Gene: MYBPC3 - Sequence: NG_007667.1
Date : January 11, 2015

Exon 1 | Start: 1 | End: 80 | Length: 79


```
         .         .         .         .         .         .         .
cttagggttatgggcccagcatgctcccaccgtacaatttgctgtaagagggacacacac

         .         .         .         .         .         .         .
ggggcttggagtacccctgaggcttgccaaaggttggggaggcagaattgtgctgcggggg

         .         .         .         .         .         .         .
ggtgaggggggaagggacaggagccagccagggacaatgtggccctaccttctccctgga

         .         .         .         .         .         .         .
gagacctcagctctctggaattcatctatatttagcaggtggctggacaggaggcagata

         .         .         .         .         .         .         .
agcagagcctggggagggggaggtccccatatatagtgggaaggacaggaccccactca

      |-49       |-39       |-29       |-19       |-9        |1
AGTCCCTCTTTGGGTGACCTGTGCCTGCTTCGTGCCTGGTGTGACGTCTCTCAGGATGCC
                                                          M  P
                                                          |1

      |11        |21        .         .         .         .         .
TGAGCCGGGGAAGAAGCCAGgtagctttaggactggggttgggtctaagtgtgggagcag
 E  P  G  K  K  P  V


         .         .         .         .         .         .         .
gggggtgtctacaattggggagcagggctaggagggagttcttgagggggttgacgagga

         .         .         .         .         .         .         .
cgtggcctctgagccccaggacaggggcagccagtcctccagggtcctttttttgattctc

         .         .         .         .         .         .         .
ggtttctttttcccatccctctgatgagaggtgaaggtaaacccaaggtcagggacgcag

         .         .         .         .         .         .         .
agaggggacacagccaagacaggaagcacccggggtcaacccattctgagaatgcaaagg

         .         .         .         .
```

1

```
gaccccttccctgtcccatt
```

Exon 2 | Start: 81 | End: 347 | Length: 266

```
.     .     .     .     .     .     .     .     .     .     .     .
tgtctccaagcagggaaagtggacacatgcagaaaaagtcttgttgggaggtcaggacca

.     .     .     .     .     .     .     .     .     .     .     .
cagccctggctctcccgactgctagctgtgtgatcttggaggagccgcttagcttctctg

.     .     .     .     .     .     .     .     .     .     .     .
agcctcagtgtcctcctctgagaaatgaacagaataactgcaactacctcagagaactgg

.     .     .     .     .     .     .     .     .     .     .     .
tagagtattacgtgaggggatgcatagaaagtgctagcacagtatttactgagaggggct

.     .     .     .     .     .     .     .     .     .     .     .
gcaggggcggggtgcacgctccaaccaggggccgctgtagcctccacctggcccttcagt
        |31         |41        |51        |61        |71        |81
TCTCAGCTTTTAGCAAGAAGCCACGGTCAGTGGAAGTGGCCGCAGGCAGCCCTGCCGTGT
  S   A   F   S   K   K   P   R   S   V   E   V   A   A   G   S   P   A   V   F
        |11                              |21

        |91        |101       |111       |121       |131       |141
TCGAGGCCGAGACAGAGCGGGCAGGAGTGAAGGTGCGCTGGCAGCGCGGAGGCAGTGACA
  E   A   E   T   E   R   A   G   V   K   V   R   W   Q   R   G   G   S   D   I
        |31                              |41

        |151       |161       |171       |181       |191       |201
TCAGCGCCAGCAACAAGTACGGCCTGGCCACAGAGGGCACACGGCATACGCTGACAGTGC
  S   A   S   N   K   Y   G   L   A   T   E   G   T   R   H   T   L   T   V   R
        |51                              |61

        |211       |221       |231       |241       |251       |261
GGGAAGTGGGCCCTGCCGACCAGGGATCTTACGCAGTCATTGCTGGCTCCTCCAAGGTCA
  E   V   G   P   A   D   Q   G   S   Y   A   V   I   A   G   S   S   K   V   K
        |71                              |81

        |271       |281       |291   .     .     .     .     .     .
AGTTCGACCTCAAGGTCATAGAGGCAGgtaagatcctgatcagccttccctgaggttttgg
  F   D   L   K   V   I   E   A   E
```

```
    |91

   .    .    .    .    .    .    .    .    .    .    .    .
gctgctgggggaggggcagcccagcgactctccatccatccagggaacaggaggtgcttt

   .    .    .    .    .    .    .    .    .    .    .    .
cacactttcttgcctttgctgtggctgtgccccccgccaggaacgccctttccccctttt

   .    .    .    .    .    .    .    .    .    .    .    .
ctgcacatgacctctctgagtaccccatgtgccatcctggcttgttccagccatggggt

   .    .    .    .    .    .    .    .    .    .    .    .
aggtgggagagatgaacaagacacaaccccactctccccctgcagacctccctggggaga

   .    .    .    .    .    .
tgaccctgcacagacggccgggaagcc
```

Exon 3 | Start: 348 | End: 461 | Length: 113

```
   .    .    .    .    .    .    .    .    .    .    .    .
gcagcccagtctgaggggctgctctaaggctggggcagagcagggatggacctggagctg

   .    .    .    .    .    .    .    .    .    .    .    .
ttcagggcagatgcagaggacatgggaactgatggcctgggacggggaggagaatgtgag

   .    .    .    .    .    .    .    .    .    .    .    .
aggcaggctggctctccagctcagcatgagctgcctctgaggggcccaggcagcgggagg

   .    .    .    .    .    .    .    .    .    .    .    .
acagccatggcagactttcctcatccacagcgggctcatgggtccaatgctcaggagaga

   .    .    .    .    .    .    .    .    .    .    .    .
gagggtggaggggtctctggttagtggctgcaccacgactcccatctgatcccctccaga

        |301      |311      |321      |331      |341      |351
AGAAGGCAGAGCCCATGCTGGCCCCTGCCCCTGCCCCTGCTGAGGCCACTGGAGCCCCTG
  K   A   E   P   M   L   A   P   A   P   A   P   A   E   A   T   G   A   P   G
        |101                                    |111

        |361      |371      |381      |391      |401      .
GAGAAGCCCCGGCCCCAGCCGCTGAGCTGGGAGAAAGTGCCCCAAGTCCCAAAGgtgaga
  E   A   P   A   P   A   A   E   L   G   E   S   A   P   S   P   K   G
```

3

```
          |121                            |131
     .    .    .    .    .    .    .    .    .    .    .    .
     ggggctgggcagggaggggcaggatccgtgggtagggcgtgtccagggcaggtctcaaaa

     .    .    .    .    .    .    .    .    .    .    .    .
     gcctttgctgggccaggtgcggtggctcaggcctataatccccagtactttgggaggccg

     .    .    .    .    .    .    .    .    .    .    .    .
     aggtgggcggatcatgaggtcaggagattgagaccatcctggctaacatgatgaaacccc

     .    .    .    .    .    .    .    .    .    .    .    .
     atctctactaaaaatacaaaaaaattagccgggcgtggtggcgggcacctgcggtcccag

     .    .    .    .    .    .    .    .    .    .    .    .
     ctaacttgggaggctgaggcaggagaatggtgtgaacctgggaggcggagcttg


Exon 4 | Start: 462 | End: 560 | Length: 98



     .    .    .    .    .    .    .    .    .    .    .    .
     gctcaggcctataatccccagtactttgggaggccgaggtgggcggatcatgaggtcagg

     .    .    .    .    .    .    .    .    .    .    .    .
     agattgagaccatcctggctaacatgatgaaaccccatctctactaaaaatacaaaaaaa

     .    .    .    .    .    .    .    .    .    .    .    .
     ttagccgggcgtggtggcgggcacctgcggtcccagctaacttgggaggctgaggcagga

     .    .    .    .    .    .    .    .    .    .    .    .
     gaatggtgtgaacctgggaggcggagcttgcagtgagccgagattgtgcctctgcactcc

     .    .    .    .    .    .    .    .    .    .    .    .
     agcctgggtgacagagcaagactccatctcaaacaaacagaaaaagcctttgctcacagg

        |411      |421      |431      |441      |451      |461
     GGTCAAGCTCAGCAGCTCTCAATGGTCCTACCCCTGGAGCCCCCGATGACCCCATTGGCC
       S   S   S   A   A   L   N   G   P   T   P   G   A   P   D   D   P   I   G   L
                 |141                            |151

        |471      |481      |491      |501    .    .    .    .
     TCTTCGTGATGCGGCCACAGGATGGCGAGGTGACCGTGGgtgagtgtgagctgctgtgcc
       F   V   M   R   P   Q   D   G   E   V   T   V   G
```

