Gene: MYBPC3 - Sequence: NG_007667.1 Date : January 8, 2015

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

cttagggttatgggcccagcatgctcccaccgtacaatttgctgtaagagggacacacac

ggggcttggagtacccctgaggcttgccaaaggttggggaggcagaattgtgctgcgggg

ggtgaggggggaagggacaggagccagccagggacaatgtggccctaccttctccctgga

gagacctcagctctctggaattcatctatatttagcaggtggctggacaggaggcagata

agcagagcctggggaggggggaggtccccatatatagtgggaaggacaggaccccactca

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

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

1

ggggtgtctacaattggggagcagggctaggagggagttcttgagggggttgacgagga

cgtggcctctgagccccaggacaggggcagccagtcctccagggtcctttttttgattctc

ggtttcttttcccatccctctgatgagaggtgaaggtaaacccaaggtcagggacgcag

agaggggacacagccaagacaggaagcacccggggtcaacccattctgagaatgcaaagg

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
AGTTCGACCTCAAGGTCATAGAGGCAGgtaagatcctgatcagccttccctgaggtttgg
  F   D   L   K   V   I   E   A   E
     |91
```

gctgctgggggaggggcagcccagcgactctccatccatccagggaacaggaggtgcttt

3

cacactttcttgcctttgctgtggctgtgccccccgccaggaacgccctttcccccttttt

ctgcacatgacctctctgagtacccccatgtgccatcctggcttgttccagccatggggt

aggtgggagagatgaacaagacacaaccccactctccccctgcagacctccctggggaga

tgaccctgcacagacggccgggaagcc

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

gcagcccagtctgaggggctgctctaaggctggggcagagcagggatggacctggagctg

ttcagggcagatgcagaggacatgggaactgatggcctgggacggggaggagaatgtgag

aggcaggctggctctccagctcagcatgagctgcctctgaggggcccaggcagcgggagg

acagccatggcagactttcctcatccacagcgggctcatgggtccaatgctcaggagaga

4

```
gagggtggaggggtctctggttagtggctgcaccacgactcccatctgatcccctccaga


          |301        |311        |321        |331        |341        |331
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
          |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
            |161
```

cagcattggggtgggaaggggggcagcaggacactcccccaagccgggcctgtcgcccct

gcctttgcaggtggcagcatcaccttctcagcccgcgtggccggcgccagcctcctgaag

ccgcctgtggtcaagtggttcaagggcaaatgggtggacctgagcagcaaggtgggccag

cacctgcagctgcacgacagctacgaccgcgccagcaaggtgggtccaccggggtcgtgg

agacacggagagaggggacatggagagccctagaaggca

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

aacctgggaggcggagcttgcagtgagccgagattgtgcctctgcactccagcctgggtg

acagagcaagactccatctcaaacaaacagaaaaagcctttgctcacagggtcaagctca

gcagctctcaatggtcctacccctggagcccccgatgaccccattggcctcttcgtgatg

cggccacaggatggcgaggtgaccgtgggtgagtgtgagctgctgtgcccagcattgggg

tgggaagggggggcagcaggacactcccccaagccgggcctgtcgcccctgcctttgcagg

```
       |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
       |191                                     |201

       |631       |641       |651
TGCACGACAGCTACGACCGCGCCAGCAAGgtgggtccaccggggtcgtggagacacggag
  H   D   S   Y   D   R   A   S   K
       |211
```

agaggggacatggagagccctagaaggcacaaggcacacagagggcaccatgagacccag

aggcacacacgagctgcaagcaaggggtgtggggaatctgggaggcaggtggaggggcca

ggggcccacagggagatcccggaggcctggggggccagggagtgcgatgaggctcatggga

gcactgtcggggacctgggagacttggtggacatgatcacctcaagggggcacctaataa

ggtttggccggggtgggggtcgcccag

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

ctccacctcctgggttcaagcgattctcccacctcagcctcccgagtagctgaaactaga

ggtgtgcaccaccatacttggctaattttcgttattttttagtagagacggaatttcacca

cgttggccaggctggtctggagctcctggtcttatgtgatccgcccgcctcagcctccca

aagtggggattacaggcctgagccaccgcgcccggccactcccagtctcctttaagggtg

cggagccttgtctccccggcccctggtgtcccctgacgccccgtccctccatgcacacagg

