctaaga

    .    .    .    .    .    .    .    .    .    .    .    .
atgatctataaatcttacctattttcttagtcctgaatgcatatttccagaagcattcag

    .    .    .    .    .    .    .    .    .    .    .    .
taccaatgtgctgtcatttctctttattatatcagcaataatgctgtaaggattttctag

    .    .    .    .    .    .    .    .    .    .    .    .
atctatttctatagctatagattgtgtgtttatgttttagtctaaaatgattgtgagtag

    .    .    .    .    .    .    .    .    .
ttttttttaataactctaagctgcattttgattatgtatatgatt
```

```
Exon 11 | Start: 127975 | End: 128073 | Length: 98

.    .    .    .    .    .    .    .    .    .    .    .
tggttttatttatttagatctatgaaaaattactaccctagaatttcttcagtctttggt

.    .    .    .    .    .    .    .    .    .    .    .
taagtccattctgcagtttaatgctcatatgcaagaaactctcttttctttagtttttct

.    .    .    .    .    .    .    .    .    .    .    .
ctaaaacatacttagtaagcgtataggtaaaaaatattttgaacagttataatggtcata

.    .    .    .    .    .    .    .    .    .    .    .
cttttatgatgtatttaattgtttatcatacagacacttcatttggagtaccttaacatg

.    .    .    .    .    .    .    .    .    .    .    .
atgttatctgtatttacctatagtctaaattataccatctataatgtgcttaatttttag

      |841      |851      |861      |871      |881      |891
GGTTCAACTACACGAATGGACCATGAAACAGCCAGTGTTTTGAGTTCTAGTAGCACACAC
G  S  T  T  R  M  D  H  E  T  A  S  V  L  S  S  S  S  T  H
      |281                         |291

      |901      |911      |921      |931   .    .    .    .
TCTGCACCTCGAAGGCTGACAAGTCATCTGGGAACCAAGgtaacagaagattacaaaccc
S  A  P  R  R  L  T  S  H  L  G  T  K
      |301                         |311

   .    .    .    .    .    .    .    .    .    .    .    .
tggtcactaatgccatgactactttgctaagacattcttggccaggtgcagtggctcaca

   .    .    .    .    .    .    .    .    .    .    .    .
cctgtaatcccagcattttgggaggccaaggcaggtggatcacttgaggccaggagttca

   .    .    .    .    .    .    .    .    .    .    .    .
agaccagcctgggcaacgtggcaaaaccccatctctactaaaaatacaaaaatttagcca

   .    .    .    .    .    .    .    .    .    .    .    .
gtgtggtggcacacacctgtggtcccagctactcaggaggctgaggcatgagaatagttg

   .    .    .    .    .    .    .    .
gaacccaggaggcagaggttgcagtgagctgagattaca
```

```
Exon 12 | Start: 131446 | End: 131824 | Length: 378

.    .    .    .    .    .    .    .    .    .    .    .
aggcaaacagcactaacagtttgttagtgagtatgcaaaaacctacttttgcttttaata

.    .    .    .    .    .    .    .    .    .    .    .
ctgtatattaccactcatactatttactcacataaacaaattggtgatgatacatagatt

.    .    .    .    .    .    .    .    .    .    .    .
ttgaaataacactgattacttcatcctggaaaggttttccggtttttgtttttttttg

.    .    .    .    .    .    .    .    .    .    .    .
gcgggggggttgttttgttttttttagagttatagtaaatatcccattcatcacttaatt

.    .    .    .    .    .    .    .    .    .    .    .
ggtttttggctttggatattaaagtcgtaattttgtttctaaactcatttggcccacag

       |941      |951      |961      |971      |981      |991
GTGGAAATGGTGTATTCATTGTTGTCAATGCTTGGTACTCATGATAAGGATGATATGTCG
V  E  M  V  Y  S  L  L  S  M  L  G  T  H  D  K  D  D  M  S
                          |321                          |331

       |1001     |1011     |1021     |1031     |1041     |1051
CGAACTTTGCTAGCTATGTCTAGCTCCCAAGACAGCTGTATATCCATGCGACAGTCTGGA
R  T  L  L  A  M  S  S  S  Q  D  S  C  I  S  M  R  Q  S  G
                          |341                          |351

       |1061     |1071     |1081     |1091     |1101     |1111
TGTCTTCCTCTCCTCATCCAGCTTTTACATGGCAATGACAAAGACTCTGTATTGTTGGGA
C  L  P  L  L  I  Q  L  L  H  G  N  D  K  D  S  V  L  L  G
                          |361                          |371

       |1121     |1131     |1141     |1151     |1161     |1171
AATTCCCGGGGCAGTAAAGAGGCTCGGGCCAGGGCCAGTGCAGCACTCCACAACATCATT
N  S  R  G  S  K  E  A  R  A  R  A  S  A  A  L  H  N  I  I
                          |381                          |391

       |1181     |1191     |1201     |1211     |1221     |1231
CACTCACAGCCTGATGACAAGAGAGGCAGGCGTGAAATCCGAGTCCTTCATCTTTTGGAA
H  S  Q  P  D  D  K  R  G  R  R  E  I  R  V  L  H  L  L  E
                          |401                          |411

       |1241     |1251     |1261     |1271     |1281     |1291
CAGATACGCGCTTACTGTGAAACCTGTTGGGAGTGGCAGGAAGCTCATGAACCAGGCATG
Q  I  R  A  Y  C  E  T  C  W  E  W  Q  E  A  H  E  P  G  M
                          |421                          |431
```

```
       |1301     |1311 .    .    .    .    .    .    .    .
GACCAGGACAAAAATCCAAgtatgttctctatagtgtacatcgtagtgcatgtttcaaag
D  Q  D  K  N  P  M

   .    .    .    .    .    .    .    .    .    .    .    .
caaatgtgaaatttttaaacagaaaacatgtttagttaatatgctgtctttatgactaag

   .    .    .    .    .    .    .    .    .    .    .    .
aggagaaaattcatatcagccatttgtgctactcatatttaaaagattaagtctgtattt

   .    .    .    .    .    .    .    .    .    .    .    .
ccctagaaaaatttagcaaaggaaaatgttatgtgcactactataagaacagtaagtcaa

   .    .    .    .    .    .    .    .    .    .    .    .
gagaaatttatacaatcatagcatagtagggccttagtagagctagaaagaacttgagca

   .    .    .    .
attatgttgcccatctttc
```

```
Exon 13 | Start: 134376 | End: 134471 | Length: 95

.    .    .    .    .    .    .    .    .    .    .    .
caacataattttaagttattagctatatgagtaatagcataaacctcctagacttattct

.    .    .    .    .    .    .    .    .    .    .    .
aagagacttagtcaagggcagatgagtggtaaacatttttatggaaacaaatccctttat

.    .    .    .    .    .    .    .    .    .    .    .
tcctatttttgttccacatttgtagtatttattcatcctttcagcaaatatttgttgat

.    .    .    .    .    .    .    .    .    .    .    .
ccactaaaattccgtgaattagggttatattagtgatccctgcatatttttaaagtacaa

.    .    .    .    .    .    .    .    .    .    .    .
taaacatcattgctcttcaaataacaaagcattatggtttatgttgattttatttttcag

        |1321     |1331     |1341     |1351     |1361     |1371
TGCCAGCTCCTGTTGAACATCAGATCTGTCCTGCTGTGTGTGTTCTAATGAAACTTTCAT
  P   A   P   V   E   H   Q   I   C   P   A   V   C   V   L   M   K   L   S   F
        |441                          |451

        |1381     |1391     |1401       .    .    .    .
TTGATGAAGAGCATAGACATGCAATGAATGAACTAGgtaagacaaaaatgtttttaatg
  D   E   E   H   R   H   A   M   N   E   L   G
        |461

