

Gene: MYH7 - Sequence: NG_007884.1
Date : January 11, 2015

Exon 1 | Start: 1 | End: 42 | Length: 41

```
. . . . .
ctcctgccagctgtggaatgtgaggcctggcctgggagatatttttgctgcactttgagc
. . . . .
caccccgccccctggaactcagaccctgcacagtcctatgccataacaatgacgaccactt
. . . . .
ccaattgtttcctagctggagaggcggggaggaggagcactgtttgggaagggggggagcc
. . . . .
tgggggaaatgcttctagtgacaacagccctttctaaatccggctagggactgggtgccg
. . . . .
ttgggggtgggggtgccctgctgccccatatatacagcccctgagaccaggtctggctcc
      |-99      |-89      |-79      |-69      . . . .
CACAGCTCTGCTCTGCTCTGTGTCTTCCCTGCTGCTCTCAGgtaggagcgggagctgga
. . . . .
ggctttactctgggataaaggggctccaggcttaggaagggattcctcttggaatagcaa
. . . . .
gcttcatgcaggacttcatgcagagtaccagggtccagtcactgggcacacatgtgcaggt
. . . . .
ctaaacatgggcgtatgtgccacaggagttcctagggaagatatctgcatctgagcata
. . . . .
tgggaccaatatgcattacagggtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtggac
. . . . .
aagcctgcatagtctgaatgtgagaaagggtatgtacctcac
```

Exon 2 | Start: 43 | End: 98 | Length: 55

.
 atggctcaaagaaaggtaccactagatgggtacaggcaggggtgggaccatctcgagga

 gtgaagaggattagggttcaggttgagttgacaccaggaagctgttagaactagttcttg

 aggaaaaagggaatagggtttgaaaaacaagaaggatgggaccagagaagctgaccaccc

 tttccaccttgttttggaagagggtggatgctgaagaacagagccagggagaagcaggaa

 ggtgggactggtcaggttgggcacagcctgcctgacacagcctcttcctctctccagg

 | -59 | -49 | -39 | -29 | -19 | -9
 GTCCCTGCAGGCCTTGGCCCTTTCCTCATCTGTAGACACACTTGAGTAGCCCAGgtaa

 gaaaagctgaagctagagtgttgaaaatctagtaagactgggcattagagccccaagcc

 agcctatggaactctagtttctgcatgtgctggagagaatatcttggtatcaagagct

 acttacctgtgaccaggggtccagggatagatgagggtcagagatggaaatagttagat

 ttctgctcctacaggagctcagaatgctcttccttcccctaggagagcccagcttgaa

 caatagttagttgttcctttaccctggcaggtttgctaggctgctcctctggtta

Exon 3 | Start: 99 | End: 307 | Length: 208

.
 gatgagggtcagagatggaaatagttagatttctgctcctacaggagctcagaatgctc

 ttccttcccctaggagagcccagcttgaacaatagttagttgttcctttaccctggca

.
 ggtttgctaggctgctcctctgggttaaggggtaacctcaaagaggaagggaactcactggt

 aactcctcttgactcttgagcatgggtgctaggttttggggctcccactgaaggggagagc

 ccagggaggggaagggaagaatgggcagatgggagggcagccagcttctgctcactccagg

 |1 |11 |21 |31 |41 |51
 GCACAGCCATGGGAGATTGGGAGATGGCAGTCTTTGGGGCTGCCGCCCCCTACCTGCGCA
 M G D S E M A V F G A A A P Y L R K
 |1 |11

 |61 |71 |81 |91 |101 |111
 AGTCAGAGAAGGAGCGGCTAGAAGCGCAGACCAGGCCTTTTGACCTCAAGAAGGATGTCT
 S E K E R L E A Q T R P F D L K K D V F
 |21 |31

 |121 |131 |141 |151 |161 |171
 TCGTGCCTGATGACAAACAGGAGTTTGTCAAGGCCAAGATCGTGTCTCGAGAGGGTGGCA
 V P D D K Q E F V K A K I V S R E G G K
 |41 |51

 |181 |191 |201
 AAGTCACTGCCGAGACCGAGTATGGCAAGgtgggtgtcaggctgatgtgagagtccaccc
 V T A E T E Y G K
 |61

 tggccacctgtacacctgggtggacagagaggggtacacccatgccccatgcccattgag

 acctgaggatgggtccattctccttccctttggggaagaatccagaccctccaaagagcc

 ctctccttcccaatatcccttctgtcttccctgtgagatcctgggttccttctctcttgag

 cactattgccctgtcactcaccaactcctaaccctcttgaggaaggagggaaagcccagg

 ctgacaggagggttggtgggggctctt

Exon 4 | Start: 308 | End: 451 | Length: 143

.
tgtcaggctgatgtgagagtccaccctggccacctgtacacctgggtggacagagagggg

.
tacacccatgccccatgccatgcagacctgaggatgggtccattctccttcctttggg

.
gaagaatccagaccctccaaagagccctctccttcccaatatcccttctgtcttcctgt

.
gagatcctggttccttctctcttgagcactattgccctgtcactcaccaactcctaacc

.
tcttgaggaaggaggaaagcccaggctgacaggagggttggtgggggtccttgaga

|211	|221	|231	|241	|251	|261
ACAGTGACCGTGAAGGAGGACCAGGTGATGCAGCAGAACCCACCCAAGTTCGACAAAATC					
T V T V K E D Q V M Q Q N P P K F D K I					
|71			|81		

|271	|281	|291	|301	|311	|321
GAGGACATGCCATGCTGACCTTCCTGCATGAGCCGCGTGCTCTACAACCTCAAGGAT					
E D M A M L T F L H E P A V L Y N L K D					
|91			|101		

|331	|341	. . . . .
CGCTACGGCTCCTGGATGATCTACgtgagtgctgcacctggccctacgttgggatctctg		
R Y G S W M I Y		
|111		

.
ttcttgctccatccatgtccacccaggagccaagagtgtcttctgtttgtgtctaggca

.
gggttacactctaacctcgtcccaacatccttgggttaattccaacactctggggactgg

.
cattactcagattgagtgcatgcagaggttttcctttctcttcttctcctgggatct

.
ttctctaactccaaaatcaccagccctccccttcgcaactgggaagtcactgctcctt

.
ttctatccccagacctactcgggc

Exon 5 | Start: 452 | End: 608 | Length: 156

.
ggatgatctacgtgagtgtgcacctggccctacgttgggatctctgttcttgctccatc
.
catgtccaccccaggagccaagagtgtcttctgtttgtgtctaggcagggttacactcta
.
acctcgtcccaacatccttggttcaattccaacactctggggactggcattactcagatt
.
gagtgcacgcagaggttttcctttcttcttcttctcctgggatctttctctaactccc
.
aaaatcaccagccctcccccttcgcaactggcaagtcactgctccttttctatccccaga

 |351 |361 |371 |381 |391 |401
ACCTACTCGGGCCTTCTGTGTCAACCGTCAACCCTTACAAGTGGCTGCCGGTGTACACT
T Y S G L F C V T V N P Y K W L P V Y T
 |121 |131

 |411 |421 |431 |441 |451 |461
CCTGAGGTGGTGGCTGCCTACCGGGCAAGAAGAGGAGCGAGGCCCGCCCCACATCTTC
P E V V A A Y R G K K R S E A P P H I F
 |141 |151

 |471 |481 |491 |501 . . .
TCCATCTCCGACAACGCCTATCAGTACATGCTGACAGgtgagaggccctggaagggtctt
S I S D N A Y Q Y M L T D
 |161