```
      |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
```

gaggggggccctggtgtctgtcctgggctcgggctccccatgggtcctggtctcctacctc

cttttcccaacactaaggaggatgcctcgtcccatccagacatgagtgctggccacgtgc

ccagtgctgcacacacagggtgtgagagaaaccccaaggcttgcagggtaggcgtggggg

cttagggctgagtccgggtctcatctgggtgggactctgtttttatcatcttggtgtcacg

gctcctggcccatggcctggcactgtctgaatgtttgggcgatgggtgaaggtgagtt

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

tgttttatcatcttggtgtcacggctcctggcccatggcctggcactgtctgaatgtttg

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
           |261                             |271
```

tcctcagggcctggggggaggccagtgctggagtctgaggcccttcagggtctcgactggg

ggtcagggctggggatgatttgcggggcggagctgaagtcagtgggggctgcaggggaga

gcaagcttcccaggcaggtgaggatactgagtctaacccccacaggagcctggctggagg

tggtcggcggatcaggtacccctgccccaggccctacctgcaccatccgcagaccccag

gggtctgagacgggtgggagcccaatctggctagtgtccctttctccct

11

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

cgcccccagggcagggcttctcaaacggccccctctgaagccccttcccccatctctcca

ccctttgaacccagaggccatgggcaccggagacctggacctcctatcagccttccgccg

cacgtgagtggccatcctcagggcctggggggaggccagtgctggagtctgaggcccttca

gggtctcgactgggggtcagggctggggatgatttgcggggcggagctgaagtcagtggg

ggctgcaggggagagcaagcttcccaggcaggtgaggatactgagtctaaccccccacagg

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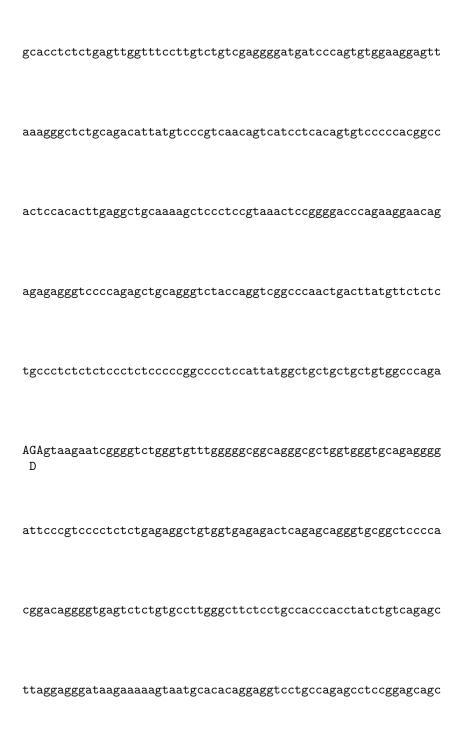
tccgcagacccccagggggtctgagacgggtgggagcccaatctggctagtgtccctttct