.    .    .    .    .    .    .    .    .    .    .    .
acatagacaattactggtggatttttaaatcatggtagaaattcagtatagtaaataaag

.    .    .    .    .    .    .    .    .    .    .    .
atttttaatcattgatgaattaggatataaggccaccaacttctgttatcagctgcttcc

.    .    .    .    .    .    .    .    .    .    .    .
tctgtgtagcaaaaaattgtaccctggtttccagcatagaaaggatcctgaatcacagaa

.    .    .    .    .    .    .    .    .    .    .    .
actgctaccctgtcataagctaacttttttcaaaatcgaagccggagattgaaaaaaaatg

.    .    .    .    .    .    .    .
acaaaatgggtcactctttgtccctttgccaaagt
```

```
Exon 14 | Start: 139588 | End: 139727 | Length: 139

.    .    .    .    .    .    .    .    .    .    .    .
cactgttggcaaggtgcagtgtatatgcagtaaatagaaaataattatttcgctcagcaa

.    .    .    .    .    .    .    .    .    .    .    .
gataaggggctgggggtggagaaactggcataaaatggaataattgtcagttgtacttta

.    .    .    .    .    .    .    .    .    .    .    .
taaatatattatacagaagttctttataacagtttttgtagcttataattctaaaggcaa

.    .    .    .    .    .    .    .    .    .    .    .
atttaaaccatatattctcattgattgagtttttttttcctagtatttaagttaccaact

.    .    .    .    .    .    .    .    .    .    .    .
tggtaccagtttgttttatttagatgattgtctttttcctcttgccctttttaaattag

  |1411     |1421     |1431     |1441     |1451     |1461
GGGGACTACAGGCCATTGCAGAATTATTGCAAGTGGACTGTGAAATGTATGGGCTTACTA
  G  L  Q  A  I  A  E  L  L  Q  V  D  C  E  M  Y  G  L  T  N
  |471                        |481

  |1471     |1481     |1491     |1501     |1511     |1521
ATGACCACTACAGTATTACACTAAGACGATATGCTGGAATGGCTTTGACAAACTTGACTT
  D  H  Y  S  I  T  L  R  R  Y  A  G  M  A  L  T  N  L  T  F
  |491                        |501

  |1531     |1541      .    .    .    .    .    .    .    .
TTGGAGATGTAGCCAACAAGgtatgtttttataacatgtatttcttaagatagctcaggt
  G  D  V  A  N  K
  |511

    .    .    .    .    .    .    .    .    .    .    .    .
atgagttaatttactttcatacaaatacattttactgattttctttttttcactctcct

    .    .    .    .    .    .    .    .    .    .    .    .
cattaaacaatgactgataaaaacctgtgcttcacattcgcttatctttactcatttgtt

    .    .    .    .    .    .    .    .    .    .    .    .
tgtcttatgcctaaacaaaggcaaaggtacatctacagatggaacacagtagtgaattta

    .    .    .    .    .    .    .    .    .    .    .    .
tgtaattgcattaaaaacaccattcataagaatatacttgtagggatcatttctgtgatc

    .    .    .    .
cattactagagaagtttaac
```

```
Exon 15 | Start: 140409 | End: 140486 | Length: 77

.    .    .    .    .    .    .    .    .    .    .    .
tgttacacacacattgattccatccaaataagaggctttactctaaaacctgttgcttat

.    .    .    .    .    .    .    .    .    .    .    .
catttctcaccacttattcactttatttctctagtttgacaaaggaagaacagatagcaa

.    .    .    .    .    .    .    .    .    .    .    .
agaattaggagaatatttgtcttttatttaggtaatcttattctagatttttatgagtg

.    .    .    .    .    .    .    .    .    .    .    .
aagtatcagttatgattaaaacaaaataatgaaaactgaattagacatttagtagccaaa

.    .    .    .    .    .    .    .    .    .    .    .
aataaagcttggcttcaagttgtctttttaatgatcctctattctgtatttaatttacag

  |1551     |1561     |1571     |1581     |1591     |1601
GCTACGCTATGCTCTATGAAAGGCTGCATGAGAGCACTTGTGGCCCAACTAAAATCTGAA
A  T  L  C  S  M  K  G  C  M  R  A  L  V  A  Q  L  K  S  E
            |521                          |531

  |1611     |1621     .    .    .    .    .    .    .    .
AGTGAAGACTTACAGCAGgtactatttagaatttcacctgtttttctttttctctttttt
S  E  D  L  Q  Q
            |541

  .    .    .    .    .    .    .    .    .    .    .    .
ctttgaggcagggtctcactctgtcacccaggcttagagggcagttgtgcaatctcagct

  .    .    .    .    .    .    .    .    .    .    .    .
cactgcaacctctgcctccagggttcaagcaatcctcccacttcagcctctcgaggctgg

  .    .    .    .    .    .    .    .    .    .    .    .
gcctacaggtgcacaccaccatgccaaacgaatttttgtatttttttatagagacggggtt

  .    .    .    .    .    .    .    .    .    .    .    .
tcaccacacctgggctcaagcaatctgcccacctcagcatctcaaaatgctgggattaca

  .    .    .    .
ggcgtgtgccaccacacc
```

```
Exon 16 | Start: 141336 | End: 141452 | Length: 116

.    .    .    .    .    .    .    .    .    .    .    .
tgcttcagcctcccaagtagctagaactactgcaggcgcatgccaccatgcccagctaat

.    .    .    .    .    .    .    .    .    .    .    .
ttttaaaaagttttcatagagacagggtctcactgtgttacccagaaggtcttgaactcc

.    .    .    .    .    .    .    .    .    .    .    .
tggtctcaggagatcctcctgcctcagcctcccaaagtgataggattacaggcgtgagtc

.    .    .    .    .    .    .    .    .    .    .    .
accacggctagccagaatttctttcttaatagatttctattcttactgctagcattaaaa

.    .    .    .    .    .    .    .    .    .    .    .
acaaaaaagcaactagtatgattttatgtataaattaatctaaaattgattaatttgcag

    |1631     |1641     |1651     |1661     |1671     |1681
GTTATTGCGAGTGTTTTGAGGAATTTGTCTTGGCGAGCAGATGTAAATAGTAAAAAGACG
V  I  A  S  V  L  R  N  L  S  W  R  A  D  V  N  S  K  K  T
                       |551                          |561

    |1691     |1701     |1711     |1721     |1731     |1741
TTGCGAGAAGTTGGAAGTGTGAAAGCATTGATGGAATGTGCTTTAGAAGTTAAAAAGgta
L  R  E  V  G  S  V  K  A  L  M  E  C  A  L  E  V  K  K
                       |571                          |581

 .    .    .    .    .    .    .    .    .    .    .    .
cctttgaaaacatttagtactataatatgaatttcatgtttggctttttttgctgcctt

 .    .    .    .    .    .    .    .    .    .    .    .
cttttagccatgagatttcctaatttcttacctgtgtattattcagtactataatatgaa

 .    .    .    .    .    .    .    .    .    .    .    .
tttcatgtttagctttttttgctgccttcttttagccatgagattccctaatttcttttt

 .    .    .    .    .    .    .    .    .    .    .    .
tgagatggggtctctttctctcgcccaggctggagtgcagtggtctgatcttggctcact

 .    .    .    .    .    .    .    .    .    .    .    .
gcaacctccgtctcccatgttcaagtgattctcctgcctcagcctcctgagtagctg
```

```
Exon 17 | Start: 147431 | End: 147645 | Length: 214

.    .    .    .    .    .    .    .    .    .    .    .
atgcacatcagttgtgcctcatattctaagatgtgtgtactatctaaacacttagaataa

.    .    .    .    .    .    .    .    .    .    .    .
agtttataaaagtcattagttaaatattgtgttctgcttgttttatagagatatcactga

.    .    .    .    .    .    .    .    .    .    .    .
tataaatactatttggtattttatgaacatttttctaaatggaaagttcttaatttacca