4

```
                   |161

        .    .    .    .    .    .    .    .    .    .    .    .
        cagcattggggtgggaaggggggggcagcaggacactcccccaagccgggcctgtcgcccct

        .    .    .    .    .    .    .    .    .    .    .    .
        gcctttgcaggtggcagcatcaccttctcagcccgcgtggccggcgccagcctcctgaag

        .    .    .    .    .    .    .    .    .    .    .    .
        ccgcctgtggtcaagtggttcaagggcaaatgggtggacctgagcagcaaggtgggccag

        .    .    .    .    .    .    .    .    .    .    .    .
        cacctgcagctgcacgacagctacgaccgcgccagcaaggtgggtccaccggggtcgtgg

        .    .    .    .    .    .    .    .
        agacacggagagaggggacatggagagccctagaaggca


        Exon 5 | Start: 561 | End: 709 | Length: 148



        .    .    .    .    .    .    .    .    .    .    .    .
        aacctgggaggcggagcttgcagtgagccgagattgtgcctctgcactccagcctgggtg

        .    .    .    .    .    .    .    .    .    .    .    .
        acagagcaagactccatctcaaacaaacagaaaaagcctttgctcacagggtcaagctca

        .    .    .    .    .    .    .    .    .    .    .    .
        gcagctctcaatggtcctacccctggagcccccgatgaccccattggcctcttcgtgatg

        .    .    .    .    .    .    .    .    .    .    .    .
        cggccacaggatggcgaggtgaccgtgggtgagtgtgagctgctgtgcccagcattgggg

        .    .    .    .    .    .    .    .    .    .    .    .
        tgggaaggggggggcagcaggacactcccccaagccgggcctgtcgcccctgcctttgcagg

            |511       |521       |531       |541       |551       |561
        GTGGCAGCATCACCTTCTCAGCCCGCGTGGCCGGCGCCAGCCTCCTGAAGCCGCCTGTGG
          G   S   I   T   F   S   A   R   V   A   G   A   S   L   L   K   P   P   V   V
            |171                               |181

            |571       |581       |591       |601       |611       |621
        TCAAGTGGTTCAAGGGCAAATGGGTGGACCTGAGCAGCAAGGTGGGCCAGCACCTGCAGC
          K   W   F   K   G   K   W   V   D   L   S   S   K   V   G   Q   H   L   Q   L
```

5

```
      |191                              |201

      |631         |641       |651    .    .    .    .     .      .
TGCACGACAGCTACGACCGCGCCAGCAAGgtgggtccaccgggggtcgtggagacacggag
  H   D   S   Y   D   R   A   S   K
      |211


      .    .    .    .    .    .    .    .    .    .     .      .
agaggggacatggagagccctagaaggcacaaggcacacagagggcaccatgagacccag

      .    .    .    .    .    .    .    .    .    .     .      .
aggcacacacgagctgcaagcaaggggtgtggggaatctgggaggcaggtggaggggcca

      .    .    .    .    .    .    .    .    .    .     .      .
ggggcccacagggagatcccggaggcctggggggccagggagtgcgatgaggctcatggga

      .    .    .    .    .    .    .    .    .    .     .      .
gcactgtcggggacctgggagacttggtggacatgatcacctcaaggggggcacctaataa

      .    .    .    .    .    .
ggtttggccggggggtgggggggtcgcccag



Exon 6 | Start: 710 | End: 827 | Length: 117



      .    .    .    .    .    .    .    .    .    .     .      .
ctccacctcctgggttcaagcgattctccccacctcagcctcccgagtagctgaaactaga

      .    .    .    .    .    .    .    .    .    .     .      .
ggtgtgcaccaccatacttggctaattttcgttattttttagtagagacggaatttcacca

      .    .    .    .    .    .    .    .    .    .     .      .
cgttggccaggctggtctggagctcctggtcttatgtgatccgcccgcctcagcctccca

      .    .    .    .    .    .    .    .    .    .     .      .
aagtggggattacaggcctgagccaccgcgcccggccactcccagtctcctttaagggtg

      .    .    .    .    .    .    .    .    .    .     .      .
cggagccttgtctcccggcccctggtgtcccctgacgccccgtccctccatgcacacagg

      |661        |671        |681        |691        |701        |711
GTCTATCTGTTCGAGCTGCACATCACCGATGCCCAGCCTGCCTTCACTGGCAGCTACCGC
  V   Y   L   F   E   L   H   I   T   D   A   Q   P   A   F   T   G   S   Y   R
```

```
        |221                           |231

        |721       |731       |741       |751       |761       |771
TGTGAGGTGTCCACCAAGGACAAATTTGACTGCTCCAACTTCAATCTCACTGTCCACGgt
C   E   V   S   T   K   D   K   F   D   C   S   N   F   N   L   T   V   H   E
        |241                           |251


    .       .       .       .       .       .       .       .       .       .       .       .
gaggggccctggtgtctgtcctgggctcgggctccccatgggtcctggtctcctacctc


    .       .       .       .       .       .       .       .       .       .       .       .
cttttcccaacactaaggaggatgcctcgtcccatccagacatgagtgctggccacgtgc


    .       .       .       .       .       .       .       .       .       .       .       .
ccagtgctgcacacacagggtgtgagagaaaccccaaggcttgcagggtaggcgtgggggg


    .       .       .       .       .       .       .       .       .       .       .       .
cttagggctgagtccgggtctcatctgggtgggactctgtttttatcatcttggtgtcacg


    .       .       .       .       .       .       .       .       .       .       .       .
gctcctggcccatggcctggcactgtctgaatgtttgggcgatgggtgaaggtgagtt



Exon 7 | Start: 828 | End: 876 | Length: 48



    .       .       .       .       .       .       .       .       .       .       .       .
tgtttttatcatcttggtgtcacggctcctggcccatggcctggcactgtctgaatgtttg


    .       .       .       .       .       .       .       .       .       .       .       .
ggcgatgggtgaaggtgagttgagagatgggtgggaattggggacaataaaccgtcccac


    .       .       .       .       .       .       .       .       .       .       .       .
ctgcctggtaccttgaccctgggaaaggctgggaaggtgagatcctggggcagatgccca


    .       .       .       .       .       .       .       .       .       .       .       .
gcctcatggggtcatgaatgggcaagtctgtgaatactcagaggccgcccccagggcagg


    .       .       .       .       .       .       .       .       .       .       .       .
gcttctcaaacggccccctctgaagccccttcccccatctctccaccctttgaacccaga


        |781       |791       |801       |811       |821   .       .
AGGCCATGGGCACCGGAGACCTGGACCTCCTATCAGCCTTCCGCCGCACgtgagtggcca
  A   M   G   T   G   D   L   D   L   L   S   A   F   R   R   T


                                    7
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
tcctcagggcctggggggaggccagtgctggagtctgaggcccttcagggtctcgactggg

    .     .     .     .     .     .     .     .     .     .     .     .
ggtcagggctggggatgatttgcggggcggagctgaagtcagtgggggctgcaggggaga

    .     .     .     .     .     .     .     .     .     .     .     .
gcaagcttcccaggcaggtgaggatactgagtctaacccccacaggagcctggctggagg

    .     .     .     .     .     .     .     .     .     .     .     .
tggtcggcggatcaggtacccctgccccaggccctacctgcaccatccgcagacccccag

    .     .     .     .     .     .     .     .     .     .     .
gggtctgagacgggtgggagcccaatctggctagtgtccctttctccct
```

Exon 8 | Start: 877 | End: 906 | Length: 29

```
  .     .     .     .     .     .     .     .     .     .     .     .
cgcccccagggcagggcttctcaaacggccccctctgaagccccttcccccatctctcca

  .     .     .     .     .     .     .     .     .     .     .     .
ccctttgaacccagaggccatgggcaccggagacctggacctcctatcagccttccgccg

  .     .     .     .     .     .     .     .     .     .     .     .
cacgtgagtggccatcctcagggcctggggggaggccagtgctggagtctgaggcccttca

  .     .     .     .     .     .     .     .     .     .     .     .
gggtctcgactgggggtcagggctggggatgatttgcggggcggagctgaagtcagtggg

  .     .     .     .     .     .     .     .     .     .     .     .
ggctgcaggggagagcaagcttcccaggcaggtgaggatactgagtctaacccccacagg

      |831       |841       |851 .     .     .     .     .     .
GAGCCTGGCTGGAGGTGGTCGGCGGATCAGgtacccctgccccaggccctacctgcacca
 S   L   A   G   G   G   R   R   I   S
                |281

    .     .     .     .     .     .     .     .     .     .     .     .
tccgcagacccccaggggtctgagacgggtgggagcccaatctggctagtgtccctttct
```

```
       .         .         .         .         .         .         .         .         .         .         .         .
ccctccccactccactcccatcctgctcctaatccctttccagtccctcactgcagcctc

       .         .         .         .         .         .         .         .         .         .         .         .
actgggggtccctctccatagtgatagccatgaggacactgggattctggacttcagctc

       .         .         .         .         .         .         .         .         .         .         .         .
actgctgaaaaagaggtgagtcctgggtggcagttcctggggcagctggtgaggcctggc

       .         .         .         .         .         .
tccaaatcccagcactgtggtttgccagct


Exon 9 | Start: 907 | End: 960 | Length: 53


       .         .         .         .         .         .         .         .         .         .         .         .
gctggggatgatttgcggggcggagctgaagtcagtgggggctgcaggggagagcaagct

       .         .         .         .         .         .         .         .         .         .         .         .
tcccaggcaggtgaggatactgagtctaacccccacaggagcctggctggaggtggtcgg

       .         .         .         .         .         .         .         .         .         .         .         .
cggatcaggtacccctgccccaggccctacctgcaccatccgcagaccccccaggggtctg

       .         .         .         .         .         .         .         .         .         .         .         .
agacgggtgggagcccaatctggctagtgtccctttctccctccccactccactcccatc

       .         .         .         .         .         .         .         .         .         .         .         .
ctgctcctaatccctttccagtccctcactgcagcctcactgggggtccctctccatagt
        |861       |871       |881       |891       |901          .
TGATAGCCATGAGGACACTGGGATTCTGGACTTCAGCTCACTGCTGAAAAAGAGgtgagt
 D   S   H   E   D   T   G   I   L   D   F   S   S   L   L   K   K   R
                   |291                                 |301

       .         .         .         .         .         .         .         .         .         .         .         .
cctgggtggcagttcctggggcagctggtgaggcctggctccaaatcccagcactgtggt

       .         .         .         .         .         .         .         .         .         .         .         .
ttgccagctgtgtgaccctgagcacaacactgcacctctctgagttggtttccttgtctg

       .         .         .         .         .         .         .         .         .         .         .         .
tcgaggggatgatcccagtgtggaaggagttaaagggctctgcagacattatgtcccgtc
```

