

Gene: BRCA2 - Sequence: NG\_012772.3  
Date : January 11, 2015

Exon 1 | Start: 1 | End: 188 | Length: 187

```

. . . . .
gtcccgaggcgcccccacccaacatgagctggagcaaaaagaaagggatgggggacttgg

. . . . .
agtaggcatagggcgcccccctccaagcagggtggcctgggactcttaagggtcagcgag

. . . . .
aagagaacacacactccagctcccgtttattcggtcagatactgacggttgggatgcct

. . . . .
gacaagggaatttcctttcgccacactgagaaatacccgagcggcccacccaggcctgac

. . . . .
ttccgggtggtgctgtgctgctgctgcgtcacggcggtcacgtggccagcgcggttgg

      |-219      |-209      |-199      |-189      |-179      |-169
GTGGCGCGAGCTTCTGAAACTAGGCGGCAGAGGCGGAGCCGCTGTGGCACTGCTGCGCCT

      |-159      |-149      |-139      |-129      |-119      |-109
CTGCTGCGCCTCGGGTGTCTTTTTCGGCGGTGGGTGCGCGCCGGGAGAAGCGTGAGGGGA

      |-99       |-89       |-79       |-69       |-59       |-49
CAGATTTGTGACCGGCGCGGTTTTTGTGCTGCTTACTCCGGCCAAAAAAGAACTGCACCTC

      |-39
TGGAGCGGgttagtggtggtggttagtggttgggacgagcggtcttccgcagtcccagt

. . . . .
ccagcgtggcgggggagcgcctcacgccccgggtcgctgccgaggcttcttgcccttttg

. . . . .
tctctgccaacccccacccatgcctgagagaaaggctccttgcccgaaggcagattttcgc

. . . . .
caagcaaattcgagccccgccccttcctgggtctccatttccgcctccggcccggcct

. . . . .
ttgggctccgccttcagctcaagacttaacttcctcccagctgtccagatgacgccat

```

. .  
ctgaaatt

Exon 2 | Start: 189 | End: 294 | Length: 105

. . . . .  
tggagccctctgtcccactagccacgcgtcactggtagcgtgattgaaactaaatcgt  
. . . . .  
atgaaaatcctcttctctagtcgcactagccacgtttcgagtgcctaagtggctagtgg  
. . . . .  
caccggtttgacagcacagctgtaaaatgttcccatcctcacagtaagctgttaccgtt  
. . . . .  
ccaggagatgggactgaattagaattcaaacaattttccagcgcttctgagttttacct  
. . . . .  
cagtcacataataaggaatgcatccctgtgtaagtgcattttgggtcttctgttttcgaga  
|-29 |-19 |-9 |1 |11 |21  
ACTTATTTACCAAGCATTGGAGGAATATCGTAGGTAAAAATGCCTATTGGATCCAAAGAG  
M P I G S K E  
|1  
|31 |41 |51 |61 . .  
AGGCCAACATTTTTTGAATTTTAAAGACACGCTGCAACAAAGCAGgtattgacaaat  
R P T F F E I F K T R C N K A D  
|11 |21  
. . . . .  
tatataactttataaattacaccgagaaagtgttttctaaaaatgcttgctaaaaaccc  
. . . . .  
agtacgtcacagtgttgcttagaaccataaactgttccttatgtgtgtataaatccagtt  
. . . . .  
aacaacataatcatcgtttgaggttaaccacatgataaatatagaacgtctagtggata  
. . . . .  
aagaggaaactggccccttgactagcagtaggaacaattactaacaatcagaagcatta

. . . . .  
atgttactttatggcagaagttgtccaactttttggtttcagtact

Exon 3 | Start: 295 | End: 543 | Length: 248

. . . . .  
tgattccgaaccatgaataataagaaaataaaataaaatttaaataaaaagctaata  
. . . . .  
atatacagcttttaataatatagttaaatgccatcttgtaacttttgtaactcttggtta  
. . . . .  
cacctttctatagattcgcaagagaatggattaatgatcttgtttaattaatatgcctta  
. . . . .  
acaaaagtaatccatagtcagatcttaagcattttttcttatgatctttaactgttc  
. . . . .  
tgggtcacaaatttgctgtcactgggttaaaactaagggtgggatttttttttaaataga

|71 |81 |91 |101 |111 |121  
ATTTAGGACCAATAAGTCTTAATTGGTTTGAAGAACTTTCTTCAGAAGCTCCACCCTATA  
L G P I S L N W F E E L S S E A P P Y N  
|31 |41