.    .    .    .    .    .    .    .    .    .    .    .
gtgagggacgggcaataggatagattaaaaaatagcttttattcaatatcagtaacatag

.    .    .    .    .    .    .    .    .    .    .    .
aagttaatgagagacaaattccaactctaattagatgacccatattctgtttcttactag

       |1751     |1761     |1771     |1781     |1791     |1801
GAATCAACCCTCAAAAGCGTATTGAGTGCCTTATGGAATTTGTCAGCACATTGCACTGAG
E  S  T  L  K  S  V  L  S  A  L  W  N  L  S  A  H  C  T  E
                         |591                          |601

       |1811     |1821     |1831     |1841     |1851     |1861
AATAAAGCTGATATATGTGCTGTAGATGGTGCACTTGCATTTTTGGTTGGCACTCTTACT
N  K  A  D  I  C  A  V  D  G  A  L  A  F  L  V  G  T  L  T
                         |611                          |621

       |1871     |1881     |1891     |1901     |1911     |1921
TACCGGAGCCAGACAAACACTTTAGCCATTATTGAAAGTGGAGGTGGGATATTACGGAAT
Y  R  S  Q  T  N  T  L  A  I  I  E  S  G  G  G  I  L  R  N
                         |631                          |641

       |1931     |1941     |1951       .    .    .    .    .
GTGTCCAGCTTGATAGCTACAAATGAGGACCACAGgtatatatagagttttatattactt
V  S  S  L  I  A  T  N  E  D  H  R
                         |651

    .    .    .    .    .    .    .    .    .    .    .    .
ttaaagtacagaattcatactctcaaaaagacctaattgtaagcaatgttttatataatc

    .    .    .    .    .    .    .    .    .    .    .    .
atgaaagttttaagccaaaatatatttattactgtgaaaagataactactaactcttagt

    .    .    .    .    .    .    .    .    .    .    .    .
ttaactcattagtgtacttaatgtaataacagtttatagtattatagaggagactaaatt
```

```
    .    .    .    .    .    .    .    .    .    .    .    .
aagcaaattatagttgagaggtgtagcccataggtggaggaaaaaatagtcacaaatatt

    .    .    .    .    .    .    .
gtaacaaaataatccatttctattagtatagtata
```

```
Exon 18 | Start: 150033 | End: 158719 | Length: 8686

.    .    .    .    .    .    .    .    .    .    .    .
tgttatatgaatagagtaaatgtatgtgccccacccccctgcaaatgttttaagctattgg

.    .    .    .    .    .    .    .    .    .    .    .
gtcagaataggaaatgtagaattgacaaaaaataacacctttacttttttttagtgtgaca

.    .    .    .    .    .    .    .    .    .    .    .
gattagtactttaaaacattaaacattacatgaaattagaacaaaaggagatgtggaata

.    .    .    .    .    .    .    .    .    .    .    .
cttggaatttataggataattggtacaatcatattatgccttttgtcttctatccttttta

.    .    .    .    .    .    .    .    .    .    .    .
tttgttgttactgcatacacattgtgaccttaattttgtgatctcttgattttatttcag

  |1961      |1971      |1981      |1991      |2001      |2011
GCAAATCCTAAGAGAGAACAACTGTCTACAAACTTTATTACAACACTTAAAATCTCATAG
 Q  I  L  R  E  N  N  C  L  Q  T  L  L  Q  H  L  K  S  H  S
                      |661                       |671

  |2021      |2031      |2041      |2051      |2061      |2071
TTTGACAATAGTCAGTAATGCATGTGGAACTTTGTGGAATCTCTCAGCAAGAAATCCTAA
 L  T  I  V  S  N  A  C  G  T  L  W  N  L  S  A  R  N  P  K
                      |681                       |691

  |2081      |2091      |2101      |2111      |2121      |2131
AGACCAGGAAGCATTATGGGACATGGGGGCAGTTAGCATGCTCAAGAACCTCATTCATTC
 D  Q  E  A  L  W  D  M  G  A  V  S  M  L  K  N  L  I  H  S
                      |701                       |711

  |2141      |2151      |2161      |2171      |2181      |2191
AAAGCACAAAATGATTGCTATGGGAAGTGCTGCAGCTTTAAGGAATCTCATGGCAAATAG
 K  H  K  M  I  A  M  G  S  A  A  A  L  R  N  L  M  A  N  R
                      |721                       |731

  |2201      |2211      |2221      |2231      |2241      |2251
GCCTGCGAAGTACAAGGATGCCAATATTATGTCTCCTGGCTCAAGCTTGCCATCTCTTCA
 P  A  K  Y  K  D  A  N  I  M  S  P  G  S  S  L  P  S  L  H
                      |741                       |751

  |2261      |2271      |2281      |2291      |2301      |2311
TGTTAGGAAACAAAAAGCCCTAGAAGCAGAATTAGATGCTCAGCACTTATCAGAAACTTT
 V  R  K  Q  K  A  L  E  A  E  L  D  A  Q  H  L  S  E  T  F
                      |761                       |771
```

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  |2321      |2331      |2341      |2351      |2361      |2371
TGACAATATAGACAATTTAAGTCCCAAGGCATCTCATCGTAGTAAGCAGAGACACAAGCA
 D  N  I  D  N  L  S  P  K  A  S  H  R  S  K  Q  R  H  K  Q
                     |781                       |791

  |2381      |2391      |2401      |2411      |2421      |2431
AAGTCTCTATGGTGATTATGTTTTTGACACCAATCGACATGATGATAATAGGTCAGACAA
 S  L  Y  G  D  Y  V  F  D  T  N  R  H  D  D  N  R  S  D  N
                     |801                       |811

  |2441      |2451      |2461      |2471      |2481      |2491
TTTTAATACTGGCAACATGACTGTCCTTTCACCATATTTGAATACTACAGTGTTACCCAG
 F  N  T  G  N  M  T  V  L  S  P  Y  L  N  T  T  V  L  P  S
                     |821                       |831

  |2501      |2511      |2521      |2531      |2541      |2551
CTCCTCTTCATCAAGAGGAAGCTTAGATAGTTCTCGTTCTGAAAAAGATAGAAGTTTGGA
 S  S  S  S  R  G  S  L  D  S  S  R  S  E  K  D  R  S  L  E
                     |841                       |851

  |2561      |2571      |2581      |2591      |2601      |2611
GAGAGAACGCGGAATTGGTCTAGGCAACTACCATCCAGCAACAGAAAATCCAGGAACTTC
 R  E  R  G  I  G  L  G  N  Y  H  P  A  T  E  N  P  G  T  S
                     |861                       |871

  |2621      |2631      |2641      |2651      |2661      |2671
TTCAAAGCGAGGTTTGCAGATCTCCACCACTGCAGCCCAGATTGCCAAAGTCATGGAAGA
 S  K  R  G  L  Q  I  S  T  T  A  A  Q  I  A  K  V  M  E  E
                     |881                       |891

  |2681      |2691      |2701      |2711      |2721      |2731
AGTGTCAGCCATTCATACCTCTCAGGAAGACAGAAGTTCTGGGTCTACCACTGAATTACA
 V  S  A  I  H  T  S  Q  E  D  R  S  S  G  S  T  T  E  L  H
                     |901                       |911

  |2741      |2751      |2761      |2771      |2781      |2791
TTGTGTGACAGATGAGAGAAATGCACTTAGAAGAAGCTCTGCTGCCCATACACATTCAAA
 C  V  T  D  E  R  N  A  L  R  R  S  S  A  A  H  T  H  S  N
                     |921                       |931

  |2801      |2811      |2821      |2831      |2841      |2851
CACTTACAATTTCACTAAGTCGGAAAATTCAAATAGGACATGTTCTATGCCTTATGCCAA
 T  Y  N  F  T  K  S  E  N  S  N  R  T  C  S  M  P  Y  A  K
                     |941                       |951
```