9

```
          .         .         .         .         .         .         .         .         .         .         .         .
aacagtcatcctcacagtgtcccccacggccactccacacttgaggctgcaaaagctccc

          .         .         .         .         .         .         .         .         .         .         .
tccgtaaactccggggacccagaaggaacagagagagggtccccagagctgcag
```

Exon 10 | Start: 961 | End: 963 | Length: 2

```
  .         .         .         .         .         .         .         .         .         .         .         .
gcacctctctgagttggtttccttgtctgtcgaggggatgatcccagtgtggaaggagtt

  .         .         .         .         .         .         .         .         .         .         .
aaagggctctgcagacattatgtcccgtcaacagtcatcctcacagtgtcccccacggcc

  .         .         .         .         .         .         .         .         .         .         .
actccacacttgaggctgcaaaagctccctccgtaaactccggggacccagaaggaacag

  .         .         .         .         .         .         .         .         .         .         .
agagagggtccccagagctgcagggtctaccaggtcggcccaactgacttatgttctctc

  .         .         .         .         .         .         .         .         .         .         .
tgccctctctctccctctcccccggcccctccattatggctgctgctgctgtggcccaga

          .         .         .         .         .         .         .         .         .         .
AGAgtaagaatcggggtctgggtgtttgggggcggcagggcgctggtgggtgcagagggg
 D

    .         .         .         .         .         .         .         .         .         .         .
attcccgtcccctctctgagaggctgtggtgagagactcagagcagggtgcggctcccca

    .         .         .         .         .         .         .         .         .         .         .
cggacaggggtgagtctctgtgccttgggcttctcctgccacccacctatctgtcagagc

    .         .         .         .         .         .         .         .         .         .         .
ttaggagggataagaaaaagtaatgcacacaggaggtcctgccagagcctccggagcagc

    .         .         .         .         .         .         .         .         .         .         .
atgggtgccccacaacacagggagtgcaagtgcggaaaatagggaggaagtaaaggccca

    .
```

10

```
tgg
```

Exon 11 | Start: 964 | End: 981 | Length: 17

```
      .         .         .         .         .         .         .
tggtgagagactcagagcagggtgcggctccccacggacaggggtgagtctctgtgcctt

      .         .         .         .         .         .         .
gggcttctcctgccacccacctatctgtcagagcttaggagggataagaaaaagtaatgc

      .         .         .         .         .         .         .
acacaggaggtcctgccagagcctccggagcagcatgggtgccccacaacacagggagtg

      .         .         .         .         .         .         .
caagtgcggaaaatagggaggaagtaaaggcccatgggtggggtccaggtctttgaggga

      .         .         .         .         .         .         .
aggtggccatacctctcatgtgccacctaccctttctcccacccccacccctggagcagc

   |911        |921        .         .         .         .         .
CAGTTTCCGGACCCCGAGgtgagtgcccaacatagcacagcaccctcatcacccctaatt
 S  F  R  T  P  R

      .         .         .         .         .         .         .
ctgccaggagcccctccagatccccagcccctcttcagctcccttggcccccagtcctgc

      .         .         .         .         .         .         .
ctggcctgggacccagagcagctccagctgccccaccagaagggaaggggcagagggaca

      .         .         .         .         .         .         .
ggggtggctacagctccttggtcctgggcccaggaagccccgcccaggggggctgcagtct

      .         .         .         .         .         .         .
tgcccccggccacagcctagactgcgggacacagggactcgaagctggaggcaccagcag

      .         .         .         .
aggaggacgtgtgggaga
```

Exon 12 | Start: 982 | End: 1145 | Length: 163

```
        .       .       .       .       .       .       .       .       .       .       .       .
     tctcccacccccacccctggagcagcagtttccggaccccgaggtgagtgcccaacatag

        .       .       .       .       .       .       .       .       .       .       .       .
     cacagcaccctcatcacccctaattctgccaggagcccctccagatccccagcccctctt

        .       .       .       .       .       .       .       .       .       .       .       .
     cagctcccttggcccccagtcctgcctggcctgggacccagagcagctccagctgcccca

        .       .       .       .       .       .       .       .       .       .       .       .
     ccagaagggaaggggcagagggacaggggtggctacagctccttggtcctgggcccagga

        .       .       .       .       .       .       .       .       .       .       .       .
     agccccgcccaggggggctgcagtcttgcccccggccacagcctagactgcgggacacagg

         |931       |941       |951       |961       |971       |981
     GGACTCGAAGCTGGAGGCACCAGCAGAGGAGGACGTGTGGGAGATCCTACGGCAGGCACC
      D   S   K   L   E   A   P   A   E   E   D   V   W   E   I   L   R   Q   A   P
         |311                                           |321

         |991       |1001      |1011      |1021      |1031      |1041
     CCCATCTGAGTACGAGCGCATCGCCTTCCAGTACGGCGTCACTGACCTGCGCGGCATGCT
      P   S   E   Y   E   R   I   A   F   Q   Y   G   V   T   D   L   R   G   M   L
         |331                                           |341

         |1051      |1061      |1071      |1081          .       .       .
     AAAGAGGCTCAAGGGCATGAGGCGCGATGAGAAGAAGAGCACAGgttagcccttcctcag
      K   R   L   K   G   M   R   R   D   E   K   K   S   T   A
         |351                                           |361

        .       .       .       .       .       .       .       .       .       .       .       .
     aggggagaggagagggcacaggctagcccttccctacacaggagaggagagggcataggt

        .       .       .       .       .       .       .       .       .       .       .       .
     tagcccttccccacaggggagaggagagggcacaggttagcccccccacctcgtccacata

        .       .       .       .       .       .       .       .       .       .       .       .
     catggaaagagcggagtccggcttagcacagagactcacaggaaagaagagcccaggtta

        .       .       .       .       .       .       .       .       .       .       .       .
     acccctccttgtgtagaaaaagccaagaatgcccaggttagccccttaccacagagatag

        .       .       .       .       .       .       .       .       .
```

aagagaagagcaaaagttaggccaggacagccacaaggaaaagg

Exon 13 | Start: 1146 | End: 1278 | Length: 132


```
        .         .         .         .         .         .         .         .         .         .         .         .
ccagctactcgggaggccgaggcaggagaatcacttgaacctgggaggcagaggttgcag

        .         .         .         .         .         .         .         .         .         .         .         .
tgagccaagatggcgccattgcactccagcctggccaacagagcaagactctgtccaaaa

        .         .         .         .         .         .         .         .         .         .         .         .
aacaaacaaacagacaaacaaacaaaacaaaaagaaatagagacacagagaagtggaagc

        .         .         .         .         .         .         .         .         .         .         .         .
ggggcggcacagaggggattggagggggggacctgggccccagccacagccacagtagct

        .         .         .         .         .         .         .         .         .         .         .         .
tggcctggggggagcagggtgcgggcggtggggtggccggggctgaggggtggtgctcagc

|1091      |1101      |1111      |1121      |1131      |1141
CCTTTCAGAAGAAGCTGGAGCCGGCCTACCAGGTGAGCAAAGGCCACAAGATCCGGCTGA
  F   Q   K   K   L   E   P   A   Y   Q   V   S   K   G   H   K   I   R   L   T
                        |371                                 |381

|1151      |1161      |1171      |1181      |1191      |1201
CCGTGGAACTGGCTGACCATGACGCTGAGGTCAAATGGCTCAAGAATGGCCAGGAGATCC
  V   E   L   A   D   H   D   A   E   V   K   W   L   K   N   G   Q   E   I   Q
                        |391                                 |401

|1211      |1221    .         .         .         .         .         .         .         .         .
AGATGAGCGGCAGgtgcagcctggggtggggagggggggctcgggtggaggtggggacccc
  M   S   G   S


        .         .         .         .         .         .         .         .         .         .         .         .
catagccttgcctcctgcccctctccacatgcgtatctctgactcggtgtggctctcagc

        .         .         .         .         .         .         .         .         .         .         .         .
cccatctctctgggcctaatttcccatccttttgctcctgccggtccctctctctctctc

        .         .         .         .         .         .         .         .         .         .         .         .
cttttgtctcgggctcacttcctcccgtcgggaacacttcaacggccccttctgttctac
```

     .   .   .   .

agcaagtaagttcccctctggatggcttggggtggggggcacagggattatcatggggcg

     .   .   .

cactgggcccgga

Exon 14 | Start: 1279 | End: 1281 | Length: 2

  .   .   .   .

tggaactggctgaccatgacgctgaggtcaaatggctcaagaatggccaggagatccaga

  .   .   .   .

tgagcggcaggtgcagcctggggtggggagggggctcgggtggaggtggggaccccat

  .   .   .   .

agccttgcctcctgcccctctccacatgcgtatctctgactcggtgtggctctcagcccc

  .   .   .   .

atctctctgggcctaatttcccatccttttgctcctgccggtccctctctctctctcctt

  .   .   .   .

ttgtctcgggctacttcctcccgtcgggaacacttcaacggccccttctgttctacagc

     .   .   .   .