ccctcccactccactcccatcctgctcctaatccctttccagtccctcactgcagcctc

actgggggtccctctccatagtgatagccatgaggacactgggattctggacttcagctc

actgctgaaaaagaggtgagtcctgggtggcagttcctggggcagctggtgaggcctggc

tccaaatcccagcactgtggtttgccagct

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

gctggggatgatttgcggggcggagctgaagtcagtgggggctgcaggggagagcaagct

tcccaggcaggtgaggatactgagtctaaccccccacaggagcctggctggaggtggtcgg

cggatcaggtacccctgccccaggccctacctgcaccatccgcagaccccagggggtctg

agacgggtgggagcccaatctggctagtgtccctttctccctccccactccactcccatc

ctgctcctaatcccctttccagtccctcactgcagcctcactgggggtccctctccatagt

```
          |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

aacagtcatcctcacagtgtcccccacggccactccacacttgaggctgcaaaagctccc

tccgtaaactccggggacccagaaggaacagagagagggtccccagagctgcag

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

gcacctctctgagttggtttccttgtctgtcgaggggatgatcccagtgtggaaggagtt

aaagggctctgcagacattatgtcccgtcaacagtcatcctcacagtgtcccccacggcc

actccacacttgaggctgcaaaagctccctccgtaaactccggggacccagaaggaacag

agagagggtccccagagctgcagggtctaccaggtcggcccaactgacttatgttctctc

tgccctctctctccctctcccccggcccctccattatggctgctgctgctgtggcccaga

AGAgtaagaatcggggtctgggtgtttgggggcggcagggcgctggtgggtgcagagggg
 D

attcccgtcccctctctgagaggctgtggtgagagactcagagcagggtgcggctcccca

cggacaggggtgagtctctgtgccttgggcttctcctgccacccacctatctgtcagagc

ttaggagggataagaaaaagtaatgcacacaggaggtcctgccagagcctccggagcagc

atgggtgccccacaacacagggagtgcaagtgcggaaaatagggaggaagtaaaggccca

tgg

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

tggtgagagactcagagcagggtgcggctccccacggacaggggtgagtctctgtgcctt

gggcttctcctgccacccacctatctgtcagagcttaggagggataagaaaaagtaatgc

acacaggaggtcctgccagagcctccggagcagcatgggtgccccacaacacagggagtg

caagtgcggaaaatagggaggaagtaaaggcccatgggtggggtccaggtctttgaggga

aggtggccatacctctcatgtgccacctacccttctcccaccccacccctggagcagc

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

ctgccaggagcccctccagatccccagcccctcttcagctcccttggcccccagtcctgc

ctggcctgggacccagagcagctccagctgccccaccagaagggaaggggcagagggaca

ggggtggctacagctccttggtcctgggcccaggaagccccgcccaggggggctgcagtct

tgcccccggccacagcctagactgcgggacacagggactcgaagctggaggcaccagcag

aggaggacgtgtgggaga

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

tctcccaccccaccctggagcagcagtttccggaccccgaggtgagtgcccaacatag

cacagcaccctcatcacccctaattctgccaggagcccctccagatccccagcccctctt

cagctcccttggcccccagtcctgcctggcctgggacccagagcagctccagctgcccca

ccagaagggaaggggcagagggacaggggtggctacagctccttggtcctgggcccagga

agccccgcccaggggctgcagtcttgcccccggccacagcctagactgcgggacacagg

```
    |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

tagcccttccccacaggggagaggagagggcacaggttagcccccacctcgtccacata

18

catggaaagagcggagtccggcttagcacagagactcacaggaaagaagagcccaggtta

acccctccttgtgtagaaaaagccaagaatgcccaggttagccccttaccacagagatag

aagagaagagcaaaagttaggccaggacagccacaaggaaaagg

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

ccagctactcgggaggccgaggcaggagaatcacttgaacctgggaggcagaggttgcag

tgagccaagatggcgccattgcactccagcctggccaacagagcaagactctgtccaaaa

aacaaacaaacagacaaacaaacaaaacaaaagaaatagagacacagagaagtggaagc

ggggcggcacagaggggattggaggggggacctgggccccagccacagccacagtagct

tggcctggggggagcagggtgcgggcggtggggtggccggggctgaggggtggtgctcagc

19

```
|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
AGATGAGCGGCAGgtgcagcctggggtggggaggggggctcgggtggaggtggggacccc
  M  S  G  S


catagccttgcctcctgcccctctccacatgcgtatctctgactcggtgtggctctcagc


cccatctctctgggcctaatttcccatccttttgctcctgccggtccctctctctctctc


cttttgtctcgggctcacttcctcccgtcgggaacacttcaacggccccttctgttctac


agcaagtaagttcccctctggatggcttggggtggggggcacagggattatcatggggcg


cactgggcccgga
```