.
cctgaagggaactgggataggccgggagggagagggagaaggaagggagaagccccacga

.
gagcatcctgtgcagctcctgacctttcctccccaccctctccccacagacagagaaaac

.

cagtccatcctgatcacgtgagtgtagctgctactgtattccctttcagaatctccctga

 tcccagcctccagcccatcaggtgtcccaggccccgaggcatagactcagcctctttcc

 ccccaacctcgtgcccatctccttcttctctgaccat

Exon 6 | Start: 609 | End: 636 | Length: 27

.
 ctatcccagacctactcgggcctcttctgtgtcacctcaacccttacaagtggctgcc

 ggtgtacactcctgaggtggtggctgcctaccggggcaagaaggagcgaggccccgcc

 ccacatcttctccatctccgacaacgcctatcagtacatgctgacaggtgagaggccctg

 gaagggtcttcctgaagggaactgggataggccgggaggagaggagagaaggaagggaga

 agccccacgagagcatcctgtgcagctcctgacctttcctccccaccctctccccacaga
 |511 |521
 ACAGAGAAAACAGTCCATCCTGATCACgtgagtgtagctgctactgtattccctttcag
 R E N Q S I L I T
 |171

.
 aatctccctgatcccagcctccagcccatcaggtgtcccaggccccgaggcatagactc

 agcctctttcccccaacctcgtgcccatctccttcttctctgaccattaccctgacccc

 tctctttgctctccctcttcctttctgctttccatccccttcatgttttctctccac

 ctccttcaccactctccaactcatcacgcgtttatccagaagctcattatcgccatgtc

.
tcatcaccactctcttccatctctccagggaaattcattcgaattcat

Exon 8 | Start: 746 | End: 838 | Length: 92

.
tgcccagggtcctactctcgggtaggcccaggcattctctcctgatttgaggcttgctg
.
gtctccagtagtattgttcaactgcccataagcccctgtcttcacagcggagaatccgga
.
gcagggaagacagtcaacaccaagagggtcatccagtactttgctgttattgcagccatt
.
ggggaccgcagcaagaaggaccagagcccgggcaaggtaggcctgctgccctccaaggtc
.
ctgtaccgcagaaaggaggaggagaagagctctcacctgcctccttcttggcctctgcagg

|641 |651 |661 |671 |681 |691
GGCACCCCTGGAGGACCAGATCATCCAGGCCAACCTGCTCTGGAGGCCTTTGGCAATGCC
G T L E D Q I I Q A N P A L E A F G N A
|221 |231

|701 |711 |721 |731
AAGACCGTCCGGAACGACAACCTCCTCCCGCTTCgtgagtggtcacctgaccttggccttgg
K T V R N D N S S R F
|241

.
gacttggactggtggaggaatggtctcagatatgagccttcccccaactcatcaccactc
.
tcttccatctctccaggggaaattcattcgaattcattttggggcaacaggaaagtggc
.
atctgcagacatagagacctgtgagtgccatgaatctgctaggctcagcctaagctcacc
.
cttgctctagaccatctggtcttgacctctctctctctcccctccctccctctgtttttc

.
ccaa

Exon 10 | Start: 903 | End: 1001 | Length: 98

.
tgtaggtgtctctgtcttcaggtctacatatctgtctctctctgagacttcctctgcatc
.
tttctccatttctgtctctgcatggctaggtgtctttctctgggatttctctctgagact
.
atctctctccttctgggtctctgtttccatctctctgtgtgatctctttgtgtctgtcca
.
actagtctctctggctcttcccttccctctgccttttgcttgctacattatcattaatt
.
ttccttgtgcccaaaccctaacttttctttctctccttcttctccccacctgttcacaga
|801 |811 |821 |831 |841 |851
ATCTTCTGAAAAATCCAGAGTTATTTCCAGCTGAAAGCAGAGAGAGATTATCACATTT
L L E K S R V I F Q L K A E R D Y H I F
|271 |281
|861 |871 |881 |891
TCTACCAAATCCTGTCTAACAAAAAGCCTGAGCTGCTGGgtgagtcagagccaccgactg
Y Q I L S N K K P E L L D
|291
.
agaccaactatctccatggcaacctgggtcccctctgcttgtggctggactcagctggcat
.
gccctgggtttcatggcactgctggattcaattcagtgggatgtggggccaagccaagcc
.
ctgtcctgtgctcttcctcaggccatgtgctgtggcgagcagcctccatgagagccgggg
.
gcttgtgtcccaccctaaccatgttttttcccctagacatgctgctgatcaccaacaacc

.
cctacgattatgcattcatctccaaggagagaccaccg

Exon 11 | Start: 1002 | End: 1105 | Length: 103

.
agcagagagagattatcacattttctaccaaactcgtctaacaaaaagcctgagctgct

.
gggtgagtcagagccaccgactgagaccaactatctccatggcaacctggccctctgc

.
ttgtggctggactcagctggcatgccctgggtttcatggcactgctggattcaattcagt

.
gggatgtggggccaagccaagccctgtcctgtgctcttcctcaggccatgtgctgtggcg

.
agcagcctccatgagagccgggggcttgtgtcccaccctaaccatgtttttcccctaga

 |901 |911 |921 |931 |941 |951
ACATGCTGCTGATCACCAACAACCCCTACGATTATGCATTATCTCCCAAGGAGAGACCA
 M L L I T N N P Y D Y A F I S Q G E T T
 |301 |311

 |961 |971 |981 |991 . .
CCGTGGCCTCCATTGATGACGCTGAGGAGCTCATGGCCACTGATgtgagtggtgaggagac
 V A S I D D A E E L M A T D
 |321 |331

.
ccagccaggggggtgggaggattggcagtgaggggcaaacaggggtccaaaagcagagcta

.
agacgctggccattggttgtttaaagtggatatggacctcctgagagccagaatgtgcct

.
gtgatcagggtgtactggggaatggatgaggtgagacaggactggccagtatctggtgtt

.
ctatcaaaccaggaagagctgaaagccatgagacagagagacacacaagccaagaaacaa

acctccacatcctgggttcaagtgattctcctgcctcagcctcccgagtagctggaatta

 caggcatgcaccaccatgcctggctaatttttgtagtagatggggtttcatc

 atgttgccaggttggtct

Exon 13 | Start: 1245 | End: 1363 | Length: 118

.
 tggagcgcagtggtcacgatcttggctcactgccacctccacatcctgggttcaagtgatt

 ctctgcctcagcctcccgagtagctggaattacaggcatgcaccaccatgcctggctaa

 tttttgtagtagtagatggggtttcatcatgttgccaggttggtctcaaactcc

 tgacctcaagtgatccgcctgccttggcctcccaaagtgcctgggattacaggcatgaacc

 accacacctggccagtcagtcattctttaccaactttgctacttgcttttccttcaga

|1141	|1151	|1161	|1171	|1181	|1191
AGGCTGACAAGTCTGCCTACCTCATGGGGCTGAACTCAGCCGACCTGCTCAAGGGGCTGT					
A D K S A Y L M G L N S A D L L K G L C					
|381			|391		

|1201	|1211	|1221	|1231	|1241	|1251
GCCACCCTCGGGTGAAAGTGGGCAATGAGTACGTCACCAAGGGGCAGAATGTCCAGCAGg					
H P R V K V G N E Y V T K G Q N V Q Q					
|401			|411		