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  |2861      |2871      |2881      |2891      |2901      |2911
ATTAGAATACAAGAGATCTTCAAATGATAGTTTAAATAGTGTCAGTAGTAGTGATGGTTA
 L  E  Y  K  R  S  S  N  D  S  L  N  S  V  S  S  S  D  G  Y
                      |961                       |971

  |2921      |2931      |2941      |2951      |2961      |2971
TGGTAAAAGAGGTCAAATGAAACCCTCGATTGAATCCTATTCTGAAGATGATGAAAGTAA
 G  K  R  G  Q  M  K  P  S  I  E  S  Y  S  E  D  D  E  S  K
                      |981                       |991

  |2981      |2991      |3001      |3011      |3021      |3031
GTTTTGCAGTTATGGTCAATACCCAGCCGACCTAGCCCATAAAATACATAGTGCAAATCA
 F  C  S  Y  G  Q  Y  P  A  D  L  A  H  K  I  H  S  A  N  H
                      |1001                      |1011

  |3041      |3051      |3061      |3071      |3081      |3091
TATGGATGATAATGATGGAGAACTAGATACACCAATAAATTATAGTCTTAAATATTCAGA
 M  D  D  N  D  G  E  L  D  T  P  I  N  Y  S  L  K  Y  S  D
                      |1021                      |1031

  |3101      |3111      |3121      |3131      |3141      |3151
TGAGCAGTTGAACTCTGGAAGGCAAAGTCCTTCACAGAATGAAAGATGGGCAAGACCCAA
 E  Q  L  N  S  G  R  Q  S  P  S  Q  N  E  R  W  A  R  P  K
                      |1041                      |1051

  |3161      |3171      |3181      |3191      |3201      |3211
ACACATAATAGAAGATGAAATAAAACAAAGTGAGCAAAGACAATCAAGGAATCAAAGTAC
 H  I  I  E  D  E  I  K  Q  S  E  Q  R  Q  S  R  N  Q  S  T
                      |1061                      |1071

  |3221      |3231      |3241      |3251      |3261      |3271
AACTTATCCTGTTTATACTGAGAGCACTGATGATAAACACCTCAAGTTCCAACCACATTT
 T  Y  P  V  Y  T  E  S  T  D  D  K  H  L  K  F  Q  P  H  F
                      |1081                      |1091

  |3281      |3291      |3301      |3311      |3321      |3331
TGGACAGCAGGAATGTGTTTCTCCATACAGGTCACGGGGAGCCAATGGTTCAGAAACAAA
 G  Q  Q  E  C  V  S  P  Y  R  S  R  G  A  N  G  S  E  T  N
                      |1101                      |1111

  |3341      |3351      |3361      |3371      |3381      |3391
TCGAGTGGGTTCTAATCATGGAATTAATCAAAATGTAAGCCAGTCTTTGTGTCAAGAAGA
 R  V  G  S  N  H  G  I  N  Q  N  V  S  Q  S  L  C  Q  E  D
                      |1121                      |1131