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

tggaactggctgaccatgacgctgaggtcaaatggctcaagaatggccaggagatccaga

tgagcggcaggtgcagcctggggtggggagggggctcgggtggaggtggggaccccccat

agccttgcctcctgcccctctccacatgcgtatctctgactcggtgtggctctcagcccc

atctctctgggcctaatttcccatccttttgctcctgccggtccctctctctctctcctt

ttgtctcgggctcacttcctcccgtcgggaacacttcaacggccccttctgttctacagc

CAAgtaagttcccctctggatggcttggggtggggggcacagggattatcatggggcgca
 K

ctgggcccggaggggtgtccgcagctttcctgccacttccctgcggcccccacccaggta

catctttgagtccatcggtgccaagcgtaccctgaccatcagccagtgctcattggcgga

cgacgcagcctaccagtgcgtggtgggtggcgagaagtgtagcacggagctctttgtgaa

aggtgggcctgggacctgaggatgtgggaacctggggaggagatggcctcaggggagcca

acc

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

catagccttgcctcctgcccctctccacatgcgtatctctgactcggtgtggctctcagc

cccatctctctgggcctaatttcccatccttttgctcctgccggtccctctctctctctc

cttttgtctcgggctcacttcctcccgtcgggaacacttcaacggccccttctgttctac

agcaagtaagttcccctctggatggcttggggtggggggcacagggattatcatggggcg

```
cactgggcccggagggggtgtccgcagctttcctgccacttccctgcggcccccacccagg


     |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


ccaaccctcatgctcaccctgcctggacagagcccctgtgctcatcacgcgccccttgg


aggaccagctggtgatggtggggcagcgggtggagtttgagtgtgaagtatcggaggagg


gggcgcaagtcaaatggtgagttccagaagcacggggcatgggtgttgggggcatctgcc


cagaagaggccacagcacttgccacccacccacccggctaggctgaaggacggggtggag


ctgac
```

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

ggtgggggggcacagggattatcatggggcgcactgggcccggaggggtgtccgcagcttt

cctgccacttccctgcggcccccacccaggtacatctttgagtccatcggtgccaagcgt

accctgaccatcagccagtgctcattggcggacgacgcagcctaccagtgcgtggtgggt

ggcgagaagtgtagcacggagctctttgtgaaaggtgggcctgggacctgaggatgtggg

aacctggggaggagatggcctcaggggagccaaccctcatgctcaccctgcctggacaga

```
          |1361      |1371      |1381      |1391      |1401      |1114
AGCCCCCTGTGCTCATCACGCGCCCCTTGGAGGACCAGCTGGTGATGGTGGGGCAGCGGG
  P   P   V   L   I   T   R   P   L   E   D   Q   L   V   M   V   G   Q   R   V
                                      |461                              |417

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

cacgggggcatgggtgttgggggcatctgcccagaagaggccacagcacttgccacccacc

24

cacccggctaggctgaaggacggggtggagctgacccgggaggagaccttcaaataccgg

ttcaagaaggacgggcagagacaccacctgatcatcaacgaggccatgctggaggacgcg

gggcactatgcactgtgcactagcggggggccaggcgctggctgagctcattgtgcagggt

gagcctggctggggggggcacatgaggctttagggcttggacccctc

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

tagcacggagctctttgtgaaaggtgggcctgggacctgaggatgtgggaacctggggag

gagatggcctcaggggagccaaccctcatgctcaccctgcctggacagagccccctgtgc

tcatcacgcgccccttggaggaccagctggtgatggtggggcagcgggtggagtttgagt

gtgaagtatcggaggaggggggcgcaagtcaaatggtgagttccagaagcacggggcatgg

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
```


gggggggcacatgaggctttagggcttggacccctcagcccccacccacctagccctgta

ggggagcaggcaaacctgggctcaaggcctctgtgaccttgggcctttgacagcctaaac

ctcatccttctcatctctaaaatgacgatgctgaggtgaccgctccagagggtactgaga

gggtcatacgggcctggtgagcatcaccacccctcagacacttgaggttccttatgtgca

26

ctgcaccatcacaggcaaacatggcacacacaggcacacgtgttttc

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

acagcctaaacctcatccttctcatctctaaaatgacgatgctgaggtgaccgctccaga

gggtactgagagggtcatacgggcctggtgagcatcaccacccctcagacacttgaggtt

ccttatgtgcactgcaccatcacaggcaaacatggcacacacaggcacacgtgttttcac

atgcccacatgcacccagacacgtgcgcaccagcgcccatgggcccacacgccctccaca

gggattcacgccacacccacacaccctcccgagctcaatggctctgccctgccctgcaga

```
     |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
                           |591
```