.
 tgggtccatcttcagatgataatgggtgggcagggtaggagactggcatggtgggatga

 gagttttcaagttcactcttcccaacaaccctgctcaatatgggtctctcctccaccttg

caggtgatatatgccactggggcactggccaaggcagtgtatgagaggatgttcaactgg

 atggtgacgcgcacatcaatgccaccctggagaccaagcagccacgccagtacttcatagga

 gtcttgacatcgctggcttcgagatcttcgatgtgagttgggacccctgggagtgga

Exon 14 | Start: 1364 | End: 1513 | Length: 149

.
 acacctggccagcagtcacatctctttaccaactttgctacttgccttttccttcagaggc

 tgacaagtctgcctacatcatggggctgaactcagccgacctgctcaaggggctgtgcca

 ccctcgggtgaaagtgggcaatgagtacgtcaccaaggggcagaatgtccagcaggtggg

 tccatcttcagatgataaatgggtgggcagggtagggagactggcatggtgggatgagagt

 tttcaagttcactcttcccaacaaccctgctcaatatgggtctctcctccaccttgagg

|1261	|1271	|1281	|1291	|1301	|1311
GTGATATATGCCACTGGGGCACTGGCCAAGGCAGTGTATGAGAGGATGTTCAACTGGATG					
V I Y A T G A L A K A V Y E R M F N W M					
|421			|431		

|1321	|1331	|1341	|1351	|1361	|1371
GTGACGCGCATCAATGCCACCCTGGAGACCAAGCAGCCACGCCAGTACTTCATAGGAGTC					
V T R I N A T L E T K Q P R Q Y F I G V					
|441			|451		

|1381	|1391	|1401	.	.	.	.	.
CTGGACATCGCTGGCTTCGAGATCTTCGATG	gtgagttgggacccctgggagtgaggagaac						
L D I A G F E I F D							
|461							

.
 aatcactcactcgctcccacattcaacagctatattgcttagagccagctgtggaccagac

.
 atgggaaggcagtgaggactgtgtggtgacagaggcagtcattttctctgtcttcagggg

 aagccctccttcactgccttgacatggaggggaccagccacgccctgctgggctcaggca

 cagtggacgggcacagccccaatggccactcacaccactttctgactgctcccaccct

 catgccccctgcagttcaacagctttgagc

Exon 15 | Start: 1514 | End: 1684 | Length: 170

.
 ttcgagatcttcgatgtgagttgggaccctgggagtgaggagaacaatcactcactcgct

 cccacattcaacagctatttgcttagagccagctgtggaccagacatgggaaggcagtg

 ggactgtgtggtgacagaggcagtcattttctctgtcttcaggggaagccctccttcact

 gccttgacatggaggggaccagccacgccctgctgggctcaggcacagtggacgggcaca

 gccccaatggccactcacaccactttctgactgctcccaccctcatgccccctgcagt

|1411	|1421	|1431	|1441	|1451	|1461
TTCAACAGCTTTGAGCAGCTCTGCATCAACTTACCAACGAGAAGCTGCAGCAGTTCTTC					
F N S F E Q L C I N F T N E K L Q Q F F					
|471			|481		

|1471	|1481	|1491	|1501	|1511	|1521
AACCACCACATGTTTGTGCTGGAGCAGGAGGAGTACAAGAAGGAGGGCATCGAGTGGACA					
N H H M F V L E Q E E Y K K E G I E W T					
|491			|501		

|1531	|1541	|1551	|1561	|1571	.
TTCATTGACTTTGGCATGGACCTGCAGGCCTGCATTGACCTCATCGAGAAGgtgcctctt					

F I D F G M D L Q A C I D L I E K
 |511 |521

.
 tggccttaccacctgaattctccctgcacaccaacaagaacaccatagacaaaatagca

 gccctctcccttctggggaatataaaaatagaaggggctgaaggatccgagcccttggt

 tccagagcctatgttgctgagcaccagggacaggggtggcaccagggacagctgatttc

 ccaggggcttgaaagtgacacatggaggatgggcacctgcatgatgacctccacacct

 gcatgtttattgggcctgggttatgcatccaaggatcaggaagtgtgaggg

Exon 16 | Start: 1685 | End: 1994 | Length: 309

.
 aggggatcataagagtgacactatttcaaccctagcatctcaggcatctgggtcgtgga

 gtggtgtgtacagcatcgatagaatccatattcccagactttcacaaggtccttctgtc

 atcagacaaaatcctccaccttgaaccggttccagtcagtagataactgtactcagagct

 gagcctactaccttaacaccaacatggcacctccacgagcaagtatattgacctagag

 cagaatccatgtccacctgtgtgaaggacactcagtgatgctctctcctgcttcctcagc

|1581 |1591 |1601 |1611 |1621 |1631
 CCCATGGGCATCATGTCCATCCTGGAAGAGGAGTGCATGTTCCCCAAGGCCACCGACATG
 P M G I M S I L E E E C M F P K A T D M
 |531 |541

|1641 |1651 |1661 |1671 |1681 |1691
 ACCTTCAAGGCCAAGCTGTTTGACAACCACCTGGGCAAATCCGCCAACTCCAGAAGCCA

T F K A K L F D N H L G K S A N F Q K P
 |551 |561

 |1701 |1711 |1721 |1731 |1741 |1751
 CGCAATATCAAGGGGAAGCCTGAAGCCCACTTCTCCCTGATCCACTATGCCGGCATCGTG
 R N I K G K P E A H F S L I H Y A G I V
 |571 |581

 |1761 |1771 |1781 |1791 |1801 |1811
 GACTACAACATCATTGGCTGGCTGCAGAAGAACAAGGATCCTCTCAATGAGACTGTCGTG
 D Y N I I G W L Q K N K D P L N E T V V
 |591 |601

 |1821 |1831 |1841 |1851 |1861 |1871
 GGCTTGATCAGAAGTCTTCCCTCAAGCTGCTCAGCACCTGTTTGCCAACTATGCTGGG
 G L Y Q K S S L K L L S T L F A N Y A G
 |611 |621

 |1881
 GCTGATGCGCgtaagtagggactgaggctcccggtacagaggagcagggattctgccaag
 A D A P

 gttctgagccaggtcaattgctacaccccaccacttcaatgtcaggttgtaacccaaggt

 ttacagactcagtgggatggaactgggtgaagaaactgaggcagccacattgaaggccct

 caccagggggccaaatgccagcaaggatgtaaagaggggctgtgattctttactcacacc

 ctacctccccacactgatgcttctttgttgactctccttctgcagctattgagaaggg

 . .
 caaaggcaag

Exon 17 | Start: 1995 | End: 2062 | Length: 67

.
 aactatgctggggctgatgcgcgtaagtagggactgaggctcccggtacagaggagcagg

.
 gattctgccaaggttctgagccaggtcaattgctacacccaccacttcaatgtcaggtt

 gtacccaaggtttacagactcagtgggatggaactgggtgaagaaactgaggcagccac

 attgaaggccctcaccaggggccaatgccagcaaggatgtaaagaggggctgtgattc

 ttactcacaccctacctccccacactgatgcttctttgtgactctccttctgcagc
 |1891 |1901 |1911 |1921 |1931 |1941
 CTATTGAGAAGGGCAAAGGCAAGGCCAAGAAAGGCTCGTCCTTTCAGACTGTGTCAGCTC
 I E K G K G K A K K G S S F Q T V S A L
 |631 |641
 |1951
 TGCACAGGgtgagtgggacacagccccagccaacttggtctcccatctgccaaccccac
 H R
 |651