  |3401      |3411      |3421      |3431      |3441      |3451
```

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TGACTATGAAGATGATAAGCCTACCAATTATAGTGAACGTTACTCTGAAGAAGAACAGCA
 D  Y  E  D  D  K  P  T  N  Y  S  E  R  Y  S  E  E  E  Q  H
                     |1141                      |1151

  |3461     |3471     |3481     |3491     |3501     |3511
TGAAGAAGAAGAGAGACCAACAAATTATAGCATAAAATATAATGAAGAGAAACGTCATGT
 E  E  E  E  R  P  T  N  Y  S  I  K  Y  N  E  E  K  R  H  V
                     |1161                      |1171

  |3521     |3531     |3541     |3551     |3561     |3571
GGATCAGCCTATTGATTATAGTTTAAAATATGCCACAGATATTCCTTCATCACAGAAACA
 D  Q  P  I  D  Y  S  L  K  Y  A  T  D  I  P  S  S  Q  K  Q
                     |1181                      |1191

  |3581     |3591     |3601     |3611     |3621     |3631
GTCATTTTCATTCTCAAAGAGTTCATCTGGACAAAGCAGTAAAACCGAACATATGTCTTC
 S  F  S  F  S  K  S  S  S  G  Q  S  S  K  T  E  H  M  S  S
                     |1201                      |1211

  |3641     |3651     |3661     |3671     |3681     |3691
AAGCAGTGAGAATACGTCCACACCTTCATCTAATGCCAAGAGGCAGAATCAGCTCCATCC
 S  S  E  N  T  S  T  P  S  S  N  A  K  R  Q  N  Q  L  H  P
                     |1221                      |1231

  |3701     |3711     |3721     |3731     |3741     |3751
AAGTTCTGCACAGAGTAGAAGTGGTCAGCCTCAAAAGGCTGCCACTTGCAAAGTTTCTTC
 S  S  A  Q  S  R  S  G  Q  P  Q  K  A  A  T  C  K  V  S  S
                     |1241                      |1251

  |3761     |3771     |3781     |3791     |3801     |3811
TATTAACCAAGAAACAATACAGACTTATTGTGTAGAAGATACTCCAATATGTTTTTCAAG
 I  N  Q  E  T  I  Q  T  Y  C  V  E  D  T  P  I  C  F  S  R
                     |1261                      |1271

  |3821     |3831     |3841     |3851     |3861     |3871
ATGTAGTTCATTATCATCTTTGTCATCAGCTGAAGATGAAATAGGATGTAATCAGACGAC
 C  S  S  L  S  S  L  S  S  A  E  D  E  I  G  C  N  Q  T  T
                     |1281                      |1291

  |3881     |3891     |3901     |3911     |3921     |3931
ACAGGAAGCAGATTCTGCTAATACCCTGCAAATAGCAGAAATAAAAGAAAAGATTGGAAC
 Q  E  A  D  S  A  N  T  L  Q  I  A  E  I  K  E  K  I  G  T
                     |1301                      |1311

  |3941     |3951     |3961     |3971     |3981     |3991
TAGGTCAGCTGAAGATCCTGTGAGCGAAGTTCCAGCAGTGTCACAGCACCCTAGAACCAA
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 R  S  A  E  D  P  V  S  E  V  P  A  V  S  Q  H  P  R  T  K
                      |1321                      |1331

  |4001     |4011     |4021     |4031     |4041     |4051
ATCCAGCAGACTGCAGGGTTCTAGTTTATCTTCAGAATCAGCCAGGCACAAAGCTGTTGA
 S  S  R  L  Q  G  S  S  L  S  S  E  S  A  R  H  K  A  V  E
                      |1341                      |1351

  |4061     |4071     |4081     |4091     |4101     |4111
ATTTTCTTCAGGAGCGAAATCTCCCTCCAAAAGTGGTGCTCAGACACCCAAAAGTCCACC
 F  S  S  G  A  K  S  P  S  K  S  G  A  Q  T  P  K  S  P  P
                      |1361                      |1371

  |4121     |4131     |4141     |4151     |4161     |4171
TGAACACTATGTTCAGGAGACCCCACTCATGTTTAGCAGATGTACTTCTGTCAGTTCACT
 E  H  Y  V  Q  E  T  P  L  M  F  S  R  C  T  S  V  S  S  L
                      |1381                      |1391

  |4181     |4191     |4201     |4211     |4221     |4231
TGATAGTTTTGAGAGTCGTTCGATTGCCAGCTCCGTTCAGAGTGAACCATGCAGTGGAAT
 D  S  F  E  S  R  S  I  A  S  S  V  Q  S  E  P  C  S  G  M
                      |1401                      |1411

  |4241     |4251     |4261     |4271     |4281     |4291
GGTAAGTGGCATTATAAGCCCCAGTGATCTTCCAGATAGCCCTGGACAAACCATGCCACC
 V  S  G  I  I  S  P  S  D  L  P  D  S  P  G  Q  T  M  P  P
                      |1421                      |1431

  |4301     |4311     |4321     |4331     |4341     |4351
AAGCAGAAGTAAAACACCTCCACCACCTCCTCAAACAGCTCAAACCAAGCGAGAAGTACC
 S  R  S  K  T  P  P  P  P  P  Q  T  A  Q  T  K  R  E  V  P
                      |1441                      |1451

  |4361     |4371     |4381     |4391     |4401     |4411
TAAAAATAAAGCACCTACTGCTGAAAAGAGAGAGAGTGGACCTAAGCAAGCTGCAGTAAA
 K  N  K  A  P  T  A  E  K  R  E  S  G  P  K  Q  A  A  V  N
                      |1461                      |1471

  |4421     |4431     |4441     |4451     |4461     |4471
TGCTGCAGTTCAGAGGGTCCAGGTTCTTCCAGATGCTGATACTTTATTACATTTTGCCAC
 A  A  V  Q  R  V  Q  V  L  P  D  A  D  T  L  L  H  F  A  T
                      |1481                      |1491

  |4481     |4491     |4501     |4511     |4521     |4531
GGAAAGTACTCCAGATGGATTTTCTTGTTCATCCAGCCTGAGTGCTCTGAGCCTCGATGA
 E  S  T  P  D  G  F  S  C  S  S  S  L  S  A  L  S  L  D  E
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                    |1501                       |1511

  |4541     |4551     |4561     |4571     |4581     |4591
GCCATTTATACAGAAAGATGTGGAATTAAGAATAATGCCTCCAGTTCAGGAAAATGACAA
 P  F  I  Q  K  D  V  E  L  R  I  M  P  P  V  Q  E  N  D  N
                    |1521                       |1531

  |4601     |4611     |4621     |4631     |4641     |4651
TGGGAATGAAACAGAATCAGAGCAGCCTAAAGAATCAAATGAAAACCAAGAGAAAGAGGC
 G  N  E  T  E  S  E  Q  P  K  E  S  N  E  N  Q  E  K  E  A
                    |1541                       |1551

  |4661     |4671     |4681     |4691     |4701     |4711
AGAAAAAACTATTGATTCTGAAAAGGACCTATTAGATGATTCAGATGATGATGATATTGA
 E  K  T  I  D  S  E  K  D  L  L  D  D  S  D  D  D  D  I  E
                    |1561                       |1571

  |4721     |4731     |4741     |4751     |4761     |4771
AATACTAGAAGAATGTATTATTTCTGCCATGCCAACAAAGTCATCACGTAAAGCAAAAAA
 I  L  E  E  C  I  I  S  A  M  P  T  K  S  S  R  K  A  K  K
                    |1581                       |1591

  |4781     |4791     |4801     |4811     |4821     |4831
GCCAGCCCAGACTGCTTCAAAATTACCTCCACCTGTGGCAAGGAAACCAAGTCAGCTGCC
 P  A  Q  T  A  S  K  L  P  P  P  V  A  R  K  P  S  Q  L  P
                    |1601                       |1611

  |4841     |4851     |4861     |4871     |4881     |4891
TGTGTACAAACTTCTACCATCACAAAACAGGTTGCAACCCCAAAAGCATGTTAGTTTTAC
 V  Y  K  L  L  P  S  Q  N  R  L  Q  P  Q  K  H  V  S  F  T
                    |1621                       |1631

  |4901     |4911     |4921     |4931     |4941     |4951
ACCGGGGGATGATATGCCACGGGTGTATTGTGTTGAAGGGACACCTATAAACTTTTCCAC
 P  G  D  D  M  P  R  V  Y  C  V  E  G  T  P  I  N  F  S  T
                    |1641                       |1651

  |4961     |4971     |4981     |4991     |5001     |5011
AGCTACATCTCTAAGTGATCTAACAATCGAATCCCCTCCAAATGAGTTAGCTGCTGGAGA
 A  T  S  L  S  D  L  T  I  E  S  P  P  N  E  L  A  A  G  E
                    |1661                       |1671

  |5021     |5031     |5041     |5051     |5061     |5071