CAAgtaagttcccctctggatggcttggggtggggggcacagggattatcatggggcgca
 K

     .   .   .   .

ctgggcccggaggggtgtccgcagctttcctgccacttccctgcggcccccacccaggta

     .   .   .   .

catctttgagtccatcggtgccaagcgtaccctgaccatcagccagtgctcattggcgga

     .   .   .   .

cgacgcagcctaccagtgcgtggtgggtggcgagaagtgtagcacggagctctttgtgaa

     .   .   .   .

aggtgggcctgggacctgaggatgtgggaacctggggaggagatggcctcaggggagcca

     .

acc

Exon 15 | Start: 1282 | End: 1406 | Length: 124


```
      .         .         .         .         .         .         .
catagccttgcctcctgcccctctccacatgcgtatctctgactcggtgtggctctcagc

      .         .         .         .         .         .         .
cccatctctctgggcctaatttcccatccttttgctcctgccggtccctctctctctctc

      .         .         .         .         .         .         .
cttttgtctcgggctcacttcctcccgtcgggaacacttcaacggccccttctgttctac

      .         .         .         .         .         .         .
agcaagtaagttcccctctggatggcttggggtgggggggcacagggattatcatggggcg

      .         .         .         .         .         .         .
cactgggcccggaggggtgtccgcagctttcctgccacttccctgcggcccccacccagg

       |1231      |1241      |1251      |1261      |1271      |1281
GTACATCTTTGAGTCCATCGGTGCCAAGCGTACCCTGACCATCAGCCAGTGCTCATTGGC
  Y   I   F   E   S   I   G   A   K   R   T   L   T   I   S   Q   C   S   L   A
    |411                                 |421

       |1291      |1301      |1311      |1321      |1331      |1341
GGACGACGCAGCCTACCAGTGCGTGGTGGGTGGCGAGAAGTGTAGCACGGAGCTCTTTGT
  D   D   A   A   Y   Q   C   V   V   G   G   E   K   C   S   T   E   L   F   V
    |431                                 |441

       |1351.        .         .         .         .         .         .
GAAAGgtgggcctgggacctgaggatgtgggaacctggggaggagatggcctcaggggag
  K   E
    |451


        .         .         .         .         .         .         .
ccaaccctcatgctcaccctgcctggacagagccccctgtgctcatcacgcgccccttgg

        .         .         .         .         .         .         .
aggaccagctggtgatggtggggcagcgggtggagtttgagtgtgaagtatcggaggagg

        .         .         .         .         .         .         .
gggcgcaagtcaaatggtgagttccagaagcacggggcatgggtgttgggggcatctgcc
```

15

```
         .         .         .         .         .         .         .         .         .         .         .         .
cagaagaggccacagcacttgccacccacccacccggctaggctgaaggacggggtggag

         .
ctgac


Exon 16 | Start: 1407 | End: 1512 | Length: 105


         .         .         .         .         .         .         .         .         .         .         .         .
ggtgggggggcacagggattatcatggggcgcactgggcccggaggggtgtccgcagcttt

         .         .         .         .         .         .         .         .         .         .         .         .
cctgccacttccctgcggcccccacccaggtacatctttgagtccatcggtgccaagcgt

         .         .         .         .         .         .         .         .         .         .         .         .
accctgaccatcagccagtgctcattggcggacgacgcagcctaccagtgcgtggtgggt

         .         .         .         .         .         .         .         .         .         .         .         .
ggcgagaagtgtagcacggagctctttgtgaaaggtgggcctgggacctgaggatgtggg

         .         .         .         .         .         .         .         .         .         .         .         .
aacctggggaggagatggcctcaggggagccaaccctcatgctcaccctgcctggacaga

          |1361        |1371        |1381        |1391        |1401        |1411
AGCCCCCTGTGCTCATCACGCGCCCCTTGGAGGACCAGCTGGTGATGGTGGGGCAGCGGG
   P  P  V  L  I  T  R  P  L  E  D  Q  L  V  M  V  G  Q  R  V
                              |461                              |471

          |1421        |1431        |1441        |1451          .         .
TGGAGTTTGAGTGTGAAGTATCGGAGGAGGGGGGCGCAAGTCAAATGgtgagttccagaag
   E  F  E  C  E  V  S  E  E  G  A  Q  V  K  W
                              |481

         .         .         .         .         .         .         .         .         .         .         .         .
cacggggcatgggtgttgggggcatctgcccagaagaggccacagcacttgccacccacc

         .         .         .         .         .         .         .         .         .         .         .         .
cacccggctaggctgaaggacggggtggagctgacccgggaggagaccttcaaataccgg

         .         .         .         .         .         .         .         .         .         .         .         .
ttcaagaaggacgggcagagacaccacctgatcatcaacgaggccatgctggaggacgcg
```

16

```
        .         .         .         .         .         .         .         .         .         .         .         .
        gggcactatgcactgtgcactagcggggggccaggcgctggctgagctcattgtgcagggt

        .         .         .         .         .         .         .         .         .         .         .         .
        gagcctggctggggggggcacatgaggctttagggcttggaccccctc



Exon 17 | Start: 1513 | End: 1679 | Length: 166



        .         .         .         .         .         .         .         .         .         .         .         .
        tagcacggagctctttgtgaaaggtgggcctgggacctgaggatgtgggaacctggggag

        .         .         .         .         .         .         .         .         .         .         .         .
        gagatggcctcaggggagccaaccctcatgctcaccctgcctggacagagccccctgtgc

        .         .         .         .         .         .         .         .         .         .         .         .
        tcatcacgcgcccccttggaggaccagctggtgatggtggggcagcgggtggagtttgagt

        .         .         .         .         .         .         .         .         .         .         .         .
        gtgaagtatcggaggagggggcgcaagtcaaatggtgagttccagaagcacggggcatgg

        .         .         .         .         .         .         .         .         .         .         .         .
        gtgttgggggcatctgcccagaagaggccacagcacttgccacccacccacccggctagg

           |1461      |1471      |1481      |1491      |1501      |1511
        GCTGAAGGACGGGGTGGAGCTGACCCGGGAGGAGACCTTCAAATACCGGTTCAAGAAGGA
         L   K   D   G   V   E   L   T   R   E   E   T   F   K   Y   R   F   K   K   D
                   |491                                   |501

           |1521      |1531      |1541      |1551      |1561      |1571
        CGGGCAGAGACACCACCTGATCATCAACGAGGCCATGCTGGAGGACGCGGGGCACTATGC
         G   Q   R   H   H   L   I   I   N   E   A   M   L   E   D   A   G   H   Y   A
                   |511                                   |521

           |1581      |1591      |1601      |1611      |1621       .         .
        ACTGTGCACTAGCGGGGGGCCAGGCGCTGGCTGAGCTCATTGTGCAGGgtgagcctggctg
         L   C   T   S   G   G   Q   A   L   A   E   L   I   V   Q   E
                   |531                                   |541


        .         .         .         .         .         .         .         .         .         .         .         .
        gggggggcacatgaggctttagggcttggaccccctcagcccccacccccacctagccctgta
```

17

```
          .         .         .         .         .         .         .         .         .         .
          gggggagcaggcaaacctgggctcaaggcctctgtgaccttgggcctttgacagcctaaac

          .         .         .         .         .         .         .         .         .         .
          ctcatccttctcatctctaaaatgacgatgctgaggtgaccgctccagagggtactgaga

          .         .         .         .         .         .         .         .         .         .
          gggtcatacgggcctggtgagcatcaccacccctcagacacttgaggttccttatgtgca

          .         .         .         .         .         .         .         .         .         .
          ctgcaccatcacaggcaaacatggcacacacaggcacacgtgttttc


Exon 18 | Start: 1680 | End: 1845 | Length: 165


          .         .         .         .         .         .         .         .         .         .
          acagcctaaacctcatccttctcatctctaaaatgacgatgctgaggtgaccgctccaga

          .         .         .         .         .         .         .         .         .         .
          gggtactgagagggtcatacgggcctggtgagcatcaccacccctcagacacttgaggtt

          .         .         .         .         .         .         .         .         .         .
          ccttatgtgcactgcaccatcacaggcaaacatggcacacacaggcacacgtgttttcac

          .         .         .         .         .         .         .         .         .         .
          atgcccacatgcacccagacacgtgcgcaccagcgcccatgggcccacacgccctccaca

          .         .         .         .         .         .         .         .         .         .
          gggattcacgccacacccacacaccctccccgagctcaatggctctgccctgccctgcaga

              |1631      |1641      |1651      |1661      |1671      |1681
          AAAAGAAGCTGGAGGTGTACCAGAGCATCGCAGACCTGATGGTGGGCGCAAAGGACCAGG
            K   K   L   E   V   Y   Q   S   I   A   D   L   M   V   G   A   K   D   Q   A
                                            |551                               |561

              |1691      |1701      |1711      |1721      |1731      |1741
          CGGTGTTCAAATGTGAGGTCTCAGATGAGAATGTTCGGGGTGTGTGGCTGAAGAATGGGA
            V   F   K   C   E   V   S   D   E   N   V   R   G   V   W   L   K   N   G   K
                                            |571                               |581

              |1751      |1761      |1771      |1781          .         .
          AGGAGCTGGTGCCCGACAGCCGCATAAAGGTGTCCCACATCGGGCGgtgagtgtgcaggg
            E   L   V   P   D   S   R   I   K   V   S   H   I   G   R
```