 ccagccccacccttccctgccttgtcatccctactcctcccggttccctgtctccttgg

 tgcattcgggaccattttcactctgtcttctcttccggtcatctcctggcctcttcactt

 atttacttcccatctcccttctctcctctttcccttctgtctcccaccctctctccttat

 ccctgtctgccccagggccccttcatctctgtgacttctcgaattctctccatctctct
 . . .
 tttccttc

Exon 18 | Start: 2063 | End: 2150 | Length: 87

.
 ttcacccctactcctcccggttccctgtctccttggtgcattcgggaccattttcactct

.
 gtcttctcttcccgtcatctcctggcctcttcacttatttacttcccacatctcccttctct

 cctctttcccttctgtctcccaccctctctccttatccctgtctgccccagggccctt

 catctctgtgacttctcgaattctctccatctctcttttcttcttctctctctctt

 cttcctgcatctctttctggcattttctttacttttctctattgcatttttggccacagg
 |1961 |1971 |1981 |1991 |2001 |2011
 GAAAATCTGAACAAGCTGATGACCAACTTGGCGTCCACCCATCCCACCTTGTACGTTGT
 E N L N K L M T N L R S T H P H F V R C
 |661 |671
 |2021 |2031 |2041
 ATCATCCCTAATGAGACAAAAGTCTCCAGgtgaggccacaaactcaggccaaccactgct
 I I P N E T K S P G
 |681

 gggcatacacccgcctgggaacaggacctcctaggacatctccctacctaccaccacagt

 ggtttccaaaccacattcttctcctcccatcccgcacatgaggcctcccagggtacctccct

 ctgagcgctaccttgcaacttgcaagtgtgtaataagggtgatgtgtaaggcactctgatgg

 acattacctcatcagtgggccctacaacccttggatagctggttgtccaagacagaatct

 tagttcaactttaatttacctgcagaa

Exon 19 | Start: 2151 | End: 2268 | Length: 117

.
 tgttcttgatcagcttagtgaacttgggccagtcacataaccctctgggcttaatttac

.
 tcacctagaacattggatatatctgttctggctaccacctatgataataggtgtgaatca

 tataaaaaaggaatgtgaaagccttttagttaaaaatgtggctagaagaaaatgaaacaa

 atgattattactaactgacttgctaagattacaagctaatacagtgacaaaagccaggatca

 gaaccagaacttcagtccagtggtctcacagactcctcctacttccttcttgccacagg

|2051	|2061	|2071	|2081	|2091	|2101
GGGTGATGGACAACCCCTGGTCATGCACCAGCTGCGCTGCAATGGTGTGCTGGAGGGCA					
V	M	D	N	P	L
	V	M	H	Q	L
			R	C	N
			G	V	L
			E	G	I
		|691			|701

|2111	|2121	|2131	|2141	|2151	|2161
TCCGCATCTGCAGGAAAGGCTTCCCAACCGCATCCTCTACGGGGACTTCCGGCAGAGgt					
R	I	C	R	K	G
	F	P	N	R	I
			L	Y	G
			D	F	R
		|711			|721

.
 gggatatgagggtgcaccagagctcatagaacagggggagccaggctgccctgatgggaat

 gggatctgcaggtgaccctggaattctatgggcagagcagatcactgcagagcatgggtg

 actctggacacttcctcctcaggtatcgcatcctgaaccagcgccatccctgagggga

 cagttcattgatagcaggaagggggcagagaagctgctcagctccctggacattgatcac

 aaccagtacaagtttggccacaccaaggtgaggaaaggagactaattaattaaggaa

Exon 20 | Start: 2269 | End: 2392 | Length: 123

.
 ttctcacagactcctcctacttccttcttgccacaggggtgatggacaacccctggtca

.
 tgcaccagctgctgcaatggtgtgctggaggcatccgcatctgcaggaaaggcttcc

 ccaaccgcatcctctacggggacttccggcagaggtgggtatgagggtgcaccagagctc

 atagaacagggggagccaggctgccctgatgggaatgggatctgcaggtgaccctggaat

 tctatgggcagagcagatcactgcagagcatgggtgactctggacacttcctcctcagg

 |2171 |2181 |2191 |2201 |2211 |2221
 GTATCGCATCCTGAACCCAGCGCCATCCCTGAGGGACAGTTCATTGATAGCAGGAAGGG
 Y R I L N P A A I P E G Q F I D S R K G
 |731 |741

 |2231 |2241 |2251 |2261 |2271 |2281
 GGCAGAGAAGCTGCTCAGCTCCCTGGACATTGATCACAACCAGTACAAGTTTGGCCACAC
 A E K L L S S L D I D H N Q Y K F G H T
 |751 |761

 CAAGgtgaggaaaggagactaattaattaaaggaagacatctcttttcattgactcctc
 K

 tgatgcttttcctggtgtaatcatcttagcaaaatctcttacctgtatgctaccctccc

 agtggaaacatctagcaccactcccctcatcccagctccagctgccattgacctcctcct

 gcaatccttttctaggctgttaccttcctaaggtaatccccaccatctctttccctcgt

 acccctccctagtcattggccaacacacaccttgccctgcaggtgttcttcaaggccgggct
 .
 gctg

Exon 21 | Start: 2393 | End: 2529 | Length: 136

.
 agtacaagtttgccacaccaaggtgaggaaaggagactaattaattaaaggaagacatc

 tcttttccattgactcctctgatgcttttctgttgtaatcatcttagcaaaatctctta

 cctgtatgctaccctcccagtggaacatctagcaccactcccctcatcccagctccagc

 tgccattgacctcctccctgcaatccttttctaggctgttaccttcctaaggtaatccc

 caccatctctttccctcgtaccctccctagtcatggccaacacacacctgcctgcagg
 |2291 |2301 |2311 |2321 |2331 |2341
 GTGTTCTTCAAGGCCGGGCTGCTGGGGCTGCTGGAGGAAATGAGGGACGAGAGGCTGAGC
 V F F K A G L L G L L E E M R D E R L S
 |771 |781
 |2351 |2361 |2371 |2381 |2391 |2401
 CGCATCATCACGCGTATCCAGGCCAGTCCCGAGGTGTGCTCGCCAGAATGGAGTACAAA
 R I I T R I Q A Q S R G V L A R M E Y K
 |791 |801
 |2411 |2421
 AAGCTGCTGGAACGTAGgtgagagatctcaagaggaggtttcccgcttctctgaggcca
 K L L E R R