AGGAGTTAGAGGAGGGGCACAGTCAGGTGAATTTGAAAAACGAGATACCATTCCTACAGA
 G  V  R  G  G  A  Q  S  G  E  F  E  K  R  D  T  I  P  T  E
                    |1681                       |1691
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  |5081      |5091      |5101      |5111      |5121      |5131
AGGCAGAAGTACAGATGAGGCTCAAGGAGGAAAAACCTCATCTGTAACCATACCTGAATT
 G  R  S  T  D  E  A  Q  G  G  K  T  S  S  V  T  I  P  E  L
                      |1701                       |1711

  |5141      |5151      |5161      |5171      |5181      |5191
GGATGACAATAAAGCAGAGGAAGGTGATATTCTTGCAGAATGCATTAATTCTGCTATGCC
 D  D  N  K  A  E  E  G  D  I  L  A  E  C  I  N  S  A  M  P
                      |1721                       |1731

  |5201      |5211      |5221      |5231      |5241      |5251
CAAAGGGAAAAGTCACAAGCCTTTCCGTGTGAAAAAGATAATGGACCAGGTCCAGCAAGC
 K  G  K  S  H  K  P  F  R  V  K  K  I  M  D  Q  V  Q  Q  A
                      |1741                       |1751

  |5261      |5271      |5281      |5291      |5301      |5311
ATCTGCGTCTTCTTCTGCACCCAACAAAAATCAGTTAGATGGTAAGAAAAAGAAACCAAC
 S  A  S  S  S  A  P  N  K  N  Q  L  D  G  K  K  K  K  P  T
                      |1761                       |1771

  |5321      |5331      |5341      |5351      |5361      |5371
TTCACCAGTAAAACCTATACCACAAAATACTGAATATAGGACACGTGTAAGAAAAAATGC
 S  P  V  K  P  I  P  Q  N  T  E  Y  R  T  R  V  R  K  N  A
                      |1781                       |1791

  |5381      |5391      |5401      |5411      |5421      |5431
AGACTCAAAAAATAATTTAAATGCTGAGAGAGTTTTCTCAGACAACAAAGATTCAAAGAA
 D  S  K  N  N  L  N  A  E  R  V  F  S  D  N  K  D  S  K  K
                      |1801                       |1811

  |5441      |5451      |5461      |5471      |5481      |5491
ACAGAATTTGAAAAATAATTCCAAGGTCTTCAATGATAAGCTCCCAAATAATGAAGATAG
 Q  N  L  K  N  N  S  K  V  F  N  D  K  L  P  N  N  E  D  R
                      |1821                       |1831

  |5501      |5511      |5521      |5531      |5541      |5551
AGTCAGAGGAAGTTTTGCTTTTGATTCACCTCATCATTACACGCCTATTGAAGGAACTCC
 V  R  G  S  F  A  F  D  S  P  H  H  Y  T  P  I  E  G  T  P
                      |1841                       |1851

  |5561      |5571      |5581      |5591      |5601      |5611
TTACTGTTTTTCACGAAATGATTCTTTGAGTTCTCTAGATTTTGATGATGATGATGTTGA
 Y  C  F  S  R  N  D  S  L  S  S  L  D  F  D  D  D  D  V  D
                      |1861                       |1871
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  |5621      |5631      |5641      |5651      |5661      |5671
CCTTTCCAGGGAAAAGGCTGAATTAAGAAAGGCAAAAGAAAATAAGGAATCAGAGGCTAA
 L  S  R  E  K  A  E  L  R  K  A  K  E  N  K  E  S  E  A  K
                      |1881                      |1891

  |5681      |5691      |5701      |5711      |5721      |5731
AGTTACCAGCCACACAGAACTAACCTCCAACCAACAATCAGCTAATAAGACACAAGCTAT
 V  T  S  H  T  E  L  T  S  N  Q  Q  S  A  N  K  T  Q  A  I
                      |1901                      |1911

  |5741      |5751      |5761      |5771      |5781      |5791
TGCAAAGCAGCCAATAAATCGAGGTCAGCCTAAACCCATACTTCAGAAACAATCCACTTT
 A  K  Q  P  I  N  R  G  Q  P  K  P  I  L  Q  K  Q  S  T  F
                      |1921                      |1931

  |5801      |5811      |5821      |5831      |5841      |5851
TCCCCAGTCATCCAAAGACATACCAGACAGAGGGGCAGCAACTGATGAAAAGTTACAGAA
 P  Q  S  S  K  D  I  P  D  R  G  A  A  T  D  E  K  L  Q  N
                      |1941                      |1951

  |5861      |5871      |5881      |5891      |5901      |5911
TTTTGCTATTGAAAATACTCCGGTTTGCTTTTCTCATAATTCCTCTCTGAGTTCTCTCAG
 F  A  I  E  N  T  P  V  C  F  S  H  N  S  S  L  S  S  L  S
                      |1961                      |1971

  |5921      |5931      |5941      |5951      |5961      |5971
TGACATTGACCAAGAAAACAACAATAAAGAAAATGAACCTATCAAAGAGACTGAGCCCCC
 D  I  D  Q  E  N  N  N  K  E  N  E  P  I  K  E  T  E  P  P
                      |1981                      |1991

  |5981      |5991      |6001      |6011      |6021      |6031
TGACTCACAGGGAGAACCAAGTAAACCTCAAGCATCAGGCTATGCTCCTAAATCATTTCA
 D  S  Q  G  E  P  S  K  P  Q  A  S  G  Y  A  P  K  S  F  H
                      |2001                      |2011

  |6041      |6051      |6061      |6071      |6081      |6091
TGTTGAAGATACCCCAGTTTGTTTCTCAAGAAACAGTTCTCTCAGTTCTCTTAGTATTGA
 V  E  D  T  P  V  C  F  S  R  N  S  S  L  S  S  L  S  I  D
                      |2021                      |2031

  |6101      |6111      |6121      |6131      |6141      |6151
CTCTGAAGATGACCTGTTGCAGGAATGTATAAGCTCCGCAATGCCAAAAAAAGAAAAAGCC
 S  E  D  D  L  L  Q  E  C  I  S  S  A  M  P  K  K  K  K  P
                      |2041                      |2051

  |6161      |6171      |6181      |6191      |6201      |6211
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TTCAAGACTCAAGGGTGATAATGAAAAACATAGTCCCAGAAATATGGGTGGCATATTAGG
 S  R  L  K  G  D  N  E  K  H  S  P  R  N  M  G  G  I  L  G
                      |2061                      |2071

  |6221     |6231     |6241     |6251     |6261     |6271
TGAAGATCTGACACTTGATTTGAAAGATATACAGAGACCAGATTCAGAACATGGTCTATC
 E  D  L  T  L  D  L  K  D  I  Q  R  P  D  S  E  H  G  L  S
                      |2081                      |2091

  |6281     |6291     |6301     |6311     |6321     |6331
CCCTGATTCAGAAAATTTTGATTGGAAAGCTATTCAGGAAGGTGCAAATTCCATAGTAAG
 P  D  S  E  N  F  D  W  K  A  I  Q  E  G  A  N  S  I  V  S
                      |2101                      |2111

  |6341     |6351     |6361     |6371     |6381     |6391
TAGTTTACATCAAGCTGCTGCTGCTGCATGTTTATCTAGACAAGCTTCGTCTGATTCAGA
 S  L  H  Q  A  A  A  A  A  C  L  S  R  Q  A  S  S  D  S  D
                      |2121                      |2131

  |6401     |6411     |6421     |6431     |6441     |6451
TTCCATCCTTTCCCTGAAATCAGGAATCTCTCTGGGATCACCATTTCATCTTACACCTGA
 S  I  L  S  L  K  S  G  I  S  L  G  S  P  F  H  L  T  P  D
                      |2141                      |2151

  |6461     |6471     |6481     |6491     |6501     |6511
TCAAGAAGAAAAACCCTTTACAAGTAATAAAGGCCCACGAATTCTAAAACCAGGGGAGAA
 Q  E  E  K  P  F  T  S  N  K  G  P  R  I  L  K  P  G  E  K
                      |2161                      |2171

  |6521     |6531     |6541     |6551     |6561     |6571
AAGTACATTGGAAACTAAAAAGATAGAATCTGAAAGTAAAGGAATCAAAGGAGGAAAAAA
 S  T  L  E  T  K  K  I  E  S  E  S  K  G  I  K  G  G  K  K
                      |2181                      |2191

  |6581     |6591     |6601     |6611     |6621     |6631
AGTTTATAAAAGTTTGATTACTGGAAAAGTTCGATCTAATTCAGAAATTTCAGGCCAAAT
 V  Y  K  S  L  I  T  G  K  V  R  S  N  S  E  I  S  G  Q  M
                      |2201                      |2211

  |6641     |6651     |6661     |6671     |6681     |6691