18

.   .   .   .
caggtggatgggacaggtggagactgagatggagacagagagagacacagggagaaacag

.   .   .   .
agagagagagataaagacaggtggacagagaggcagatgcacagagacaggacagagact

.   .   .   .
gagacagagacccacagagagggagaaacagacagacccaaaaagacaaagagacagaaa

.   .   .   .
gacagaaatagttctatagagacagaaagatatgcacagggaggcacacacataggagag

.   .   .   .
ttcgtcagagacagagaagaacagagggacagagacaaagaggcag

Exon 19 | Start: 1846 | End: 1952 | Length: 106

.   .   .   .
gggctggccgtgctgggcccaagttcacagagattaatgagacccagcccctgcccagtc

.   .   .   .
tccaagggcccagccaaggagatgctttgatgtagaaatcacttttacgctgcctacctc

.   .   .   .
tgaaggcacattaaaaagctggaaaattagataatatagaaaaaaaaaggcatttttaaa

.   .   .   .
aatcagaataccaacaagccaggacaaggtgagggcctcctgggaccctggctggggtat

.   .   .   .
ctggcaaggccaggggtgtgtggcccagtggggtcccctgagccactgctcccctgcagg

|1791 |1801 |1811 |1821 |1831 |1841
GGTCCACAAACTGACCATTGACGACGTCACACCTGCCGACGAGGCTGACTACAGCTTTGT
 V   H   K   L   T   I   D   D   V   T   P   A   D   E   A   D   Y   S   F   V
          |601 |611

|1851 |1861 |1871 |1881 |1891   .   .
GCCCGAGGGCTTCGCCTGCAACCTGTCAGCCAAGCTCCACTTCATGGgtgagcctgctcc
 P   E   G   F   A   C   N   L   S   A   K   L   H   F   M   E

19

```
          |621                           |631

    .     .     .     .     .     .     .     .     .     .     .     .
agggtagggtgggtcggggcagtggggccaggagcccctgtcactgggccctgcctttgc

    .     .     .     .     .     .     .     .     .     .     .     .
ccccgtgctacttgctcttccttctcttgcagaggtcaagattgacttcgtacccaggca

    .     .     .     .     .     .     .     .     .     .     .     .
gggtaagtcttggggcccctgagtcttggttctgctcactttcccgcaacccacccacgc

    .     .     .     .     .     .     .     .     .     .     .     .
aggcctcccctccactcacagagggaagagcaaggatcaaaagtggggggtcctggggccc

    .     .     .     .     .     .     .     .     .     .     .     .
agcttcagctttgccactcatgaccatgggtcaattataatctctgt



Exon 20 | Start: 1953 | End: 1982 | Length: 29



    .     .     .     .     .     .     .     .     .     .     .     .
gggcctcctgggaccctggctggggtatctggcaaggccaggggtgtgtggcccagtggg

    .     .     .     .     .     .     .     .     .     .     .     .
gtcccctgagccactgctcccctgcagggtccacaaactgaccattgacgacgtcacacc

    .     .     .     .     .     .     .     .     .     .     .     .
tgccgacgaggctgactacagctttgtgcccgagggcttcgcctgcaacctgtcagccaa

    .     .     .     .     .     .     .     .     .     .     .     .
gctccacttcatgggtgagcctgctccagggtagggtgggtcggggcagtggggccagga

    .     .     .     .     .     .     .     .     .     .     .     .
gcccctgtcactgggccctgcctttgcccccgtgctacttgctcttccttctcttgcaga

    |1901      |1911      |1921      .     .     .     .     .     .
AGGTCAAGATTGACTTCGTACCCAGGCAGGgtaagtcttggggcccctgagtcttggttc
   V   K   I   D   F   V   P   R   Q   E
                          |641

    .     .     .     .     .     .     .     .     .     .     .     .
tgctcactttcccgcaacccacccacgcaggcctcccctccactcacagagggaagagca


                              20
```

```
        .         .         .         .         .         .         .
aggatcaaaagtgggggtcctggggcccagcttcagctttgccactcatgaccatgggtc

        .         .         .         .         .         .         .
aattataatctctgtgagcctcagtttcctcttctctaaaatgggaaccctgatagtgcc

        .         .         .         .         .         .         .
acctcataggatagttataaagatgaggtgacatgatgtatcagacctgtcaagtgctgt

        .         .         .         .         .
cacatgtgtgactgttattattacatcttt
```

Exon 21 | Start: 1983 | End: 2122 | Length: 139

```
  .         .         .         .         .         .         .         .
actgatgttcccccagttttcaaaatgctatgctaggtgacctgacctgaatattacaag

  .         .         .         .         .         .         .         .
cctcccagccaacgtcctggggtgatgggaatgttccagatcttggttggattaataatt

  .         .         .         .         .         .         .         .
gcatgggtgtattcatctgtcagaactcagcctactgtcagatctgagcataaactatac

  .         .         .         .         .         .         .         .
ctcaatacaaatctaaaaaaccaataaccaggggcccaggctcttgagcagccccgcccc

  .         .         .         .         .         .         .         .
agtgacctgtgctcctcctggctctcccgtttctctgaactacattgtgtcttctgcaga
```

```
    |1931      |1941      |1951      |1961      |1971      |1981
AACCTCCCAAGATCCACCTGGACTGCCCAGGCCGCATACCAGACACCATTGTGGTTGTAG
  P   P   K   I   H   L   D   C   P   G   R   I   P   D   T   I   V   V   A
                        |651                                   |661
```

```
    |1991      |2001      |2011      |2021      |2031      |2041
CTGGAAATAAGCTACGTCTGGACGTCCCTATCTCTGGGGACCCTGCTCCCACTGTGATCT
  G   N   K   L   R   L   D   V   P   I   S   G   D   P   A   P   T   V   I   W
                        |671                                   |681
```

```
    |2051      |2061      .         .         .         .         .         .
GGCAGAAGGCTATCACGCAGgtactgtgggtccctcctcagtctccccatctataagatg
  Q   K   A   I   T   Q
```

```
            .         .         .         .         .         .         .         .         .         .
       ggtgtgtggaaccagccaagtgctaggacctgctgcacaccccacccacatgtgcacgcc

            .         .         .         .         .         .         .         .         .         .
       ctgctgttggctaccccatgggagagactggtcagggggcaggcaaggtgggcagtgtgg

            .         .         .         .         .         .         .         .         .         .
       gtcagggggtggaagaagcagcagaggggcgcttccaggctgagtcagctcctctgctcc

            .         .         .         .         .         .         .         .         .         .
       ctacttccctcctgccctgttcccaggggaataaggccccagccaggccagccccagatg

            .         .         .         .
       ccccagaggacacaggtgac
```

Exon 22 | Start: 2123 | End: 2203 | Length: 80

```
            .         .         .         .         .         .         .         .         .         .
       ctatctctggggaccctgctcccactgtgatctggcagaaggctatcacgcaggtactgt

            .         .         .         .         .         .         .         .         .         .
       gggtccctcctcagtctccccatctataagatgggtgtgtggaaccagccaagtgctagg

            .         .         .         .         .         .         .         .         .         .
       acctgctgcacaccccacccacatgtgcacgccctgctgttggctaccccatgggagaga

            .         .         .         .         .         .         .         .         .         .
       ctggtcagggggcaggcaaggtgggcagtgtgggtcagggggtggaagaagcagcagagg

            .         .         .         .         .         .         .         .         .         .
       ggcgcttccaggctgagtcagctcctctgctccctacttccctcctgccctgttcccagg

          |2071      |2081      |2091      |2101      |2111      |2121
       GGGAATAAGGCCCCAGCCAGGCCAGCCCCAGATGCCCCAGAGGACACAGGTGACAGCGAT
       G   N   K   A   P   A   R   P   A   P   D   A   P   E   D   T   G   D   S   D
          |691                                    |701

          |2131      |2141      .         .         .         .         .         .         .
       GAGTGGGTGTTTGACAAGAAGgtgagtgagactgaggtcaggaggaggctcgtttgtctt
       E   W   V   F   D   K   K
```

22

|711

. . . .
tcatcactttctacctacgtggtgccgagcccttggcgaggtctccatggaggtgccaca

. . . .
cttggccgggtgtgttgctgcccccagcagggtccctgtggggccctcacacctcaggca

. . . .
gagggtctctgtgaagtgtgctgatggccatcacaaggatgtggacaccctctcattgcc

. . . .
aggaagccctcatgactgggctgctccctggctcccttcatcctaagctgaccttgacct

. . . . . .
tgaccttgtgctccctctcaa

Exon 23 | Start: 2204 | End: 2363 | Length: 159

. . . .
gggtcttgctcctgcctggcactgttggttcttctgaaggctggggtcttgaggggtcct

. . . .
catgatagctcatctgagaggacaggtggttgccccaggtcccgtgacaaagctagaacc

. . . .
cgagcccctgccctcagtcggtgccacagagatgattttgaactagatgctgacgtggat

. . . .
gcagtcttcccacaggctgtgttccccccatggaccccgggacatctggctgttggcgg

. . . .
aggctgcaagggcctctggggtctgacttggatctcaccccaactctgcacccccccagc

  |2151 |2161 |2171 |2181 |2191 |2201
CTGCTGTGTGAGACCGAGGGCCGGGTCCGCGTGGAGACCACCAAGGACCGCAGCATCTTC
L L C E T E G R V R V E T T K D R S I F
         |721 |731

  |2211 |2221 |2231 |2241 |2251 |2261
ACGGTCGAGGGGGGCAGAGAAGGAAGATGAGGGCGTCTACACGGTCACAGTGAAGAACCCT
T V E G A E K E D E G V Y T V T V K N P