|131 |141 |151 |161 |171 |181  
ATTCTGAACCTGCAGAAGAATCTGAACATAAAAAACAACAATTACGAACCAAACCTATTTA  
S E P A E E S E H K N N N Y E P N L F K  
|51 |61

|191 |201 |211 |221 |231 |241  
AAACTCCACAAAGGAAACCATCTTATAATCAGCTGGCTTCAACTCCAATAATATTCAAAG  
T P Q R K P S Y N Q L A S T P I I F K E  
|71 |81

|251 |261 |271 |281 |291 |301  
AGCAAGGGCTGACTCTGCCGCTGTACCAATCTCCTGTAAAAGAATTAGATAAATTCAAAT  
Q G L T L P L Y Q S P V K E L D K F K L  
|91 |101

|311 . . . . .

TAGACTTAGgtaagtaatgcaatatggtagactggggagaactacaaactaggaatttag  
D L G

. . . . .  
gcaaacctgtgttaaaatcttagctcattcattaattgtgtcatgctgggcaaactcagtc  
. . . . .  
tctctggcctctttttcctcactcgaaaaatggagacgatgaaaataatgtctcataggt  
. . . . .  
ttggattaaattaaataatgtaggtacttagtaaattgttctctttcatccctcctttgat  
. . . . .  
aaatttgccaactgagatttgctgaattacgtctttcttatgccaaaaaacctaggact  
. .  
tgttttgat

Exon 4 | Start: 544 | End: 652 | Length: 108

. . . . .  
accacaccagcggttttctttgtagaggcagagtctcactctgttgctcaggcagggtgttg  
. . . . .  
aactcctgcctcaagcaatcctccacctcagcctccagagccctcaaattataagcca  
. . . . .  
ctgtgctcggggcatcctttttgggggtaatcagcaaactgaaaaacctcttcttacia  
. . . . .  
ctccctatacattctcattcccagtatagaggagactttttgtttttaacacttccaaa  
. . . . .  
gaatgcaaatttataatccagagtatatacattctcactgaattattgtactgtttcagg

321	331	341	351	361	371
GAAGGAATGTTCCCAATAGTAGACATAAAAGTCTTCGCACAGTGAAAACATAAAATGGATC					
R N V P N S R H K S L R T V K T K M D Q					
	111			121	
381	391	401	411	421	. .

AAGCAGATGATGTTTCCTGTCCACTTCTAAATCTTGTCTTAGTGAAAGgtatgatgaag  
 A D D V S C P L L N S C L S E S  
 |131 |141

. . . . .  
 ctattatattaaaatatttaaataaacattttcctacatatatttggtctataaagatg  
 . . . . .  
 aatctgatttttatgctaataattttggctaagagcctggtagaagatcttacatttttaa  
 . . . . .  
 ataatcttttaggttgagtcctttaatagaatagtttttacattagaacatgtaagttg  
 . . . . .  
 ttgttcttgatggtgaattggctggttttctgtatattctgtgatttttaagtaaca  
 . . . . .  
 aaaataacagtggtgaaaagcagtaagtcagtccttgaattatcaattt

Exon 5 | Start: 653 | End: 702 | Length: 49

. . . . .  
 actgctgggattacaggcgtgaaccactgtgcccgccactttacaaaatttttgagtt  
 . . . . .  
 taaaatacacgggtttccagcagctgaaatttgtagtacatatgtggtggcattttaaac  
 . . . . .  
 atcacttgatgattatttaatagcttcatgagagatttactttttaaaatgtaataaaaa  
 . . . . .  
 tatctaaaagtagtattccaacaatttatatgaatgagaatcttcttttaaaaataagat  
 . . . . .  
 aaactagtttttgccagttttttaaaataacctaagggatttgctttgttttattttagt  
 |431 |441 |451 |461 |471 . .  
 TCCTGTTGTTCTACAATGTACACATGTAACACCACAAAGAGATAAGTCAGgtatgattaa  
 P V V L Q C T H V T P Q R D K S V  
 |151  
 . . . . .