 ggctggttcaggggcagtggtcaggaaaaaagctcagcagatcttcaaacacagagacct

 gcaggaggggctcatatgaacacactgcagtcacagggtcagaggcctcaggaagggtgg

 gagggatgaaggaaatgggatattccaaggtttcaggacctcaggtaggaaggaggcag

 gaggctcagcactcctttcaatgggcccctgcagagactccctgctggtaatccagtgga

acattcgggccttcacg

Exon 22 | Start: 2530 | End: 2785 | Length: 255

.
tgtgctcgccagaatggagtacaaaaagctgctggaacgtaggtgagagatctcaagagg

.
agggttccccgcttctctgaggcccaggctggttcaggggcagtggtcaggaaaaaagctc

.
agcagatcttcaaacacagagacctgcaggaggggctcatatgaacacactgcagtcaca

.
gggtcagaggcctcaggaagggtgggagggatgaaggaaatgggatattcccaaggtttc

.
aggacctcaggtaggaaggaggcaggaggctcagcactcctttcaatgggcccctgcaga

|2431	|2441	|2451	|2461	|2471	|2481
AGACTCCCTGCTGGTAATCCAGTGGAAACATTGCGGCCTTCATGGGGGTCAAGAATTGGCC					
D	S	L	L	V	I
	Q	W	N	I	R
			A	F	M
			G	V	K
			N	W	P
|811			|821		

|2491	|2501	|2511	|2521	|2531	|2541
CTGGATGAAGCTCTACTTCAAGATCAAGCCGCTGCTGAAGAGTGCAGAAAAGAGAGAAGGA					
W	M	K	L	Y	F
	K	I	K	P	L
		L	K	S	A
			E	R	E
			K	E	
|831			|841		

|2551	|2561	|2571	|2581	|2591	|2601
GATGGCCTCCATGAAGGAGGAGTTCACACGCCTCAAAGAGGCGCTAGAGAAGTCCGAGGC					
M	A	S	M	K	E
	E	F	T	R	L
		K	E	A	L
			E	K	S
			E	A	
|851			|861		

|2611	|2621	|2631	|2641	|2651	|2661
TCGCCGCAAGGAGCTGGAGGAGAAGATGGTGTCCCTGCTGCAGGAGAAGAATGACCTGCA					
R	R	K	E	L	E
	E	K	M	V	S
		L	L	Q	E
			K	N	D
			L	Q	
|871			|881		

|2671					
GCTCCAAGTGCAGGCGgtgaggctcctgggctactgttggctcttccaccctgctctgcc					
L	Q	V	Q	A	

|891

.
ttcacttcccacaaccctgcacctccctgcacaggggctcactgtcttgttccttcagtc
.
agaggactctgggatcaacacttctaaagacctccaaagaggtccctcaggaggagaaa
.
gggcagagggaaaagagctgacttttaaagcacaggcttctacttgggttcaacctag
.
atacacagcttaattatttgtgaccttgggcagaccatgcatcatcttgagcctcaat
.
ttcctctagacagga

Exon 23 | Start: 2786 | End: 3028 | Length: 242

.
aagccatcacataagtgttgcatcagcaaatgcaattcccacccttcgatggagga
.
gaccagaggaagaggtccagatgaagatttctggttccttctctctgctcccctcccc
.
agtgttcccaagttatactatcctgaaactcttcccctcccatacttctgaagctcttg
.
ccaagtggggatatcctagagttaccctcctatttgagtgatgtgcctctccttcctct
.
acctgcaagaatgaggaccttacccctgaacagcctcccctctgttcctcaccttcagg

|2681 |2691 |2701 |2711 |2721 |2731
GAACAAGACAACCTGGCAGATGCTGAGGAGCGCTGTGATCAGCTGATCAAAAACAAGATT
E Q D N L A D A E E R C D Q L I K N K I
|901 |911

|2741 |2751 |2761 |2771 |2781 |2791
CAGCTGGAGGCCAAGGTGAAGGAGATGAACGAGAGGCTGGAGGATGAGGAGGAGATGAAT
Q L E A K V K E M N E R L E D E E E M N

		|921			|931
|2801	|2811	|2821	|2831	|2841	|2851
GCTGAGCTCACTGCCAAGAAGCGCAAGCTGGAAGATGAGTGCTCAGAGCTCAAAAGGGAC					
A	E	L	T	A	K
K	R	K	L	E	D
E	C	S	E	L	K
R	D				
		|941			|951
|2861	|2871	|2881	|2891	|2901	|2911
ATCGATGATCTGGAGCTGACACTGGCCAAAGTGGAGAAGGAGAAACACGCAACAGAGAAC					
I	D	D	L	E	L
T	L	A	K	V	E
K	E	K	H	A	T
E	N				
		|961			|971
|2921					
AAGgtaagggcagctccctttggctccagccgggtctcatcaggactctcagaccatac					
K					
.					
tgaccttgacccaggctagccactcggcatccagagagcagcatggaccttgacatggag					
.					
ctccccacagatggcaccaagctggtgacctttgaccctaaaggagatgggattcttggt					
.					
cggcaggtgaaaaacctgacagaggagatggctgggctggatgagatcattgccaaagctg					
.					
accaaggagaagaaagctctgcaagaggcccaccaacaggctctggatgaccttcaggcc					
.					
gag					

Exon 24 | Start: 3029 | End: 3205 | Length: 176

.
tcactgccaaagaagcgcaagctggaagatgagtgctcagagctcaaaaggacatcgatg
.
atctggagctgacactggccaaagtggaaggagaaacacgcaacagagaacaaggtaa
.
gggcagctccctttggctccagccgggtctcatcaggactctcagaccatactgacctt

.
 aaagaatacggcctttggggtttcatcccacagtcatttattcctttatctataaaatatt

 gattcagcatcccctatatctaggcaatctcacagtccttaataacatttggccactc

 tggggaaggtttcccaagtcctgaacacaaagatttaccaagtcctgaggtaactgaaca

 acaaaatcaccaagtcaggatgctttgcctcactgggcctggctccttctctctaccagc

 |3101 |3111 |3121 |3131 |3141 |3151
 CTGGAAGGATCCCTGGAGCAAGAGAAGAAGGTGCGCATGGACCTGGAGCGAGCGAAGCGG
 L E G S L E Q E K K V R M D L E R A K R
 |1041 |1051

 |3161 |3171 |3181 |3191 |3201 |3211
 AAGCTGGAGGGCGACCTGAAGCTGACCCAGGAGAGCATCATGGACCTGGAGAATGACAAG
 K L E G D L K L T Q E S I M D L E N D K
 |1061 |1071

 |3221 |3231 |3241
 CAGCAGCTGGATGAGCGGCTGAAAAAgtactgtgtcccctccctgctgccttctcctc
 Q Q L D E R L K K
 |1081