caggtggatgggacaggtggagactgagatggagacagagagagacacagggagaaacag

agagagagagataaagacaggtggacagagaggcagatgcacagagacaggacagagact

gagacagagacccacagagagggagaaacagacagacccaaaaagacaaagagacagaaa

gacagaaatagttctatagagacagaaagatatgcacagggaggcacacacataggagag

ttcgtcagagacagagaagaacagagggacagagacaaagaggcag

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

gggctggccgtgctgggcccaagttcacagagattaatgagacccagcccctgcccagtc

tccaagggcccagccaaggagatgctttgatgtagaaatcactttttacgctgcctacctc

tgaaggcacattaaaaagctggaaaattagataatatagaaaaaaaaaaggcatttttaaa

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
           |621 |631

agggtagggtgggtcggggcagtggggccaggagcccctgtcactgggccctgcctttgc

ccccgtgctacttgctcttccttctcttgcagaggtcaagattgacttcgtacccaggca

gggtaagtcttggggcccctgagtcttggttctgctcactttcccgcaacccacccacgc

aggcctcccctccactcacagagggaagagcaaggatcaaaagtgggggtcctggggccc

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

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  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

ctgctgttggctaccccatgggagagactggtcaggggcaggcaaggtgggcagtgtgg

32

gtcagggggtggaagaagcagcagaggggcgcttccaggctgagtcagctcctctgctcc

ctacttccctcctgccctgttcccaggggaataaggccccagccaggccagccccagatg

ccccagaggacacaggtgac

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

ctatctctggggaccctgctcccactgtgatctggcagaaggctatcacgcaggtactgt

gggtccctcctcagtctccccatctataagatgggtgtgtggaaccagccaagtgctagg

acctgctgcacacccacccacatgtgcacgccctgctgttggctaccccatgggagaga

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
   |711
```

```
tcatcactttctacctacgtggtgccgagcccttggcgaggtctccatggaggtgccaca
```

```
cttggccgggtgtgttgctgcccccagcagggtccctgtggggccctcacacctcaggca
```

```
gagggtctctgtgaagtgtgctgatggccatcacaaggatgtggacaccctctcattgcc
```

```
aggaagccctcatgactgggctgctccctggctcccttcatcctaagctgaccttgacct
```

```
tgaccttgtgctccctctcaa
```

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

gggtcttgctcctgcctggcactgttggttcttctgaaggctggggtcttgaggggtcct

catgatagctcatctgagaggacaggtggttgccccaggtcccgtgacaaagctagaacc

cgagcccctgccctcagtcggtgccacagagatgattttgaactagatgctgacgtggat

gcagtcttcccacaggctgtgttccccccatggacccccgggacatctggctgttggcgg

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
            |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

gtgcctgggggtgatgcctttaggaggctgagaagatggt

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

caggacaggggtgaatatgggcagtgagaagccttaaagggttgacggagggctggcgac

atgatcagaaatgcatcctgttgagacccagcctggacaacacagtgagactccatatca

ctaaaaaaaaaaaaaaaaaaaaaggaaaagaagaaagaaatgcattctagaaagatctcttt

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
```