aaacaatgctttttattcttagaatactagaaatggttaataaaaaataaaacttaacaatt  
 . . . . .  
 ttcccctttttttacccccagtggtatgtgggagtttgtttcatacaccaaagtttgatga  
 . . . . .  
 aggtaaatattctacctgggtttatttttatgacttagtaattgagaatttgacaatagcg  
 . . . . .  
 ttatacctttgccctgagatttacaaatctgtacctagcattctgcctcatcacaggcaat  
 . . . . .  
 tcagtaaacggttaagtgaataaagagtgaatgaaaaataaatatcctta

Exon 6 | Start: 703 | End: 743 | Length: 40

. . . . .  
 gcttcatgagagatttactttttaaaatgtaatatataaatatctaaaagtagtattccaa  
 . . . . .  
 caatttatatgaatgagaatcttcttttaaaaataagataaactagtttttgccagtttt  
 . . . . .  
 ttaaaataacctaagggtttgctttgttttatttttagtcctgttggttctacaatgtaca  
 . . . . .  
 catgtaacaccacaaagagataagtcaggtatgattaaaaacaatgctttttattcttag  
 . . . . .  
 aatactagaaatggttaataaaaaataaaacttaacaattttcccctttttttacccccagt  
 |481 |491 |501 |511 . . .  
 TGGTATGTGGGAGTTTGTTTCATACACCAAAGTTTGTAAGGtaaataattctacctggtt  
 V C G S L F H T P K F V K  
 |161 |171  
 . . . . .  
 tatttttatgacttagtaattgagaatttgacaatagcggttatacctttgccctgagatt  
 . . . . .  
 tacaaatctgtacctagcattctgcctcatcacaggcaattcagtaaacggttaagtgaat

. . . . .  
 aaagagtgaatgaaaaataatatccttaatgatcagggcatttctataaaaaataaact  
 . . . . .  
 attttctttcctcccagggctgtcagacaccaaacatatttctgaaagtctaggagctg  
 . . . . .  
 aggtgatcctgatatgtcttggtcaagttcttttagctaca

Exon 7 | Start: 744 | End: 858 | Length: 114

. . . . .  
 taaaaataaaacttaacaattttccctttttttacccccagtggtatgtgggagtttgt  
 . . . . .  
 ttcatacaccaaagtttgtgaaggtaaatattctacctggtttattttatgacttagta  
 . . . . .  
 attgagaatttgacaatagcgttatacctttgccctgagatttacaatctgtacctagc  
 . . . . .  
 attctgcctcatcacaggcaattcagtaaacgttaagtgaaataaagagtgaatgaaaaaa  
 . . . . .  
 taatatccttaatgatcagggcatttctataaaaaataaactattttctttcctcccagg

521	531	541	551	561	571
GGTCGTCAGACACCAAAACATATTTCTGAAAGTCTAGGAGCTGAGGTGGATCCTGATATG					
G R Q T P K H I S E S L G A E V D P D M					
	181			191	

581	591	601	611	621	631	.
TCTTGGTCAAGTTCTTTAGCTACACCACCCACCCTTAGTTCTACTGTGCTCATAG						gtaat
S W S S S L A T P P T L S S T V L I V						
	201			211		

. . . . .  
 aatagcaaatgtgtattttacaagaaagagcagatgaggttgataattgtcatctctaata  
 . . . . .  
 cttctgttaaaaggaaatatgaaaagaaaatattagataatgtctttgataagtggttta

. . . . .  
 gtaactgacaataatTTTtattctattaagtgtagattggaataaatacaaacatttag  
 . . . . .  
 tggtagtccagtggtgtcaagcattatgTTTTtagtacgatgtgattaacgtagaatagct  
 . . . . .  
 tacaatatTcctttactggcctatataagcgTTtaagaggcagtatttggtgtg

Exon 8 | Start: 859 | End: 908 | Length: 49

. . . . .  
 taagtcataacctcacagcatcatctgactttccaactcattgtggacagtattaccata  
 . . . . .  
 aagtaatgatcaccaagccatatcttaccaccttgtagtagtactaaggaagtaagtat  
 . . . . .  
 agtttattcactgtgttgattgacctttctaattactatacttaagtacttgaatcaatt  
 . . . . .  
 cattttgtttcaaagtgtcatgtaatacaatagtagatgtgctttttgatgtctgacaa  
 . . . . .  
 aaaataagtttttgcatctagtgataatatacaatacacataaatttttatcttacagt

641	651	661	671	681	.	.
TCAGAAATGAAGAAGCATCTGAAACTGTATTTCTCATGATACTACTGCTgtaagtaa						
R N E E A S E T V F P H D T T A						
221						