GAAACAGCCCCTTCAAGCAAACATGCCTTCAATCTCTCGAGGCAGGACAATGATTCATAT
 K  Q  P  L  Q  A  N  M  P  S  I  S  R  G  R  T  M  I  H  I
                      |2221                      |2231

  |6701     |6711     |6721     |6731     |6741     |6751
TCCAGGAGTTCGAAATAGCTCCTCAAGTACAAGTCCTGTTTCTAAAAAAGGCCCACCCCT
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 P  G  V  R  N  S  S  S  S  T  S  P  V  S  K  K  G  P  P  L
                      |2241                      |2251

  |6761     |6771     |6781     |6791     |6801     |6811
TAAGACTCCAGCCTCCAAAAGCCCTAGTGAAGGTCAAACAGCCACCACTTCTCCTAGAGG
 K  T  P  A  S  K  S  P  S  E  G  Q  T  A  T  T  S  P  R  G
                      |2261                      |2271

  |6821     |6831     |6841     |6851     |6861     |6871
AGCCAAGCCATCTGTGAAATCAGAATTAAGCCCTGTTGCCAGGCAGACATCCCAAATAGG
 A  K  P  S  V  K  S  E  L  S  P  V  A  R  Q  T  S  Q  I  G
                      |2281                      |2291

  |6881     |6891     |6901     |6911     |6921     |6931
TGGGTCAAGTAAAGCACCTTCTAGATCAGGATCTAGAGATTCGACCCCTTCAAGACCTGC
 G  S  S  K  A  P  S  R  S  G  S  R  D  S  T  P  S  R  P  A
                      |2301                      |2311

  |6941     |6951     |6961     |6971     |6981     |6991
CCAGCAACCATTAAGTAGACCTATACAGTCTCCTGGCCGAAACTCAATTTCCCCTGGTAG
 Q  Q  P  L  S  R  P  I  Q  S  P  G  R  N  S  I  S  P  G  R
                      |2321                      |2331

  |7001     |7011     |7021     |7031     |7041     |7051
AAATGGAATAAGTCCTCCTAACAAATTATCTCAACTTCCAAGGACATCATCCCCTAGTAC
 N  G  I  S  P  P  N  K  L  S  Q  L  P  R  T  S  S  P  S  T
                      |2341                      |2351

  |7061     |7071     |7081     |7091     |7101     |7111
TGCTTCAACTAAGTCCTCAGGTTCTGGAAAAATGTCATATACATCTCCAGGTAGACAGAT
 A  S  T  K  S  S  G  S  G  K  M  S  Y  T  S  P  G  R  Q  M
                      |2361                      |2371

  |7121     |7131     |7141     |7151     |7161     |7171
GAGCCAACAGAACCTTACCAAACAAACAGGTTTATCCAAGAATGCCAGTAGTATTCCAAG
 S  Q  Q  N  L  T  K  Q  T  G  L  S  K  N  A  S  S  I  P  R
                      |2381                      |2391

  |7181     |7191     |7201     |7211     |7221     |7231
AAGTGAGTCTGCCTCCAAAGGACTAAATCAGATGAATAATGGTAATGGAGCCAATAAAAA
 S  E  S  A  S  K  G  L  N  Q  M  N  N  G  N  G  A  N  K  K
                      |2401                      |2411

  |7241     |7251     |7261     |7271     |7281     |7291
GGTAGAACTTTCTAGAATGTCTTCAACTAAATCAAGTGGAAGTGAATCTGATAGATCAGA
 V  E  L  S  R  M  S  S  T  K  S  S  G  S  E  S  D  R  S  E
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                        |2421                           |2431

  |7301      |7311      |7321      |7331      |7341      |7351
AAGACCTGTATTAGTACGCCAGTCAACTTTCATCAAAGAAGCTCCAAGCCCAACCTTAAG
 R  P  V  L  V  R  Q  S  T  F  I  K  E  A  P  S  P  T  L  R
                        |2441                           |2451

  |7361      |7371      |7381      |7391      |7401      |7411
AAGAAAATTGGAGGAATCTGCTTCATTTGAATCTCTTTCTCCATCATCTAGACCAGCTTC
 R  K  L  E  E  S  A  S  F  E  S  L  S  P  S  S  R  P  A  S
                        |2461                           |2471

  |7421      |7431      |7441      |7451      |7461      |7471
TCCCACTAGGTCCCAGGCACAAACTCCAGTTTTAAGTCCTTCCCTTCCTGATATGTCTCT
 P  T  R  S  Q  A  Q  T  P  V  L  S  P  S  L  P  D  M  S  L
                        |2481                           |2491

  |7481      |7491      |7501      |7511      |7521      |7531
ATCCACACATTCGTCTGTTCAGGCTGGTGGATGGCGAAAACTCCCACCTAATCTCAGTCC
 S  T  H  S  S  V  Q  A  G  G  W  R  K  L  P  P  N  L  S  P
                        |2501                           |2511

  |7541      |7551      |7561      |7571      |7581      |7591
CACTATAGAGTATAATGATGGAAGACCAGCAAAGCGCCATGATATTGCACGGTCTCATTC
 T  I  E  Y  N  D  G  R  P  A  K  R  H  D  I  A  R  S  H  S
                        |2521                           |2531

  |7601      |7611      |7621      |7631      |7641      |7651
TGAAAGTCCTTCTAGACTTCCAATCAATAGGTCAGGAACCTGGAAACGTGAGCACAGCAA
 E  S  P  S  R  L  P  I  N  R  S  G  T  W  K  R  E  H  S  K
                        |2541                           |2551

  |7661      |7671      |7681      |7691      |7701      |7711
ACATTCATCATCCCTTCCTCGAGTAAGCACTTGGAGAAGAACTGGAAGTTCATCTTCAAT
 H  S  S  S  L  P  R  V  S  T  W  R  R  T  G  S  S  S  S  I
                        |2561                           |2571

  |7721      |7731      |7741      |7751      |7761      |7771
TCTTTCTGCTTCATCAGAATCCAGTGAAAAAGCAAAAAGTGAGGATGAAAAACATGTGAA
 L  S  A  S  S  E  S  S  E  K  A  K  S  E  D  E  K  H  V  N
                        |2581                           |2591

  |7781      |7791      |7801      |7811      |7821      |7831
CTCTATTTCAGGAACCAAACAAAGTAAAGAAAACCAAGTATCCGCAAAAGGAACATGGAG
 S  I  S  G  T  K  Q  S  K  E  N  Q  V  S  A  K  G  T  W  R
                        |2601                           |2611
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  |7841     |7851     |7861     |7871     |7881     |7891
AAAAATAAAAGAAAATGAATTTTCTCCCACAAATAGTACTTCTCAGACCGTTTCCTCAGG
 K  I  K  E  N  E  F  S  P  T  N  S  T  S  Q  T  V  S  S  G
                    |2621                    |2631

  |7901     |7911     |7921     |7931     |7941     |7951
TGCTACAAATGGTGCTGAATCAAAGACTCTAATTTATCAAATGGCACCTGCTGTTTCTAA
 A  T  N  G  A  E  S  K  T  L  I  Y  Q  M  A  P  A  V  S  K
                    |2641                    |2651

  |7961     |7971     |7981     |7991     |8001     |8011
AACAGAGGATGTTTGGGTGAGAATTGAGGACTGTCCCATTAACAATCCTAGATCTGGAAG
 T  E  D  V  W  V  R  I  E  D  C  P  I  N  N  P  R  S  G  R
                    |2661                    |2671

  |8021     |8031     |8041     |8051     |8061     |8071
ATCTCCCACAGGTAATACTCCCCCGGTGATTGACAGTGTTTCAGAAAAGGCAAATCCAAA
 S  P  T  G  N  T  P  P  V  I  D  S  V  S  E  K  A  N  P  N
                    |2681                    |2691

  |8081     |8091     |8101     |8111     |8121     |8131
CATTAAAGATTCAAAAGATAATCAGGCAAAACAAAATGTGGGTAATGGCAGTGTTCCCAT
 I  K  D  S  K  D  N  Q  A  K  Q  N  V  G  N  G  S  V  P  M
                    |2701                    |2711

  |8141     |8151     |8161     |8171     |8181     |8191
GCGTACCGTGGGTTTGGAAAATCGCCTGAACTCCTTTATTCAGGTGGATGCCCCTGACCA
 R  T  V  G  L  E  N  R  L  N  S  F  I  Q  V  D  A  P  D  Q
                    |2721                    |2731

  |8201     |8211     |8221     |8231     |8241     |8251
AAAAGGAACTGAGATAAAACCAGGACAAAATAATCCTGTCCCTGTATCAGAGACTAATGA
 K  G  T  E  I  K  P  G  Q  N  N  P  V  P  V  S  E  T  N  E
                    |2741                    |2751

  |8261     |8271     |8281     |8291     |8301     |8311