23

```
                    |741                             |751

    |2271      |2281      |2291      |2301        .         .         .         .
GTGGGCGAGGACCAGGTCAACCTCACAGTCAAGGTCATCGgtgaggccggccgggggtcca
V  G  E  D  Q  V  N  L  T  V  K  V  I  D
                    |761


         .         .         .         .         .         .         .         .         .         .
agctggagaacacagaggggcagccccaaggagggcccatccgttcgctcattcagccac


         .         .         .         .         .         .         .         .         .         .
tcgacaaacatcacgggcatgctccctgagccgagcggcaacaggacaggttttttctgcc


         .         .         .         .         .         .         .         .         .         .
caaaaggagccccgctctggggggagatggaggcagatgcatccagcagatttcctgcgac


         .         .         .         .         .         .         .         .         .         .
actgctgtacatgagccatgtccagagtgccgtgggagcactgagcagagagccatccct


         .         .         .         .         .         .         .         .
gtgcctggggggtgatgcctttaggaggctgagaagatggt



Exon 24 | Start: 2364 | End: 2468 | Length: 104



         .         .         .         .         .         .         .         .         .         .
caggacaggggtgaatatgggcagtgagaagccttaaagggttgacggagggctggcgac


         .         .         .         .         .         .         .         .         .         .
atgatcagaaatgcatcctgttgagacccagcctggacaacacagtgagactccatatca


         .         .         .         .         .         .         .         .         .         .
ctaaaaaaaaaaaaaaaaaaaaggaaaagaagaaagaaatgcattctagaaagatctcttt


         .         .         .         .         .         .         .         .         .         .
ggatctggggggtggtgggggcagcctgtggcggttagttggagtgggaaggggacgagca


         .         .         .         .         .         .         .         .         .         .
acgttactcaaggccctgagcggggcagggctgatgtgggtccatcccaccccatccaga

    |2311      |2321      |2331      |2341      |2351      |2361
ACGTGCCAGACGCACCTGCGGCCCCCAAGATCAGCAACGTGGGAGAGGACTCCTGCACAG
  V  P  D  A  P  A  A  P  K  I  S  N  V  G  E  D  S  C  T  V
```

```
   |771                              |781

   |2371       |2381      |2391      |2401      |2411   .      .      .
TACAGTGGGAGCCGCCTGCCTACGATGGCGGGCAGCCCATCCTGGgtgagtgcaagggca
 Q   W   E   P   P   A   Y   D   G   G   Q   P   I   L   G
   |791                              |801


          .       .       .       .       .       .       .       .       .       .
ccggatggaggtgtgagggcgccaaacagatccgagggaaggtggtgtgggggatgcctgg


          .       .       .       .       .       .       .       .       .       .
gttccagaccagagctgccacctcccctgagccaggctacatcctggagcgcaagaagaa


          .       .       .       .       .       .       .       .       .       .
gaagagctaccggtggatgcggctgaacttcgacctgattcaggagctgagtcatgaagc


          .       .       .       .       .       .       .       .       .       .
gcggcgcatgatcgagggcgtggtgtacgagatgcgcgtctacgcggtcaacgccatcgg


          .       .       .       .       .       .       .       .       .
catgtccaggcccagccctgcctcccagcccttcatgcctatcgg




Exon 25 | Start: 2469 | End: 2657 | Length: 188




          .       .       .       .       .       .       .       .       .       .
agttggagtgggaaggggacgagcaacgttactcaaggccctgagcggggcagggctgat


          .       .       .       .       .       .       .       .       .       .
gtgggtccatcccaccccatccagacgtgccagacgcacctgcggcccccaagatcagca


          .       .       .       .       .       .       .       .       .       .
acgtgggagaggactcctgcacagtacagtgggagccgcctgcctacgatggcgggcagc


          .       .       .       .       .       .       .       .       .       .
ccatcctgggtgagtgcaagggcaccggatggaggtgtgagggcgccaaacagatccgag


          .       .       .       .       .       .       .       .       .       .
ggaaggtggtgtgggggatgcctgggttccagaccagagctgccacctcccctgagccagg

         |2421      |2431      |2441      |2451      |2461      |2471
GCTACATCCTGGAGCGCAAGAAGAAGAAGAGCTACCGGTGGATGCGGCTGAACTTCGACC
   Y   I   L   E   R   K   K   K   K   S   Y   R   W   M   R   L   N   F   D   L
```

```
                    |811                             |821

        |2481       |2491       |2501       |2511       |2521       |2531
TGATTCAGGAGCTGAGTCATGAAGCGCGGCGCATGATCGAGGGCGTGGTGTACGAGATGC
  I  Q  E  L  S  H  E  A  R  R  M  I  E  G  V  V  Y  E  M  R
                    |831                             |841

        |2541       |2551       |2561       |2571       |2581       |2591
GCGTCTACGCGGTCAACGCCATCGGCATGTCCAGGCCCAGCCCTGCCTCCCAGCCCTTCA
  V  Y  A  V  N  A  I  G  M  S  R  P  S  P  A  S  Q  P  F  M
                    |851                             |861

        |2601   .        .        .        .        .        .        .        .        .        .
TGCCTATCGgtgagcctgcctggcctggtcctgcccccgcccctccccagttaaaaac
  P  I  G


        .        .        .        .        .        .        .        .        .        .        .
ctccaataatagcaggtgctctgcaggcagccatgctagacactcacatccacagtctcc

        .        .        .        .        .        .        .        .        .        .        .
tttcatcctcgactggggatactcagccgcattttacagatgaggaaacaggctccaagc

        .        .        .        .        .        .        .        .        .        .        .
agttaaatgacctgcttgagatctcccagctggttggggtggagctgactctcacactac

        .        .        .        .        .        .        .        .        .        .        .
gccgacccctagttcacgtttcaagcctctctttccatgtctacaaaatgggaataatga

        .        .
cactgccta



Exon 26 | Start: 2658 | End: 2792 | Length: 134



.        .        .        .        .        .        .        .        .        .        .
tcaccatgttggccaggctggtcttgaactcctgacctcaggtgatcctcccacctcggc

.        .        .        .        .        .        .        .        .        .        .
ctcccaaagtgctgggattacaggcgtgagccaccgtgcctggctgctgttgctgtttgt

.        .        .        .        .        .        .        .        .        .        .
ttttaagccaatctacagacatgtcttgtaacagggacaaaatattccttaaagtggcca
```

```
          .         .         .         .         .         .         .         .         .         .         .         .
     aaagccagctgaacaggaagtgcccctatgtgaccagtgggcagttcagagtctagggc

          .         .         .         .         .         .         .         .         .         .         .         .
     atggatctccagcttccccaggcttgctcagacccctctctgacctctcctctgcccagg

              |2611      |2621      |2631      |2641      |2651      |2661
     GTCCCCCCAGCGAACCCACCCACCTGGCAGTAGAGGACGTCTCTGACACCACGGTCTCCC
       P  P  S  E  P  T  H  L  A  V  E  D  V  S  D  T  T  V  S  L
              |871                              |881

              |2671      |2681      |2691      |2701      |2711      |2721
     TCAAGTGGCGGCCCCCAGAGCGCGTGGGAGCAGGAGGCCTGGATGGCTACAGCGTGGAGT
       K  W  R  P  P  E  R  V  G  A  G  G  L  D  G  Y  S  V  E  Y
              |891                              |901

              |2731     .         .         .         .         .         .         .         .         .
     ACTGCCCAGAGGGCTgtgagtgtccccgcccccaaccccccctcccccaaaggaagaacatg
       C  P  E  G  C
              |911


          .         .         .         .         .         .         .         .         .         .         .         .
     ctcaccttgccattgagcagattcacctgtagtcaagttttttaggcccacttttgccga

          .         .         .         .         .         .         .         .         .         .         .         .
     aagttgaggacacccagagaaatatctgtcctgttttcagaagtaaaaaagcttgcctag

          .         .         .         .         .         .         .         .         .         .         .         .
     tgaaaaacaaatgcagagtaaagctgactgtaacacttctttgagcagtgcgaaatcagc

          .         .         .         .         .         .         .         .         .         .         .         .
     aactacattttaaaaacatatttaaggccaggcgcgatggcttacgcctgtaatcccagc

          .         .         .
     actttgggaggccaa


     Exon 27 | Start: 2793 | End: 2960 | Length: 167


          .         .         .         .         .         .         .         .         .         .         .         .
     ctaaaaatacaaaattagccgggtgtggtggtgggcacctgtgatcccagctacgcggga
```

```
        .         .         .         .         .         .
ggctgaggcaggagaatcacttgaactcgggaggcagaagttgcggtgagccaagatcat

        .         .         .         .         .         .
gccattgcactccagcctgggagacaagagcgaaactccatctcaaaaataaataaacaa

        .         .         .         .         .         .
ataaaaatttaaaaaaacatatttaaatcctggagattcctatcagaggagtgggcagtg

        .         .         .         .         .         .
ggagtggggtgtcagtggtgacacagcctgtggccttgcctccccctccccaccccagg

   |2741      |2751      |2761      |2771      |2781      |2791
GCTCAGAGTGGGTGGCTGCCCTGCAGGGGCTGACAGAGCACACATCGATACTGGTGAAGG
  S   E   W   V   A   A   L   Q   G   L   T   E   H   T   S   I   L   V   K   D
                         |921                                   |931

   |2801      |2811      |2821      |2831      |2841      |2851
ACCTGCCCACGGGGGCCCGGCTGCTTTTTCCGAGTGCGGGCACACAATATGGCAGGGCCTG
  L   P   T   G   A   R   L   L   F   R   V   R   A   H   N   M   A   G   P   G
                         |941                                   |951

   |2861      |2871      |2881      |2891      |2901      .        .
GAGCCCCTGTTACCACCACGGAGCCGGTGACAGTGCAGGAGATCCTGCgtgagtgcccct
  A   P   V   T   T   T   E   P   V   T   V   Q   E   I   L   Q
                         |961

        .         .         .         .         .         .
ttgtgcagtcacaagacccgccattgacaccccaggcccttggtgtccagtggaggtggg

        .         .         .         .         .         .
gacagttggggaggcccagaatgctctgcccagaacgctgggcagagacaggaggggttg

        .         .         .         .         .         .
gagccatcgtccatgcgctaggcctagggaaaaagtgcagagagggtggccaggcacagt

        .         .         .         .         .         .
ggctcaagcctgtaatcccagcactttaggaggccaaggcaggcagatcacttgaggtca

        .         .         .         .         .         .
ggagtttgagaccagcctggccaacatagtgaaaccctgtctctacta


Exon 28 | Start: 2961 | End: 3049 | Length: 88
```

```
          .         .         .         .         .         .         .         .         .         .         .         .
     atagggtgtcaaagcccaggcttacaccctggtctatgacttactagctgtgtgacttca

          .         .         .         .         .         .         .         .         .         .         .         .
     gtcaagttgcttaccctctctgatccctgccttttgaagtggtgaggctcggggaagcca

          .         .         .         .         .         .         .         .         .         .         .         .
     gctgggcttgggcagcctggagttgctgtgttagcaggagctaaaggaggcgcagggccc

          .         .         .         .         .         .         .         .         .         .         .         .
     agcaggcagctttttcttagctgcagctctctgggccttgtctcaagggaggttggagc

          .         .         .         .         .         .         .         .         .         .         .         .
     tgtggagcccctcagagctgtggcgggccctcacttagctacccactctatacccacaga

          |2911      |2921      |2931      |2941      |2951      |2961
     AACGGCCACGGCTTCAGCTGCCCAGGCACCTGCGCCAGACCATTCAGAAGAAGGTCGGGG
       R   P   R   L   Q   L   P   R   H   L   R   Q   T   I   Q   K   K   V   G   E
          |971                           |981

          |2971      |2981      |2991      .         .         .         .         .         .
     AGCCTGTGAACCTTCTCATCCCTTTCCAGgtgggactggcccccttccctgtcccccagg
       P   V   N   L   L   I   P   F   Q
          |991

          .         .         .         .         .         .         .         .         .         .         .         .
     ggagagagaggctatagtgtgttgttcccatccagtggactgatgtctcagggctggcctga

          .         .         .         .         .         .         .         .         .         .         .         .
     tctgaggtaccagaggctggggtggcggccggcccttggagtgatccaggttcagggtta

          .         .         .         .         .         .         .         .         .         .         .         .
     agcttttcctcccctcagggcaagccccggcctcaggtgacctggaccaaagaggggcag

          .         .         .         .         .         .         .         .         .         .         .         .
     cccctggcaggcgaggaggtgagcatccgcaacagccccacagacaccatcctgttcatc

          .         .         .         .         .         .
     cgggccgctcgccgcgtgcattcaggcac


     Exon 29 | Start: 3050 | End: 3245 | Length: 195
```

```
        .      .      .      .      .      .      .      .      .      .
        tgtggcgggccctcacttagctacccactctatacccacagaacggccacggcttcagct

        .      .      .      .      .      .      .      .      .      .
        gcccaggcacctgcgccagaccattcagaagaaggtcggggagcctgtgaaccttctcat

        .      .      .      .      .      .      .      .      .      .
        ccctttccaggtgggactggccccccttccctgtcccccaggggagagaggctatagtgtg

        .      .      .      .      .      .      .      .      .      .
        ttgttcccatccagtggactgatgtctcagggctggcctgatctgaggtaccagaggctg

        .      .      .      .      .      .      .      .      .      .
        gggtggcggccggcccttggagtgatccaggttcagggttaagcttttcctcccctcagg

             |3001    |3011    |3021    |3031    |3041    |3051
        GGCAAGCCCCGGCCTCAGGTGACCTGGACCAAAGAGGGGCAGCCCCTGGCAGGCGAGGAG
        G   K   P   R   P   Q   V   T   W   T   K   E   G   Q   P   L   A   G   E   E
             |1001                             |1011

             |3061    |3071    |3081    |3091    |3101    |3111
        GTGAGCATCCGCAACAGCCCCACAGACACCATCCTGTTCATCCGGGCCGCTCGCCGCGTG
        V   S   I   R   N   S   P   T   D   T   I   L   F   I   R   A   A   R   R   V
             |1021                             |1031

             |3121    |3131    |3141    |3151    |3161    |3171
        CATTCAGGCACTTACCAGGTGACGGTGCGCATTGAGAACATGGAGGACAAGGCCACGCTG
        H   S   G   T   Y   Q   V   T   V   R   I   E   N   M   E   D   K   A   T   L
             |1041                             |1051

             |3181        .      .      .      .      .      .      .      .
        GTGCTGCAGGTTGTTGgtgcgtggccaaggcctccttgagccccccttgtttcccttccct
        V   L   Q   V   V   D
             |1061

        .      .      .      .      .      .      .      .      .      .
        gggctgggctgctggggccaaggggtggggccaggggacccaacccacagctcacattttc

        .      .      .      .      .      .      .      .      .      .
        cagtccactgccccagcaggcctggccctggttggcaggggtggggtggtccctggagcc

        .      .      .      .      .      .      .      .      .      .
        agtgacccctgctcactgtcaggaggcgtggtgacccaactgggtctgtctcccgcaga
```

```
        .       .       .       .       .       .       .       .       .
caagccaagtcctccccaggatctccgggtgactgacgcctggggtcttaatgtggctct

        .       .       .       .
ggagtggaagccaccc



Exon 30 | Start: 3246 | End: 3385 | Length: 139



        .       .       .       .       .       .       .       .       .
cattcaggcacttaccaggtgacggtgcgcattgagaacatggaggacaaggccacgctg

        .       .       .       .       .       .       .       .       .
gtgctgcaggttgttggtgcgtggccaaggcctccttgagcccccttgtttcccttccct

        .       .       .       .       .       .       .       .       .
gggctgggctgctggggccaagggtggggccaggggacccaacccacagctcacattttc

        .       .       .       .       .       .       .       .       .
cagtccactgccccagcaggcctggccctggttggcaggggtggggtggtccctggagcc

        .       .       .       .       .       .       .       .       .
agtgaccccctgctcactgtcaggaggcgtggtgacccaactgggtctgtctcccgcaga

|3191      |3201      |3211      |3221      |3231      |3241
ACAAGCCAAGTCCTCCCCAGGATCTCCGGGTGACTGACGCCTGGGGTCTTAATGTGGCTC
  K   P   S   P   P   Q   D   L   R   V   T   D   A   W   G   L   N   V   A   L
                           |1071                      |1081

|3251      |3261      |3271      |3281      |3291      |3301
TGGAGTGGAAGCCACCCCAGGATGTCGGCAACACGGAGCTCTGGGGGTACACAGTGCAGA
  E   W   K   P   P   Q   D   V   G   N   T   E   L   W   G   Y   T   V   Q   K
                           |1091                              |1101

|3311      |3321         .       .       .       .       .       .       .
AAGCCGACAAGAAGACCATGgtgagcccagggtctggggtccccacgtgcaccctgccta
  A   D   K   K   T   M


        .       .       .       .       .       .       .       .       .
ggcccggcagacccaggccgcagctacccttcactgtcctcaccgtggacccctcaccct

        .       .       .       .       .       .       .       .       .
```

```
ccctctgctgatctgaatccctccatagtaggggtggagatgccaagggcacccaggaga
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
ggctctcggcatcaggaagggcctggcccagagatgcctcccctccctccctgcccccag
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
gagtggttcaccgtcttggagcattaccgccgcacccactgcgtggtgccagagctcatc
```

```
    .     .     .     .
attggcaatggctactactt
```