. . . . .  
 atgacattgattagactgttgaaattgctaacaattttggaatgccttgtaaattattt  
 . . . . .  
 atcttacatttttaatttcctaactctgtaatttatctaagcctttgagaaagtctctaaa  
 . . . . .  
 cctggctctatatgtgatttttaacttcctgtgaaactctgctgtctctgttaaagttg  
 . . . . .  
 catatatacaatatataccgtagtcccctattcatgggggtatacattccaatatcccca



. . . . .  
gtgaatgcttgaaaccttagatagtagaccgaaccctatatatatatattaa

Exon 9 | Start: 909 | End: 1020 | Length: 111

. . . . .  
ttcatgtcccaagtgggatggagcaagatggtgcaagtttttttctccatttccattt

. . . . .  
tcctttcctaagatttccacatcctagtgggtgcaagatttcatcacactactcaggatga

. . . . .  
cacacaatttaaaacttactaattgcttacttctggaattttccattaaaaatttttggga

. . . . .  
cctaggttgattgcagataactgaaatcaccaaagtgaaccatggataaggggggact

. . . . .  
actactatatgtgcattgagagtttttatactagtgattttaactataatttttgcaga

          |691      |701      |711      |721      |731      |741  
AATGTGAAAAGCTATTTTCCAATCATGATGAAAGTCTGAAGAAAAATGATAGATTATC  
N V K S Y F S N H D E S L K K N D R F I  
          |231                          |241

          |751      |761      |771      |781      |791      .  
GCTTCTGTGACAGACAGTGAAAACACAAATCAAAGAGAAGCTGCAAGTCATGgtaagtcc  
A S V T D S E N T N Q R E A A S H G  
          |251                          |261

. . . . .  
tctgtttagttgaactacaggttttttgttggtgtgtgttttgatttttttttttggagg

. . . . .  
tggagtcttgctctgtcacccgtgatctcggtttaccgcaacctctgcctcccgtgctca

. . . . .  
agcgatcctgcctcagcttgccaagtagctgagattacaagcatgcaccaccatgccc

. . . . .  
ctattgtatttttagtagagatggcatttcaccatgttggccaggctggtctcaaagtgt

. . . . .  
cgtgagccaccatgcccagcctgaactactctttttaattggcaccattgaa

Exon 10 | Start: 1021 | End: 2136 | Length: 1115

. . . . .  
gtaagattaggtgagttttaattgtgtagaactgctaagaaaggtttttagggattgtt  
.  
gtaatgaataaaaggcttttaggttcattggaatcaggggaatcaggctttactagaagaac  
.  
aggagaaggggtgactgaccgaaaaataaaatgccaagtactcagaataaccctttaaat  
.  
actgatatgtaatatatttagcacattctacataaactgtttctatgagaaaggttgtgaga  
.  
ataatataaattatatggcttataaaatattaatgtgcttctgttttatactttaacagg

          |801      |811      |821      |831      |841      |851  
GATTTGAAAAACATCAGGGAATTCATTTAAAGTAAATAGCTGCAAAGACCACATTGGAA  
  F  G  K  T  S  G  N  S  F  K  V  N  S  C  K  D  H  I  G  K  
                  |271                                  |281

          |861      |871      |881      |891      |901      |911  
AGTCAATGCCAAATGTCCTAGAAGATGAAGTATATGAAACAGTTGTAGATACCTCTGAAG  
  S  M  P  N  V  L  E  D  E  V  Y  E  T  V  V  D  T  S  E  E  
                  |291                                  |301

          |921      |931      |941      |951      |961      |971  
AAGATAGTTTTTCATTATGTTTTCTAAATGTAGAACAAAAAATCTACAAAAAGTAAGAA  
  D  S  F  S  L  C  F  S  K  C  R  T  K  N  L  Q  K  V  R  T  
                  |311                                  |321

          |981      |991      |1001      |1011      |1021      |1031  
CTAGCAAGACTAGGAAAAAATTTTCCATGAAGCAAACGCTGATGAATGTGAAAAATCTA  
  S  K  T  R  K  K  I  F  H  E  A  N  A  D  E  C  E  K  S  K  
                  |331                                  |341

          |1041      |1051      |1061      |1071      |1081      |1091

AAAACCAAGTGAAAGAAAAATACTCATTGTATCTGAAGTGAACCAAATGATACTGATC  
 N Q V K E K Y S F V S E V E P N D T D P  
 |351 |361

|1101 |1111 |1121 |1131 |1141 |1151  
 CATTAGATTCAAATGTAGCAAATCAGAAGCCCTTTGAGAGTGAAGTGACAAAATCTCCA  
 L D S N V A N Q K P F E S G S D K I S K  
 |371 |381