 cccagcccataacagtacaagcagaccaagacagccatcctctgaggcaacaacctcac

 gcagcctccacaagtggaggcgcaaaccatgggaaaaggcctcccaggcaagggctttcc

 tcccctagctccagatatcagggttagttagatggtcctcctggcaaaaagtccattgt

 atcccatgagtcctttcttctttaggcactcagtgggaatgaaaataacagccttccc

 ccttcatacacatctctctttggaga

Exon 26 | Start: 3352 | End: 3442 | Length: 90

.
 tgaaacaatctagtcgacccctcattttacattatgagaaaacaaggaccaaagatgg

 gaatgtcctgtagagcccaggcccccatcacctgtctacagcactcctcccattacattc

 ttgttgattttcaatctcaccgcaggtgttacacttcagggatcctacatcacccccag

 aagctgttttttctaataaatacctactctttacctgtatcattaccattttcaaccactg

 gtggaccctcctgaggccccacgagtctcccttacctcaccatccctccttccccacaga
 |3251 |3261 |3271 |3281 |3291 |3301
 AAAAGACTTTGAGCTGAATGCTCTCAACGCAAGGATTGAGGATGAACAGGCCCTCGGCAG
 K D F E L N A L N A R I E D E Q A L G S
 |1091 |1101
 |3311 |3321 |3331
 CCAGCTGCAGAAGAAGCTCAAGGAGCTTCAGgtgaggtctggacaccacgcgggatgct
 Q L Q K K L K E L Q
 |1111

 gagtccctgggctggttctgtttccctgccccctcctctagggtgtcctgttcacagca

 ttacaggaactgattatgtgtccatggaggcaggcacgcagctatcacagtgtgcccatg

 gatacatccaaaaggggtcaggtgatccacagagaccctgaaaaggtcacaggcctggag

 ggcagaattcctggcttcctgtctcagctctgccttagttgggtgacctctgggagccca

 ctccagatctctgggtctccatgccctcccc

Exon 27 | Start: 3443 | End: 3832 | Length: 389

```

. . . . .
acttttgttattttttatgactaaactgcttaaaatatccccagaacacaggtctcttt

. . . . .
gtccatctttaagagcaagtttcaaccactttccttccaataaagagcatgtagactgtc

. . . . .
aggccctcgctaaaggaaggctcttcaaactatcttcccaaatacctttaattcccacc

. . . . .
tctccactggaagagctaaactgacttgctgttccagagaagccgagagccttttagagc

. . . . .
cggggggattccagtggagggtccaggcgggtgggtctgagccctttgtgtctgaccagg

      |3341      |3351      |3361      |3371      |3381      |3391
GCACGCATCGAGGAGCTGGAGGAGGAGCTGGAGGCCGAGCGCACGCCAGGGCTAAGGTG
A R I E E L E E E L E A E R T A R A K V
                        |1121                                |1131

      |3401      |3411      |3421      |3431      |3441      |3451
GAGAAGCTGCGCTCAGACCTGTCTCGGGAGCTGGAGGAGATCAGCGAGCGGCTGGAAGAG
E K L R S D L S R E L E E I S E R L E E
                        |1141                                |1151

      |3461      |3471      |3481      |3491      |3501      |3511
GCCGGCGGGGCCACGTCCGTGCAGATCGAGATGAACAAGAAGCGCGAGGCCGAGTTCAG
A G G A T S V Q I E M N K K R E A E F Q
                        |1161                                |1171

      |3521      |3531      |3541      |3551      |3561      |3571
AAGATGCGGCGGGACCTGGAGGAGGCCACGCTGCAGCACGAGGCCACTGCCGCGGCCCTG
K M R R D L E E A T L Q H E A T A A A L
                        |1181                                |1191

      |3581      |3591      |3601      |3611      |3621      |3631
CGCAAGAAGCACGCCGACAGCGTGGCCGAGCTGGGCGAGCAGATCGACAACCTGCAGCGG
R K K H A D S V A E L G E Q I D N L Q R
                        |1201                                |1211

      |3641      |3651      |3661      |3671      |3681      |3691
GTGAAGCAGAAGCTGGAGAAGGAGAAGAGCGAGTTCAAGCTGGAGCTGGATGACGTCACC
V K Q K L E K E K S E F K L E L D D V T
                        |1221                                |1231

```


cccatacctcctcaatgtccatagcgcagaggctgggccagggtcagagggtgcctgggt

 ctccacgccctgctgggatcctctgcctgatgttctcgccccctgggacctgtcctcagg

 cttctccagctacacttctgaggtttcaaggattgtctttgagaagggtcatgttgtttc

 ctcttgtcccatccacacctccatcctccccacctctgccacctcccctgggcagg
 |4171 |4181 |4191 |4201 |4211 |4221
 GAAGAAGCTGGCCAGCGGCTGCAGGAAGCTGAGGAGGCCGTGGAGGCTGTTAATGCCAA
 K K L A Q R L Q E A E E A V E A V N A K
 |1391 |1401
 |4231 |4241 |4251 |4261 |4271 |4281
 GTGCTCCTCGCTGGAGAAGACCAAGCACCGGCTACAGAATGAGATCGAGGACTTGATGGT
 C S S L E K T K H R L Q N E I E D L M V
 |1411 |1421
 |4291 |4301 |4311 |4321 |4331 |4341
 GGACGTAGAGCGCTCCAATGCTGCTGCTGCAGCCCTGGACAAGAAGCAGAGGAACCTCGA
 D V E R S N A A A A L D K K Q R N F D
 |1431 |1441
 |4351
 CAAGgtgggccctgggtgggggccgcagccagcatgcagggaagggggcatgaggggtt
 K
 |1451

 cagtgaaggccagagccatcctccttgagggtgggggaggagggtgagcccaggcagg

 tcctgagacagaccctggacatggggctgaggctggggggctgaagagtgagccttgtcc

 ccgggcagatcctggccgagtggaagcagaagtatgaggagtcgcagtcggagctggagt

 cctcgcagaaggaggctcgctccctcagcacagagctcttcaaactcaagaacgcctatg
 .
 agga

Exon 32 | Start: 4460 | End: 4625 | Length: 165

```
. . . . .
gctggagaagaccaagcaccggctacagaatgagatcgaggacttgatgggtggacgtaga

. . . . .
gcgctccaatgctgctgctgcagccctggacaagaagcagaggaacttcgacaaggtggg

. . . . .
ccctgggtgggggccgcagccagcatgcagggcaagggggcatgaggggttcagtgagag

. . . . .
gccagagccatcctccttgagggtgggggaggagggtgagcccaggcaggtcctgagac

. . . . .
agaccctggacatggggctgaggctggggggctgaagagtgagccttgtccccgggcaga

      |4361      |4371      |4381      |4391      |4401      |4411
ATCCTGCGCCGAGTGGAAGCAGAAGTATGAGGAGTCGCAGTCGGAGCTGGAGTCCTCGCAG
I  L  A  E  W  K  Q  K  Y  E  E  S  Q  S  E  L  E  S  S  Q
                        |1461                                |1471

      |4421      |4431      |4441      |4451      |4461      |4471
AAGGAGGCTCGCTCCCTCAGCACAGAGCTCTTCAAACCTCAAGAACGCCTATGAGGAGTCC
K  E  A  R  S  L  S  T  E  L  F  K  L  K  N  A  Y  E  E  S
                        |1481                                |1491

      |4481      |4491      |4501      |4511      .      .
CTGGAACATCTGGAGACCTTCAAGCGGGAGAACAAAAACCTGCAGGgtgtgctgggggcc
L  E  H  L  E  T  F  K  R  E  N  K  N  L  Q  E
                        |1501

. . . . .
caagaggctggggaggggctgcactggcagtggtcccatatggtgccaccaagggctcc

. . . . .
aagaggcgtctgggcaaagaggcgtgtccctccaactccactggacctcagcagccctca

. . . . .
accgagttaccgtgttccccacacagaggagatctccgacttgactgagcagttgggttc

. . . . .
```