AAGTTCTATAGTGGAACGTACCCCATTCAGTTCTAGCAGCTCAAGCAAACACAGTTCACC
 S  S  I  V  E  R  T  P  F  S  S  S  S  S  S  K  H  S  S  P
                    |2761                    |2771

  |8321     |8331     |8341     |8351     |8361     |8371
TAGTGGGACTGTTGCTGCCAGAGTGACTCCTTTTAATTACAACCCAAGCCCTAGGAAAAG
 S  G  T  V  A  A  R  V  T  P  F  N  Y  N  P  S  P  R  K  S
                    |2781                    |2791
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  |8381      |8391      |8401      |8411      |8421      |8431
CAGCGCAGATAGCACTTCAGCTCGGCCATCTCAGATCCCAACTCCAGTGAATAACAACAC
 S  A  D  S  T  S  A  R  P  S  Q  I  P  T  P  V  N  N  N  T
                      |2801                       |2811

  |8441      |8451      |8461      |8471      |8481      |8491
AAAGAAGCGAGATTCCAAAACTGACAGCACAGAATCCAGTGGAACCCAAAGTCCTAAGCG
 K  K  R  D  S  K  T  D  S  T  E  S  S  G  T  Q  S  P  K  R
                      |2821                       |2831

  |8501      |8511      |8521      |8531       |*11       |*21
CCATTCTGGGTCTTACCTTGTGACATCTGTTTAAAAGAGAGGAAGAATGAAACTAAGAAA
 H  S  G  S  Y  L  V  T  S  V  *
                      |2841

    |*31       |*41       |*51       |*61       |*71       |*81
ATTCTATGTTAATTACAACTGCTATATAGACATTTTGTTTCAAATGAAACTTTAAAAGAC

    |*91       |*101      |*111      |*121      |*131      |*141
TGAAAAATTTTGTAAATAGGTTTGATTCTTGTTAGAGGGTTTTTGTTCTGGAAGCCATAT

    |*151      |*161      |*171      |*181      |*191      |*201
TTGATAGTATACTTTGTCTTCACTGGTCTTATTTTGGGAGGCACTCTTGATGGTTAGGAA

    |*211      |*221      |*231      |*241      |*251      |*261
AAAAATAGTAAAGCCAAGTATGTTTGTACAGTATGTTTTACATGTATTTAAAGTAGCATC

    |*271      |*281      |*291      |*301      |*311      |*321
CCATCCCAACTTCCTTTAATTATTGCTTGTCTTAAAATAATGAACACTACAGATAGAAAA

    |*331      |*341      |*351      |*361      |*371      |*381
TATGATATATTGCTGTTATCAATCATTTCTAGATTATAAACTGACTAAACTTACATCAGG

    |*391      |*401      |*411      |*421      |*431      |*441
GAAAAATTGGTATTTATGCAAAAAAAAATGTTTTTGTCCTTGTGAGTCCATCTAACATCA

    |*451      |*461      |*471      |*481      |*491      |*501
TAATTAATCATGTGGCTGTGAAATTCACAGTAATATGGTTCCCGATGAACAAGTTTACCC

    |*511      |*521      |*531      |*541      |*551      |*561
AGCCTGCTTTGCTTTACTGCATGAATGAAACTGATGGTTCAATTTCAGAAGTAATGATTA

    |*571      |*581      |*591      |*601      |*611      |*621
ACAGTTATGTGGTCACATGATGTGCATAGAGATAGCTACAGTGTAATAATTTACACTATT

    |*631      |*641      |*651      |*661      |*671      |*681
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TTGTGCTCCAAACAAAACAAAAATCTGTGTAACTGTAAAACATTGAATGAAACTATTTTA

    |*691      |*701      |*711      |*721      |*731      |*741
CCTGAACTAGATTTTATCTGAAAGTAGGTAGAATTTTTGCTATGCTGTAATTTGTTGTAT

    |*751      |*761      |*771      |*781      |*791      |*801
ATTCTGGTATTTGAGGTGAGATGGCTGCTCTTTTATTAATGAGACATGAATTGTGTCTCA

    |*811      |*821      |*831      |*841      |*851      |*861
ACAGAAACTAAATGAACATTTCAGAATAAATTATTGCTGTATGTAAACTGTTACTGAAAT

    |*871      |*881      |*891      |*901      |*911      |*921
TGGTATTTGTTTGAAGGGTCTTGTTTCACATTTGTATTAATAATTGTTTAAAATGCCTCT

    |*931      |*941      |*951      |*961      |*971      |*981
TTTAAAAGCTTATATAAATTTTTTTCTTCAGCTTCTATGCATTAAGAGTAAAATTCCTCT

    |*991      |*1001     |*1011     |*1021     |*1031     |*1041
TACTGTAATAAAAACAATTGAAGAAGACTGTTGCCACTTAACCATTCCATGCGTTGGCAC

    |*1051     |*1061     |*1071     |*1081     |*1091     |*1101
TTATCTATTCCTGAAATTTCTTTTATGTGATTAGCTCATCTTGATTTTTAATATTTTTCC

    |*1111     |*1121     |*1131     |*1141     |*1151     |*1161
ACTTAAACTTTTTTTTCTTACTCCACTGGAGCTCAGTAAAAGTAAATTCATGTAATAGCA

    |*1171     |*1181     |*1191     |*1201     |*1211     |*1221
ATGCAAGCAGCCTAGCACAGACTAAGCATTGAGCATAATAGGCCCACATAATTTCCTCTT

    |*1231     |*1241     |*1251     |*1261     |*1271     |*1281
TCTTAATATTATAGAATTCTGTACTTGAAATTGATTCTTAGACATTGCAGTCTCTTCGAG

    |*1291     |*1301     |*1311     |*1321     |*1331     |*1341
GCTTTACAGTGTAAACTGTCTTGCCCCTTCATCTTCTTGTTGCAACTGGGTCTGACATGA

    |*1351     |*1361     |*1371     |*1381     |*1391     |*1401
ACACTTTTTATCACCCTGTATGTTAGGGCAAGATCTCAGCAGTGAAGTATAATCAGCACT

    |*1411     |*1421     |*1431     |*1441     |*1451     |*1461
TTGCCATGCTCAGAAAATTCAAATCACATGGAACTTTAGAGGTAGATTTAATACGATTAA

    |*1471     |*1481     |*1491     |*1501     |*1511     |*1521
GATATTCAGAAGTATATTTTAGAATCCCTGCCTGTTAAGGAAACTTTATTTGTGGTAGGT

    |*1531     |*1541     |*1551     |*1561     |*1571     |*1581
ACAGTTCTGGGGTACATGTTAAGTGTCCCCTTATACAGTGGAGGGAAGTCTTCCTTCCTG
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    |*1591     |*1601     |*1611     |*1621     |*1631     |*1641
AAGGAAAATAAACTGACACTTATTAACTAAGATAATTTACTTAATATATCTTCCCTGATT

    |*1651     |*1661     |*1671     |*1681     |*1691     |*1701
TGTTTTAAAAGATCAGAGGGTGACTGATGATACATGCATACATATTTGTTGAATAAATGA

    |*1711     |*1721     |*1731     |*1741     |*1751     |*1761
AAATTTATTTTTAGTGATAAGATTCATACACTCTGTATTTGGGGAGGGAAAACCTTTTTA

    |*1771     |*1781     |*1791     |*1801     |*1811     |*1821
AGCATGGTGGGGCACTCAGATAGGAGTGAATACACCTACCTGGTGCCTTGAAAATCACAT

    |*1831     |*1841     |*1851     |*1861     |*1871     |*1881
CAAGTAGTTAATTATCTACCCCTTACCTGTGTTTATAACTTCCAGGTAATGAGAATGATT

    |*1891     |*1901     |*1911     |*1921     |*1931     |*1941
TTTTTTAAAGCTAAAATGCCAGTAAATAAAAGTGCTATGACTTGAGCTAAGATATTTGAC

    |*1951     |*1961     |*1971     |*1981     |*1991     |*2001
TCCAATGCCTGTACTGTGTCTACTGCACCACTTTGTAAACACTTCAATTTACTATCTTTG

    |*2011     |*2021     |*2031     |*2041     |*2051     |*2061
AAATGATTGACCTTTAAATTTTTGCCAAATGTTATCTGAAATTGTCTATGAATACCATCT

    |*2071     |*2081     |*2091     |*2101     |*2111 .     .
ACTTCTGTTGTTTTCCCAGGCTTCCATAAACAATGGAGATACATGCAtataggtcatact

 .    .    .    .    .    .    .    .    .    .    .    .
ggtttcctttcatttttgattttctatttctaattttctgaattactgcatgccagttg

 .    .    .    .    .    .    .    .    .    .    .    .
ttgcaaaccacttcaagtacttctatggaaagagatggatgttagtcaattagataaact

 .    .    .    .    .    .    .    .    .    .    .    .
tgccttttaattcaaataaggaagaaaatataaatgctgaaaatgaacattccacatgcc

 .    .    .    .    .    .    .    .    .    .    .    .
agaaaagtggaatttttgtaggcaacacttgagtgggggggagacgggccagtctatacta

 .    .    .    .    .    .    .    .    .    .
cccattgaagtaaagactgctggatgaggccctctgttagagatagt
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LRG Parser: Version: 1.1, Version Date: 11/02/2015
Reader: Version: 1, Version Date: 11/02/2015
Writer: Version: 1, Version Date: 11/02/2015
Control: Version: 1, Version Date: 11/02/2015
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