|1161 |1171 |1181 |1191 |1201 |1211  
 AGGAAGTTGTACCGTCTTTGGCCTGTGAATGGTCTCAACTAACCCCTTTCAGGTCTAAATG  
 E V V P S L A C E W S Q L T L S G L N G  
 |391 |401

|1221 |1231 |1241 |1251 |1261 |1271  
 GAGCCCAGATGGAGAAAAATACCCTATTGCATATTTCTTCATGTGACCAAAATATTTTCAG  
 A Q M E K I P L L H I S S C D Q N I S E  
 |411 |421

|1281 |1291 |1301 |1311 |1321 |1331  
 AAAAAGACCTATTAGACACAGAGAACAAAAGAAAGAAAGATTTTCTTACTTCAGAGAATT  
 K D L L D T E N K R K K D F L T S E N S  
 |431 |441

|1341 |1351 |1361 |1371 |1381 |1391  
 CTTTGCCACGTATTTCTAGCCTACCAAAATCAGAGAAGCCATTAAATGAGGAAACAGTGG  
 L P R I S S L P K S E K P L N E E T V V  
 |451 |461

|1401 |1411 |1421 |1431 |1441 |1451  
 TAAATAAGAGAGATGAAGAGCAGCATCTTGAATCTCATACAGACTGCATTCTTGCAGTAA  
 N K R D E E Q H L E S H T D C I L A V K  
 |471 |481

|1461 |1471 |1481 |1491 |1501 |1511  
 AGCAGGCAATATCTGGAACCTTCTCCAGTGGCTTCTTCATTTTCAGGGTATCAAAAAGTCTA  
 Q A I S G T S P V A S S F Q G I K K S I  
 |491 |501

|1521 |1531 |1541 |1551 |1561 |1571  
 TATTAGAATAAGAGAATCACCTAAAGAGACTTTCAATGCAAGTTTTTCAGGTCATATGA  
 F R I R E S P K E T F N A S F S G H M T  
 |511 |521

|1581 |1591 |1601 |1611 |1621 |1631  
 CTGATCCAAACTTTAAAAAAGAACTGAAGCCTCTGAAAGTGGACTGGAAATACATACTG

D P N F K K E T E A S E S G L E I H T V  
|531 |541  
|1641 |1651 |1661 |1671 |1681 |1691  
TTTGCTCACAGAAGGAGGACTCCTTATGTCCAAATTTAATTGATAATGGAAGCTGGCCAG  
C S Q K E D S L C P N L I D N G S W P A  
|551 |561  
|1701 |1711 |1721 |1731 |1741 |1751  
CCACCACCACACAGAATTCTGTAGCTTTGAAGAATGCAGGTTTAATATCCACTTTGAAAA  
T T T Q N S V A L K N A G L I S T L K K  
|571 |581  
|1761 |1771 |1781 |1791 |1801 |1811  
AGAAAACAAATAAGTTTATTTATGCTATACATGATGAAACATCTTATAAAGGAAAAAAAA  
K T N K F I Y A I H D E T S Y K G K K I  
|591 |601  
|1821 |1831 |1841 |1851 |1861 |1871  
TACCGAAAGACCAAAATCAGAACTAATTAAGTTCAGCCAGTTTGAAGCAAATGCTT  
P K D Q K S E L I N C S A Q F E A N A F  
|611 |621  
|1881 |1891 |1901 . . . .  
TTGAAGCACCACTTACATTTGCAAATGCTGATTGAGgtacctctgtcctttttttttgt  
E A P L T F A N A D S G  
|631  
. . . . .  
aaatagtacatatagttttatagatgacgattccttctgtgtttttttctgcttttttaa  
. . . . .  
atcttcatatcttatatttaattcttaggcacatcatctgtatacatgattgttaggtcttt  
. . . . .  
aattaccagtgtttagaatcaggtcactcaaacatggtagataagtttgcatagtttggtg  
. . . . .  
tatatccatcactcttgagacagttttattttaagttccggggtacatgtgcaggatgtg  
. . . . .  
caggtttgttacataagtaaacgtatgccatgttgg