cagcggaaagactatccatgagctggagaaggtccgaaagcagctggaggccgagaagat

.
ggagctgcagtcagccctggaggaggccgaggtgtgtgtgtgtgca

Exon 33 | Start: 4626 | End: 4750 | Length: 124

.
gaggagtgcagtcggagctggagtcctcgagaaggaggctcgctccctcagcacagag

.
ctcttcaaactcaagaacgcctatgaggagtccttggaacatctggagaccttcaagcgg

.
gagaacaaaacctgcaggggtgtgctggggggccaagaggctggggaggggctgactgg

.
cagtgttcccatatggtgccaccaagggtccaagaggcgtctgggcaaagaggcgtgt

.
ccctccaactccactggacctcagcagccctcaaccgagttaccgtgttccccacacaga

|4521 |4531 |4541 |4551 |4561 |4571
AGGAGATCTCCGACTTGACTGAGCAGTTGGGTTCAGCGGAAAGACTATCCATGAGCTGG
E I S D L T E Q L G S S G K T I H E L E
|1511 |1521

|4581 |4591 |4601 |4611 |4621 |4631
AGAAGGTCCGAAAGCAGCTGGAGGCCGAGAAGATGGAGCTGCAGTCAGCCCTGGAGGAGG
K V R K Q L E A E K M E L Q S A L E E A
|1531 |1541

|4641
CCGAGgtgtgtgtgtgtgcagggcacggggtgcagggagctgagctccaggcttttggtc
E

.
cctgttctcatccccgcctttgtccgttttgttcactgtcccatcccagagcctaggac

.
agagcctggcacatagtaggcattcagtgaagatttgtggagtgaatgaatgaccagtca

.
 ctgaactctcttcacataaacattttaccattgcatcttagctgagcttcccatttcca

 catacctcccgggtcccacctctgcctccctctgttttctttataactctatacctgatt
 .
 gcctc

Exon 34 | Start: 4751 | End: 5059 | Length: 308

.
 ctgcctccctctgttttctttataactctatacctgattgcctctgtttccttggcaaca

 cttttctcttcattttcctccttgtcttcatactggctctcccctgtgagggcctgaat

 cactttctcttaggcttatttttattttctcttagattctcttttctccaccttctgct

 tctttgaaccacttacaccactctgaagtcacttcgtatccatgattagtgagcaggcc

 cccaccctgccctgtgccctgactgtctgcctgcatcccctcccccaacccttcccagg

|4651	|4661	|4671	|4681	|4691	|4701
GCCTCCCTGGAGCACGAGGAGGGCAAGATCCTCCGGGGCCAGCTGGAGTTCAACCAGATC					
A S L E H E E G K I L R A Q L E F N Q I					
|1551			|1561		

|4711	|4721	|4731	|4741	|4751	|4761
AAGGCAGAGATCGAGCGGAAGCTGGCAGAGAAGGACGAGGAGATGGAACAGGCCAAGCGC					
K A E I E R K L A E K D E E M E Q A K R					
|1571			|1581		

|4771	|4781	|4791	|4801	|4811	|4821
AACCACCTGCGGGTGGTGGACTCGCTGCAGACCTCCCTGGACGCAGAGACACGCAGCCGC					
N H L R V V D S L Q T S L D A E T R S R					
|1591			|1601		

cttgatacaggcaccagattcctcctgcccctaggttactgcagggacctctgacaggtg

 ccttttagtgaagggaaccgaggctggctccctgctcatgcccactctcctgatcctcagg
 |4961 |4971 |4981 |4991 |5001 |5011
 GACACCCAGATTTCAGCTGGACGATGCAGTCCGTGCCAACGACGACCTGAAGGAGAACATC
 D T Q I Q L D D A V R A N D D L K E N I
 |1661 |1671
 |5021 |5031 |5041 |5051 |5061 |5071
 GCCATCGTGGAGCGGCGCAACAACCTGCTGCAGGCTGAGCTGGAGGAGTTGCGTGCCGTG
 A I V E R R N N L L Q A E L E E L R A V
 |1681 |1691
 |5081 |5091 |5101 |5111 |5121 |5131
 GTGGAGCAGACAGAGCGGTCCCGGAAGCTGGCGGAGCAGGAGCTGATTGAGACTAGTGAG
 V E Q T E R S R K L A E Q E L I E T S E
 |1701 |1711
 |5141 |5151
 CGGGTGCAGCTGCTGCATTCCCAGgtgagcagctcccctgctcattcctgaagggagcac
 R V Q L L H S Q

 aggctggggctcagcaagcaaggcttgagagctatgcatagatgctcaatgcttttcctg

 ctctgcccgaaccctccccaaccagaacaccagcctcatcaaccagaagaagaagatgg

 atgctgacctgtcccagctccagactgaagtggaggaggcagtgcaggagtgcaggaatg

 ctgaggagaaggccaagaaggccatcacggatgtaagtccccactccaccgacccgatc

 cagaccagtgtctctccgtgggct

Exon 36 | Start: 5264 | End: 5389 | Length: 125

.
 gtccgtgccaacgacgacctgaaggagaacatcgccatcgtggagcggcgcaacaacctg

 ctgcaggctgagctggaggagttgctgcccgtggaggagcagacagagcgggtcccgggaag

 ctggcggagcaggagctgattgagactagtgcggggtgcagctgctgcattcccagggtg

 agcagctcccctgctcattcctgaaggagcacaggctggggctcagcaagcaaggcttg

 agagctatgcatagatgctcaatgcttttcctgctctgcccaccctccccaaccaga

 |5161 |5171 |5181 |5191 |5201 |5211
 AACACCAGCCTCATCAACCAGAAGAAGAAGATGGATGCTGACCTGTCCCAGCTCCAGACT
 N T S L I N Q K K K M D A D L S Q L Q T
 |1721 |1731

 |5221 |5231 |5241 |5251 |5261 |5271
 GAAGTGGAGGAGGCAGTGCAGGAGTGCAGGAATGCTGAGGAGAAGGCCAAGAAGGCCATC
 E V E E A V Q E C R N A E E K A K K A I
 |1741 |1751