ccggatggaggtgtgagggcgccaaacagatccgagggaaggtggtgtggggatgcctgg

gttccagaccagagctgccacctcccctgagccaggctacatcctggagcgcaagaagaa

gaagagctaccggtggatgcggctgaacttcgacctgattcaggagctgagtcatgaagc

gcggcgcatgatcgagggcgtggtgtacgagatgcgcgtctacgcggtcaacgccatcgg

catgtccaggcccagccctgcctcccagcccttcatgcctatcgg

37

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

agttggagtgggaaggggacgagcaacgttactcaaggccctgagcggggcagggctgat

gtgggtccatcccaccccatccagacgtgccagacgcacctgcggcccccaagatcagca

acgtgggagaggactcctgcacagtacagtgggagccgcctgcctacgatggcgggcagc

ccatcctgggtgagtgcaagggcaccggatggaggtgtgagggcgccaaacagatccgag

ggaaggtggtgtggggatgcctgggttccagaccagagctgccacctcccctgagccagg

```
     |2421     |2431     |2441     |2451     |2461     |2421
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     |2521
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     |2521
```

```
GCGTCTACGCGGTCAACGCCATCGGCATGTCCAGGCCCAGCCCTGCCTCCCAGCCCTTCA
 V  Y  A  V  N  A  I  G  M  S  R  P  S  P  A  S  Q  P  F  M
             |851                              |861
```

```
       |2601
TGCCTATCGgtgagcctgcctggcctggtcctgcccccgccccctccccagttaaaaac
 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      |2216
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      |2212
TCAAGTGGCGGCCCCCAGAGCGCGTGGGAGCAGGAGGCCTGGATGGCTACAGCGTGGAGT
  K   W   R   P   P   E   R   V   G   A   G   G   L   D   G   Y   S   V   E   Y
         |891                                     |901

         |2731
ACTGCCCAGAGGGCTgtgagtgtccccgcccccaacccccctccccaaaggaagaacatg
  C   P   E   G   C
         |911
```


ctcaccttgccattgagcagattcacctgtagtcaagttttttaggcccacttttgccga

aagttgaggacacccagagaaatatctgtcctgttttcagaagtaaaaaagcttgcctag
```

tgaaaaacaaatgcagagtaaagctgactgtaacacttctttgagcagtgcgaaatcagc

aactacattttaaaaacatatttaaggccaggcgcgatggcttacgcctgtaatcccagc

actttgggaggccaa

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

ctaaaaatacaaaattagccgggtgtggtggtgggcacctgtgatcccagctacgcggga

ggctgaggcaggagaatcacttgaactcgggaggcagaagttgcggtgagccaagatcat

gccattgcactccagcctgggagacaagagcgaaactccatctcaaaaataaataaacaa

ataaaaatttaaaaaaacatatttaaatcctggagattcctatcagaggagtgggcagtg

```
ggagtggggtgtcagtggtgacacagcctgtggccttgcctccccctccccacccccagg
```

```
    |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
ACCTGCCCACGGGGGCCCGGCTGCTTTTCCGAGTGCGGGCACACAATATGGCAGGGCCTG
  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

agcaggcagctttttttcttagctgcagctctctgggccttgtctcaagggaggttggagc

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
AGCCTGTGAACCTTCTCATCCCTTTCCAGgtgggactggccccccttccctgtcccccagg
  P   V   N   L   L   I   P   F   Q
    |991
```

ggagagaggctatagtgtgttgttcccatccagtggactgatgtctcagggctggcctga

tctgaggtaccagaggctggggtggcggccggcccttggagtgatccaggttcagggtta

agcttttcctcccctcagggcaagccccggcctcaggtgacctggaccaaagaggggcag

cccctggcaggcgaggaggtgagcatccgcaacagccccacagacaccatcctgttcatc

cgggccgctcgccgcgtgcattcaggcac

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

tgtggcgggccctcacttagctacccactctatacccacagaacggccacggcttcagct

gcccaggcacctgcgccagaccattcagaagaaggtcggggagcctgtgaaccttctcat

ccctttccaggtgggactggcccccttccctgtcccccagggagagagaggctatagtgtg

ttgttcccatccagtggactgatgtctcagggctggcctgatctgaggtaccagaggctg

gggtggcggccggcccttggagtgatccaggttcagggttaagcttttcctcccctcagg

```
       |3001     |3011     |3021     |3031     |3041     |3053
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     |3113
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     |3173
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
```

gggctgggctgctggggccaagggtggggccaggggacccaacccacagctcacatttttc

cagtccactgccccagcaggcctggccctggttggcaggggtggggtggtccctggagcc

agtgacccccctgctcactgtcaggaggcgtggtgacccaactgggtctgtctcccgcaga

caagccaagtcctcccccaggatctccgggtgactgacgcctggggtcttaatgtggctct

ggagtggaagccaccc

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

cattcaggcacttaccaggtgacggtgcgcattgagaacatggaggacaaggccacgctg

gtgctgcaggttgttggtgcgtggccaaggcctccttgagccccttgtttcccttccct

gggctgggctgctggggccaagggtggggccaggggacccaacccacagctcacattttc

cagtccactgccccagcaggcctggccctggttggcaggggtggggtggtccctggagcc

agtgacccctgctcactgtcaggaggcgtggtgacccaactgggtctgtctcccgcaga