Exon 11 | Start: 2137 | End: 7068 | Length: 4931

. . . . .  
 caccctcctgggctcaagcagtccttgcacctcaccctcctgagtaactggcaccacagg  
 . . . . .  
 catacaccaccacaccagctaattttttttttcatagagtcatggtctcactatgttg  
 . . . . .  
 cccaggctagtctcgaactcctgggctcaagcagtcctcctgcctcagcctcccaaaagt  
 . . . . .  
 gctgagattacaggcatgagccactgtgccaaacactacctttttaacttagtgaaaa  
 . . . . .  
 tatttagtgaatgtgattgatgtgtactttaattttgtcactttgtgttttatgtttagg  
 |1911 |1921 |1931 |1941 |1951 |1961  
 GTTTATTGCATTCTTCTGTGAAAAGAAGCTGTTCACAGAATGATTCTGAAGAACCAACTT  
 L L H S S V K R S C S Q N D S E E P T L  
 |641 |651  
 |1971 |1981 |1991 |2001 |2011 |2021  
 TGTCTTAAGTACTAGCTCTTTTGGGACAATTCTGAGGAAATGTTCTAGAAATGAAACATGTT  
 S L T S S F G T I L R K C S R N E T C S  
 |661 |671  
 |2031 |2041 |2051 |2061 |2071 |2081  
 CTAATAATACAGTAATCTCTCAGGATCTTGATTATAAAGAAGCAAAATGTAATAAGGAAA  
 N N T V I S Q D L D Y K E A K C N K E K  
 |681 |691  
 |2091 |2101 |2111 |2121 |2131 |2141  
 AACTACAGTTATTTATTACCCAGAAAGCTGATTCTCTGTCATGCCTGCAGGAAGGACAGT  
 L Q L F I T P E A D S L S C L Q E G Q C  
 |701 |711  
 |2151 |2161 |2171 |2181 |2191 |2201  
 GTGAAAATGATCCAAAAGCAAAAAGTTTCAGATATAAAGAAGAGGTCTTGGCTGCAG  
 E N D P K S K K V S D I K E E V L A A A  
 |721 |731  
 |2211 |2221 |2231 |2241 |2251 |2261  
 CATGTCACCCAGTACAACATTCAAAAGTGGAATACAGTGATACTGACTTTCAATCCCAGA  
 C H P V Q H S K V E Y S D T D F Q S Q K

741	751				
2271	2281	2291	2301	2311	2321
AAAGTCTTTTATATGATCATGAAAATGCCAGCACTCTTATTTTAACTCCTACTTCCAAGG					
S	L	L	Y	D	H
E	N	A	S	T	L
I	L	T	P	T	S
K	D				
761	771				
2331	2341	2351	2361	2371	2381
ATGTTCTGTCAAACCTAGTCATGATTTCTAGAGGCAAAGAATCATACAAAATGTCAGACA					
V	L	S	N	L	V
M	I	S	R	G	K
E	S	Y	K	M	S
D	K				
781	791				
2391	2401	2411	2421	2431	2441
AGCTCAAAGGTAACAATTATGAATCTGATGTTGAATTAACCAAAAATATTCCTCATGGAAA					
L	K	G	N	N	Y
E	S	D	V	E	L
T	K	N	I	P	M
E	K				
801	811				
2451	2461	2471	2481	2491	2501
AGAATCAAGATGTATGTGCTTTTAAATGAAAATTATAAAAACGTTGAGCTGTTGCCACCTG					
N	Q	D	V	C	A
L	N	E	N	Y	K
N	V	E	L	L	P
P	E				
821	831				
2511	2521	2531	2541	2551	2561
AAAAATACATGAGAGTAGCATCACCTTCAAGAAAGGTACAATTCAACCAAAACACAAATC					
K	Y	M	R	V	A
S	P	S	R	K	V
Q	F	N	Q	N	T
N	L				
841	851				
2571	2581	2591	2601	2611	2621
TAAGAGTAATCCAAAAAATCAAGAAGAACTACTTCAATTCAAAAAATAACTGTCAATC					
R	V	I	Q	K	N
Q	E	E	T	T	S
I	S	K	I	T	V
N	P				
861	871				
2631	2641	2651	2661	2671	2681
CAGACTCTGAAGAAGCTTTTCTCAGACAATGAGAATAATTTTGTCTTCCAAGTAGCTAATG					
D	S	E	E	L	F
S	D	N	E	N	N
F	V	F	Q	V	A
N	E				
881	891				
2691	2701	2711	2721	2731	2741
AAAGGAATAATCTTGCTTTAGGAAATACTAAGGAACTTCATGAAACAGACTTGACTTGTG					
R	N	N	L	A	L
G	N	T	K	E	L
H	E	T	D	L	T
C	V				
901	911				
2751	2761	2771	2781	2791	2801
TAAACGAACCCATTTTCAAGAACTCTACCATGGTTTTATATGGAGACACAGGTGATAAAC					
N	E	P	I	F	K
N	S	T	M	V	L
Y	G	D	T	G	D
K	Q				
921	931				