 |5281
 ACGGATgtaagtccccactccaccgacccgatccagaccagtggtctctccgtgggctgg
 T D
 |1761

 gcagcaagtgtgtgaggacttgaccagaccatgtgccacctctctcctgcacacaggccg

 ccatgatggcagaggagctgaagaaggagcaggacaccagcgcccacctggagcgcatga

 agaagaacatggaacagaccattaaggacctgcagcaccggctggacgaagccgagcaga

 tcgccctcaaggcggaagaagcagctgcagaagctggaagcgcggtgcgggagctgg

 . .
 agaatg

Exon 37 | Start: 5390 | End: 5665 | Length: 275

```
. . . . .
cttgagagctatgcatagatgctcaatgcttttcctgctctgcccaccctccccaacc

. . . . .
cagaacaccagcctcatcaaccagaagaagaagatggatgctgacctgtcccagctccag

. . . . .
actgaagtggaggaggcagtgcaggagtgcaggaatgctgaggagaaggccaagaaggcc

. . . . .
atcacggatgtaagtccccactccaccgaccgatccagaccagtgtctctccgtgggc

. . . . .
tgggcagcaagtgtgtgaggacttgaccagaccatgtgccacctctctcctgcacacagg

      |5291      |5301      |5311      |5321      |5331      |5341
GCCGCCATGATGGCAGAGGAGCTGAAGAAGGAGCAGGACACCAGCGCCACCTGGAGCGC
A  A  M  M  A  E  E  L  K  K  E  Q  D  T  S  A  H  L  E  R
                        |1771                                |1781

      |5351      |5361      |5371      |5381      |5391      |5401
ATGAAGAAGAACATGGAACAGACCATTAAGGACCTGCAGCACCGGCTGGACGAAGCCGAG
M  K  K  N  M  E  Q  T  I  K  D  L  Q  H  R  L  D  E  A  E
                        |1791                                |1801

      |5411      |5421      |5431      |5441      |5451      |5461
CAGATCGCCCTCAAGGGCGGCAAGAAGCAGCTGCAGAAGCTGGAAGCGCGGGTGCGGGAG
Q  I  A  L  K  G  G  K  K  Q  L  Q  K  L  E  A  R  V  R  E
                        |1811                                |1821

      |5471      |5481      |5491      |5501      |5511      |5521
CTGGAGAATGAGCTGGAGGCCGAGCAGAAGCGCAACGCAGAGTCGGTGAAGGGCATGAGG
L  E  N  E  L  E  A  E  Q  K  R  N  A  E  S  V  K  G  M  R
                        |1831                                |1841

      |5531      |5541      |5551      . . . . .
AAGAGCGAGCGGCGCATCAAGGAGCTCACCTACCAGgtgcgacgggcggtgactccaggc
K  S  E  R  R  I  K  E  L  T  Y  Q
                        |1851

. . . . .
```

agagccctggcaccatagccacagtgacaaccagctgaggagaatgaagagtttgctctt

 agcctcttccagggcgaggatgggaatgcagccccgtttcactttgcctagccctgccc

 cactctgaatgtcccctagctcagaggtcagtctctgagcctcctggcctgggagctcca

 tctcaacaccactcttagcccatcgccaggggacacacagaattccagacaaagctc

 acccagtacagctcaccagaaagcaaatatgtagcc

Exon 38 | Start: 5666 | End: 5761 | Length: 95

.
 ggacttcatcccgcatggggtccccggaccctgaaaaacctgctccctggagcactgcac

 acacacaatttgtgcataatttcaggagtcccactagtcttttgactctttcctggta

 cagatcatttaaaatatttacacatatttggttaagaaattataaggagaattcaagtgtt

 tagtgaggatcagaaagtagaattgggtcaggatatcagatgaagcagggcagggcggag

 gggatgctaccttctatgactgtgccatcttcacccctgcctaccctctggccccaga

|5561	|5571	|5581	|5591	|5601	|5611
ACGGAGGAGGACAGGAAAAACCTGCTGCGGCTGCAGGACCTGGTAGACAAGCTGCAGCTA					
T E E D R K N L L R L Q D L V D K L Q L					
	|1861			|1871	

|5621	|5631	|5641	|5651	.	.	.	.
AAGGTCAAGGCCTACAAGCGCCAGGCCGAGGAGGCGgtgagtgaccctgctggggactag							
K V K A Y K R Q A E E A							
	|1881						

.

gccacagggaggcataggagagctcgtccccaagccaggagtctgagaacccaggcccc

 ctctcacctcatgctccacctcccgcaggaggagcaagccaacaccaacctgtccaagt

 tccgcaaggtgcagcacgagctggatgaggcagaggagcgggcggacatcgccgagtc

 aggtcaacaagctgctgggccaagagccgtgacattggcacgaaggtgggtccctcttttg

 ggctttgctagtcacccccacagcaggcataccag

Exon 39 | Start: 5762 | End: 5896 | Length: 134

.
 aggatatcagatgaagcagggcagggcggaggaggatgctaccttctatgactgtgccatc

 ttcaccccctgcctaccctctggccccagacggaggaggacaggaanaacctgctgcgg

 ctgcaggacctggttagacaagctgcagctaaaggtcaaggcctacaagcgccaggccgag

 gaggcgggtgagtgaccctgctggggactaggcccaggggaggcataggagagctcgtccc

 ccaagccaggagtctgagaacccaggccccctctcacctcatgctccacctcccgcagg

|5661	|5671	|5681	|5691	|5701	|5711
GAGGAGCAAGCCAACCAACCTGTCCAAGTTCGCAAGGTGCAGCACGAGCTGGATGAG					
E E Q A N T N L S K F R K V Q H E L D E					
	|1891			|1901	

|5721	|5731	|5741	|5751	|5761	|5771
GCAGAGGAGCGGGCGGACATCGCCGAGTCCCAGGTCAACAAGCTGCGGGCCAAGAGCCGT					
A E E R A D I A E S Q V N K L R A K S R					
	|1911			|1921	

|5781
------	---	---	---	---	---	---	---

GACATTGGCACGAAGgtgggtccctcttttgggctttgctagtcacccccacagcaggca
D I G T K

.
taccagacagagcaccctcaaaccgggatgcttccttttcatttattccacacacttg
.
agccacatggccccagaggccaaggtaatgcagttctctgtgatttcaaggattcttcca
.
gctctaacttttttttttttttttttgagacgggtgtctcactctgccgccaggctgga
.
gtgcagtggcacaatctcagctcactgcaacctctgcctcctgggttctcctgcctcagc
.
ctcccaagtagctgg

Exon 40 | Start: 5897 | End: 6030 | Length: 133

.
acctaattttgtcctgcaatcttgaactcaaacctaaaatggacatcccagagaaccgg
.
ggcctggctttgttctcgcccaggcaacttcctctgaccaaccccagaaccctaccctc
.
cagaacttgcccccgaaatcgatccctggaaacacatgtgctgctgccacaggggctt
.
ccacctgcccacaaagcaggccccccaccatcagacccctctcacctttgttcccatgcc
.
ctgtccctgcccataaccatctctccaaggactgattggactttgtttcctttcaaaagg

|5791 |5801 |+1 |+11 |+21 |+31 |+41
GGCTTGAATGAGGAGTAGCTTTGCCACATCTTGATCTGCTCAGCCCTGGAGGTGCCAGCA
G L N E E *
|1931

|+51 |+61 |+71 |+81 |+91 |+101

AAGCCCCATGCTGGAGCCTGTGTAACAGCTCCTTGGGAGGAAGCAGAATAAAGCAATTTT

 |+111
CCTTGAAGCCGAGATcctgactccagactcttcttcactgccctgaggacccggggatgg

ggtctggactaggggaggtggaaatgcaggggagtgggggcaaattcaaaggcctggcct

aggaggccttcgtggagcagcactgaaaaccctttcacttcccccaaaccagccaaatg

cagcagaggcgacacctctcctcccagccttctccctggtccagccaggatttaaaggag

atttagggagaccctaaagttcacctagagcacctgagcccatctactgtggacctgc

 . . .
accccgacttcgt