Exon 31 | Start: 3386 | End: 3545 | Length: 159


```
  .     .     .     .     .     .     .     .     .     .     .     .
ggagtggaagccaccccaggatgtcggcaacacggagctctgggggtacacagtgcagaa
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
agccgacaagaagaccatggtgagcccagggtctggggtccccacgtgcaccctgcctag
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
gcccggcagacccaggccgcagctacccttcactgtcctcaccgtggacccctcaccctc
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
cctctgctgatctgaatccctccatagtaggggtggagatgccaagggcacccaggagag
```

```
    .     .     .     .     .     .     .     .     .     .     .     .
gctctcggcatcaggaagggcctggcccagagatgcctcccctccctccctgcccccagg
```

```
|3331     |3341     |3351     |3361     |3371     |3381
GAGTGGTTCACCGTCTTGGAGCATTACCGCCGCACCCACTGCGTGGTGCCAGAGCTCATC
 E  W  F  T  V  L  E  H  Y  R  R  T  H  C  V  V  P  E  L  I
|1111                               |1121
```

```
|3391     |3401     |3411     |3421     |3431     |3441
ATTGGCAATGGCTACTACTTCCGCGTCTTCAGCCAGAATATGGTTGGCTTTAGTGACAGA
 I  G  N  G  Y  Y  F  R  V  F  S  Q  N  M  V  G  F  S  D  R
|1131                               |1141
```

```
|3451     |3461     |3471     |3481         .     .     .     .
GCGGCCACCACCAAGGAGCCCGTCTTTATCCCCAGACCAGgtgctgtaccctcattcttc
 A  A  T  T  K  E  P  V  F  I  P  R  P  G
|1151                               |1161
```

```
                .       .       .       .       .       .       .       .       .       .       .       .
       caaccaggggctggggcagggaggctgtgggaacagggagaggggcctagctttgtgtgg

                .       .       .       .       .       .       .       .       .       .       .       .
       ccctctcggtaccaagtcctgtcaccaacaggcatcacctatgagccacccaactataag

                .       .       .       .       .       .       .       .       .       .       .       .
       gccctggacttctccgaggccccaagcttcacccagcccctggtgaaccgctcggtcatc

                .       .       .       .       .       .       .       .       .       .       .       .
       gcgggctacactgctatgctctgctgtgctgtccggggtagccccaaggtagggaacttt

                .       .       .       .       .       .       .       .
       aggcgctggtccaggccgaccaggaggcagggctcacagg


Exon 32 | Start: 3546 | End: 3682 | Length: 136


        .       .       .       .       .       .       .       .       .       .       .       .
       gatgcctcccctccctccctgcccccaggagtggttcaccgtcttggagcattaccgccg

        .       .       .       .       .       .       .       .       .       .       .       .
       cacccactgcgtggtgccagagctcatcattggcaatggctactacttccgcgtcttcag

        .       .       .       .       .       .       .       .       .       .       .       .
       ccagaatatggttggctttagtgacagagcggccaccaccaaggagcccgtctttatccc

        .       .       .       .       .       .       .       .       .       .       .       .
       cagaccaggtgctgtaccctcattcttccaaccaggggctggggcagggaggctgtggga

        .       .       .       .       .       .       .       .       .       .       .       .
       acagggagaggggcctagctttgtgtggccctctcggtaccaagtcctgtcaccaacagg

       |3491     |3501     |3511     |3521     |3531     |3541
       GCATCACCTATGAGCCACCCAACTATAAGGCCCTGGACTTCTCCGAGGCCCCAAGCTTCA
         I  T  Y  E  P  P  N  Y  K  A  L  D  F  S  E  A  P  S  F  T
                               |1171                          |1181

       |3551     |3561     |3571     |3581     |3591     |3601
       CCCAGCCCCTGGTGAACCGCTCGGTCATCGCGGGCTACACTGCTATGCTCTGCTGTGCTG
         Q  P  L  V  N  R  S  V  I  A  G  Y  T  A  M  L  C  C  A  V
                               |1191                          |1201
```