2811	2821	2831	2841	2851	2861
AAGCAACCCAAGTGTCAATTAATAAGATTTGGTTTATGTTCTTGCAGAGGAGAACAAAA					
A	T	Q	V	S	I
			K	K	D
			L	V	Y
			V	L	A
			E	E	N
			K	N	
	941			951	
2871	2881	2891	2901	2911	2921
ATAGTGTAAGCAGCATATAAATGACTCTAGGTCAAGATTAAATCGGACATCTCCT					
S	V	K	Q	H	I
			K	M	T
			L	G	Q
			D	L	K
			S	D	I
			S	L	
	961			971	
2931	2941	2951	2961	2971	2981
TGAATATAGATAAATACCAGAAAAAATAATGATTACATGAACAAATGGGCAGGACTCT					
N	I	D	K	I	P
			E	K	N
			N	D	Y
			M	N	K
			W	A	G
			L	L	
	981			991	
2991	3001	3011	3021	3031	3041
TAGGTCCAATTTCAAATCACAGTTTGGAGGTAGCTTCAGAACAGCTTCAAATAAGGAAA					
G	P	I	S	N	H
			S	F	G
			G	S	F
			R	T	A
			S	N	K
			E	I	
	1001			1011	
3051	3061	3071	3081	3091	3101
TCAAGCTCTCTGAACATAACATTAAGAAGAGCAAAATGTTCTTCAAAGATATTGAAGAAC					
K	L	S	E	H	N
			I	K	K
			S	K	M
			F	F	K
			D	I	E
			E	E	Q
	1021			1031	
3111	3121	3131	3141	3151	3161
AATATCCTACTAGTTTAGCTTGTGTGAAATTGTAATACCTTGGCATTAGATAATCAAA					
Y	P	T	S	L	A
			C	V	E
			I	V	N
			T	L	A
			L	D	N
			Q	K	
	1041			1051	
3171	3181	3191	3201	3211	3221
AGAAACTGAGCAAGCCTCAGTCAATTAATACTGTATCTGCACATTTACAGAGTAGTGTAG					
K	L	S	K	P	Q
			S	I	N
			T	V	S
			A	H	L
			Q	S	S
			V	V	
	1061			1071	
3231	3241	3251	3261	3271	3281
TTGTTTCTGATTGTAAAAATAGTCATATAACCCCTCAGATGTTATTTTCCAAGCAGGATT					
V	S	D	C	K	N
			S	H	I
			T	P	Q
			M	L	F
			S	K	Q
			D	F	
	1081			1091	
3291	3301	3311	3321	3331	3341
TTAATTCAAACCATAATTTAACACCTAGCCAAAAGGCAGAAATTACAGAACTTTCTACTA					
N	S	N	H	N	L
			T	P	S
			Q	K	A
			E	I	T
			E	L	S
			T	I	
	1101			1111	

|3351      |3361      |3371      |3381      |3391      |3401  
 TATTAGAAGAATCAGGAAGTCAGTTTGAATTTACTCAGTTTAGAAAACCAAGCTACATAT  
   L E E S G S Q F E F T Q F R K P S Y I L  
           |1121                                    |1131

|3411      |3421      |3431      |3441      |3451      |3461  
 TGCAGAAGAGTACATTTGAAGTGCCTGAAAACCAGATGACTATCTTAAAGACCACTTCTG  
   Q K S T F E V P E N Q M T I L K T T S E  
           |1141                                    |1151

|3471      |3481      |3491      |3501      |3511      |3521  
 AGGAATGCAGAGATGCTGATCTTCATGTCATAATGAATGCCCCATCGATTGGTCAGGTAG  
   E C R D A D L H V I M N A P S I G Q V D  
           |1161                                    |1171