```
|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

49

cagaccaggtgctgtaccctcattcttccaaccaggggctggggcagggaggctgtggga

acagggagagggggcctagctttgtgtggccctctcggtaccaagtcctgtcaccaacagg

```
|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

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

gctcacaggccccgacgttgagcagtcctctccccagcctgtctcccctgctttctctcc

accttggggtgtatggaccgggttcctccccctgggcagggccatggtactcactcttgg

ttccatgtttgtttccagccttgggcatagtcagggactctcgtgggaccccccgagtag

aaacacagatgtgtctccctgggtccctgccaggtcccctctcagcctggatggcttccc

tccctctctttacctta

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

ctttaggcgctggtccaggccgaccaggaggcagggctcacaggccccgacgttgagcag

tcctctccccagcctgtctccctgctttctctccaccttggggtgtatggaccgggttc

ctccccctgggcagggccatggtactcactcttggttccatgtttgtttccagccttggg

catagtcagggactctcgtgggaccccccgagtagaaacacagatgtgtctccctgggtc

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

```
    |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


ggcctcctcttctgcagtgcctcagtgaccaggctggctcctgggggatggccaggtatgt


accacccgacacccagggcacaagtcagtggctgagccctggcccttggtcctggggcag


ccatcag
```

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

ttgactctggagattagaaagccctgcccctttgacgggggcatctatgtctgcagggcc

accaacttacagggcgaggcacggtgtgagtgccgcctggaggtgcgaggtgaggagccc

tcggggccagggcctgggagatgggaagagcgggcggcagtggggaccctgggctttgct

ccgttgtcctcggccaagcacctgccctggctgcaagggcacggaccctgccacgcccag

atgggcaatagcttccagaaggctgggaggacacagtgacatggcctcctcttctgcagt

     |3821
TGCCTCAGTGACCAGGCTGGCTCCTGGGGATGGCCAGgtatgtaccacccgacacccagg
  P Q *

gcacaagtcagtggctgagccctggcccttggtcctggggcagccatcagtaaatgggag

gctgtaggggccctccattcactcgtaagataacctgtgttgcaggtacaaccggatgcc

agccccgtgccaggagcctggagggaagttggggaaacccctccctactgttggatgtat

gtgtgacaagtgtgtctcctgtgctgcgatggggggatcagcagggcagttgtcgggcagt

cctgagtgggtgttgcacagactggtccacagggctc

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

accctgggctttgctccgttgtcctcggccaagcacctgccctggctgcaagggcacgga

ccctgccacgcccagatgggcaatagcttccagaaggctgggaggacacagtgacatggc

ctcctcttctgcagtgcctcagtgaccaggctggctcctggggatggccaggtatgtacc

acccgacacccagggcacaagtcagtggctgagccctggcccttggtcctgggggcagcca

tcagtaaatgggaggctgtaggggccctccattcactcgtaagataacctgtgttgcagg

54

GTACAACCGGATGCCAGCCCCGTGCCAGGAGCCTGGAGGGAAGTTGGGGAAACCCCTCCC

TACTGTTGGATGTATGTGTGACAAGTGTGTCTCCTGTGCTGCGATGGGGGATCAGCAGGG

CAGTTGTCGGGCAGTCCTGAGTGGGTGTTGCACAGACTGGTCCACAGGGCTCCTGAAGGA

AGCCCCTGGATCTTTGGGGTAAAAGGAGGGTGGCCTCAAGAAACAATGTCTGGGGACAGG

CCTTTCTGGCCTGCTATGTCTTCCCAATGTTTATTGGGCAATAAAAGATAAGTGCAGTCA

CAGAGAACTCActcttctcaatttcggtgtgcctgttttcataaaaatgcacaggggatg

gccaggtgcggtggctcatgcctgttatcccagcactttgggaggcggaggcgggccgat

cacctgaggtcaggagatcaagaccagcctggccaacatggtgaaaccccgtctctacta

aaaatacaaaaattagctgggcaaggtggcgcgcctataatcccagctatttggaaggct

gaggcaggagaatcacctgaacccaggaggtagagtttgaggtgggccgagatcatgcca

ctgcacttcag