33

```
|3611      |3621        .    .    .    .    .    .    .    .
TCCGGGGTAGCCCCAAGgtagggaactttaggcgctggtccaggccgaccaggaggcagg
  R   G   S   P   K


        .    .    .    .    .    .    .    .    .    .    .    .
gctcacaggccccgacgttgagcagtcctctccccagcctgtctcccctgctttctctcc

        .    .    .    .    .    .    .    .    .    .    .    .
accttggggtgtatggaccgggttcctccccctgggcagggccatggtactcactcttgg

        .    .    .    .    .    .    .    .    .    .    .    .
ttccatgtttgtttccagccttgggcatagtcagggactctcgtgggacccccccgagtag

        .    .    .    .    .    .    .    .    .    .    .    .
aaacacagatgtgtctccctgggtccctgccaggtcccctctcagcctggatggcttccc

        .    .    .    .
tccctctctttacctta


Exon 33 | Start: 3683 | End: 3869 | Length: 186


        .    .    .    .    .    .    .    .    .    .    .    .
ctttaggcgctggtccaggccgaccaggaggcagggctcacaggccccgacgttgagcag

        .    .    .    .    .    .    .    .    .    .    .    .
tcctctccccagcctgtctccctgctttctctccaccttggggtgtatggaccgggttc

        .    .    .    .    .    .    .    .    .    .    .    .
ctccccctgggcagggccatggtactcactcttggttccatgtttgtttccagccttggg

        .    .    .    .    .    .    .    .    .    .    .    .
catagtcagggactctcgtgggacccccccgagtagaaacacagatgtgtctccctgggtc

        .    .    .    .    .    .    .    .    .    .    .    .
cctgccaggtcccctctcagcctggatggcttccctccctctctttaccttatttatagc

    |3631      |3641      |3651      |3661      |3671      |3681
CCCAAGATTTCCTGGTTCAAGAATGGCCTGGACCTGGGAGAAGACGCCCGCTTCCGCATG
P   K   I   S   W   F   K   N   G   L   D   L   G   E   D   A   R   F   R   M
    |1211                                |1221
```

34

```
    |3691      |3701      |3711      |3721      |3731      |3741
TTCAGCAAGCAGGGAGTGTTGACTCTGGAGATTAGAAAGCCCTGCCCCTTTGACGGGGGC
F   S   K   Q   G   V   L   T   L   E   I   R   K   P   C   P   F   D   G   G
    |1231                           |1241

    |3751      |3761      |3771      |3781      |3791      |3801
ATCTATGTCTGCAGGGCCACCAACTTACAGGGCGAGGCACGGTGTGAGTGCCGCCTGGAG
I   Y   V   C   R   A   T   N   L   Q   G   E   A   R   C   E   C   R   L   E
    |1251                           |1261

    |3811      .       .       .       .       .       .       .       .       .       .
GTGCGAGgtgaggagccctcggggccagggcctgggagatgggaagagcgggcggcagtg
V   R   V
    |1271


    .       .       .       .       .       .       .       .       .       .       .       .
gggaccctgggctttgctccgttgtcctcggccaagcacctgccctggctgcaagggcac


    .       .       .       .       .       .       .       .       .       .       .       .
ggaccctgccacgcccagatgggcaatagcttccagaaggctgggaggacacagtgacat


    .       .       .       .       .       .       .       .       .       .       .       .
ggcctcctcttctgcagtgcctcagtgaccaggctggctcctggggatggccaggtatgt


    .       .       .       .       .       .       .       .       .       .       .       .
accacccgacacccagggcacaagtcagtggctgagccctggcccttggtcctggggcag


    .       .
ccatcag



Exon 34 | Start: 3870 | End: 3906 | Length: 36



.       .       .       .       .       .       .       .       .       .       .       .
ttgactctggagattagaaagccctgcccctttgacggggggcatctatgtctgcagggcc


.       .       .       .       .       .       .       .       .       .       .       .
accaacttacagggcgaggcacggtgtgagtgccgcctggaggtgcgaggtgaggagccc


.       .       .       .       .       .       .       .       .       .       .       .
tcggggccagggcctgggagatgggaagagcgggcggcagtggggaccctgggctttgct
```

```
         .    .    .    .    .    .    .    .    .    .    .    .
      ccgttgtcctcggccaagcacctgccctggctgcaagggcacggaccctgccacgcccag

         .    .    .    .    .    .    .    .    .    .    .    .
      atgggcaatagcttccagaaggctgggaggacacagtgacatggcctcctcttctgcagt

            |3821 |+1         |+11        |+21     .    .    .    .
      TGCCTCAGTGACCAGGCTGGCTCCTGGGGATGGCCAGgtatgtaccacccgacacccagg
        P   Q   *


         .    .    .    .    .    .    .    .    .    .    .    .
      gcacaagtcagtggctgagccctggcccttggtcctggggcagccatcagtaaatgggag

         .    .    .    .    .    .    .    .    .    .    .    .
      gctgtaggggccctccattcactcgtaagataacctgtgttgcaggtacaaccggatgcc

         .    .    .    .    .    .    .    .    .    .    .    .
      agccccgtgccaggagcctggagggaagttggggaaacccctccctactgttggatgtat

         .    .    .    .    .    .    .    .    .    .    .    .
      gtgtgacaagtgtgtctcctgtgctgcgatggggggatcagcagggcagttgtcgggcagt

         .    .    .    .    .    .    .    .
      cctgagtgggtgttgcacagactggtccacagggctc


Exon 35 | Start: 3907 | End: 4217 | Length: 310


         .    .    .    .    .    .    .    .    .    .    .    .
      accctgggctttgctccgttgtcctcggccaagcacctgccctggctgcaagggcacgga

         .    .    .    .    .    .    .    .    .    .    .    .
      ccctgccacgcccagatgggcaatagcttccagaaggctgggaggacacagtgacatggc

         .    .    .    .    .    .    .    .    .    .    .    .
      ctcctcttctgcagtgcctcagtgaccaggctggctcctggggatggccaggtatgtacc

         .    .    .    .    .    .    .    .    .    .    .    .
      acccgacacccagggcacaagtcagtggctgagccctggcccttggtcctggggcagcca

         .    .    .    .    .    .    .    .    .    .    .    .
      tcagtaaatgggaggctgtaggggccctccattcactcgtaagataacctgtgttgcagg
```

```
     |+31        |+41        |+51        |+61        |+71        |+81
GTACAACCGGATGCCAGCCCCGTGCCAGGAGCCTGGAGGGAAGTTGGGGAAACCCCTCCC

     |+91        |+101       |+111       |+121       |+131       |+141
TACTGTTGGATGTATGTGTGACAAGTGTGTCTCCTGTGCTGCGATGGGGGATCAGCAGGG

     |+151       |+161       |+171       |+181       |+191       |+201
CAGTTGTCGGGCAGTCCTGAGTGGGTGTTGCACAGACTGGTCCACAGGGCTCCTGAAGGA

     |+211       |+221       |+231       |+241       |+251       |+261
AGCCCCTGGATCTTTGGGGTAAAAGGAGGGTGGCCTCAAGAAACAATGTCTGGGGACAGG

     |+271       |+281       |+291       |+301       |+311       |+321
CCTTTCTGGCCTGCTATGTCTTCCCAATGTTTATTGGGCAATAAAAGATAAGTGCAGTCA

     |+331       .          .          .          .          .          .
CAGAGAACTCActcttctcaatttcggtgtgcctgtttttcataaaaatgcacaggggatg

.          .          .          .          .          .          .          .          .          .
gccaggtgcggtggctcatgcctgttatcccagcactttgggaggcggaggcgggccgat

.          .          .          .          .          .          .          .          .          .
cacctgaggtcaggagatcaagaccagcctggccaacatggtgaaaccccgtctctacta

.          .          .          .          .          .          .          .          .          .
aaaatacaaaaattagctgggcaaggtggcgcgcctataatcccagctatttggaaggct

.          .          .          .          .          .          .          .          .          .
gaggcaggagaatcacctgaacccaggaggtagagtttgaggtgggccgagatcatgcca

.          .          .
ctgcacttcag
```