|3531      |3541      |3551      |3561      |3571      |3581  
 ACAGCAGCAAGCAATTTGAAGGTACAGTTGAAATTAACGGAAGTTTGCTGGCCTGTTGA  
   S S K Q F E G T V E I K R K F A G L L K  
           |1181                                    |1191

|3591      |3601      |3611      |3621      |3631      |3641  
 AAAATGACTGTAACAAAAGTGCTTCTGTTATTAAACAGATGAAAATGAAGTGGGGTTTA  
   N D C N K S A S G Y L T D E N E V G F R  
           |1201                                    |1211

|3651      |3661      |3671      |3681      |3691      |3701  
 GGGGCTTTTATTCTGCTCATGGCACAAAAGTGAATGTTTCTACTGAAGCTCTGCAAAAAA  
   G F Y S A H G T K L N V S T E A L Q K A  
           |1221                                    |1231

|3711      |3721      |3731      |3741      |3751      |3761  
 CTGTGAAACTGTTTAGTGATATTGAGAATATTAGTGAGGAACTTCTGCAGAGGTACATC  
   V K L F S D I E N I S E E T S A E V H P  
           |1241                                    |1251

|3771      |3781      |3791      |3801      |3811      |3821  
 CAATAAGTTTATCTTCAAGTAAATGTCATGATTCTGTTGTTTCAATGTTTAAGATAGAAA  
   I S L S S S K C H D S V V S M F K I E N  
           |1261                                    |1271

|3831      |3841      |3851      |3861      |3871      |3881  
 ATCATAATGATAAACTGTAAGTGAAAAAATAATAAATGCCAACTGATATTACAAAATA  
   H N D K T V S E K N N K C Q L I L Q N N  
           |1281                                    |1291

|3891      |3901      |3911      |3921      |3931      |3941



ATATTGAAATGACTACTGGCACTTTTGTGAAGAAATTACTGAAAATTACAAGAGAAATA  
 I E M T T G T F V E E I T E N Y K R N T  
 |1301 |1311

|3951 |3961 |3971 |3981 |3991 |4001  
 CTGAAAATGAAGATAACAAATATACTGCTGCCAGTAGAAATTCTCATAACTTAGAATTG  
 E N E D N K Y T A A S R N S H N L E F D  
 |1321 |1331

|4011 |4021 |4031 |4041 |4051 |4061  
 ATGGCAGTGATTCAAGTAAAAATGATACTGTTTGTATTTCATAAAGATGAAACGGACTTGC  
 G S D S S K N D T V C I H K D E T D L L  
 |1341 |1351

|4071 |4081 |4091 |4101 |4111 |4121  
 TATTTACTGATCAGCACAACATATGTCTTAAATTATCTGGCCAGTTTATGAAGGAGGGAA  
 F T D Q H N I C L K L S G Q F M K E G N  
 |1361 |1371

|4131 |4141 |4151 |4161 |4171 |4181  
 ACACTCAGATTAAAGAAGATTTGTCAGATTTAACTTTTTTGAAGTTGCGAAAGCTCAAG  
 T Q I K E D L S D L T F L E V A K A Q E  
 |1381 |1391

|4191 |4201 |4211 |4221 |4231 |4241  
 AAGCATGTCATGGTAATACTTCAAATAAAGAACAGTTAACTGCTACTAAAACGGAGCAAA  
 A C H G N T S N K E Q L T A T K T E Q N  
 |1401 |1411

|4251 |4261 |4271 |4281 |4291 |4301  
 ATATAAAAGATTTTGAGACTTCTGATACATTTTTCAGACTGCAAGTGGGAAAAATATTA  
 I K D F E T S D T F F Q T A S G K N I S  
 |1421 |1431

|4311 |4321 |4331 |4341 |4351 |4361  
 GTGTCGCCAAAGAGTCATTTAATAAAAATTGTAAATTTCTTGATCAGAAACCAGAAGAAT  
 V A K E S F N K I V N F F D Q K P E E L  
 |1441 |1451

|4371 |4381 |4391 |4401 |4411 |4421  
 TGCATAACTTTTCCTTAAATTCTGAATTACATTCTGACATAAGAAAGAACAAAATGGACA  
 H N F S L N S E L H S D I R K N K M D I  
 |1461 |1471

|4431 |4441 |4451 |4461 |4471 |4481  
 TTCTAAGTTATGAGGAAACAGACATAGTTAAACACAAAATACTGAAAGAAAGTGTCCCAG

L S Y E E T D I V K H K I L K E S V P V  
 |1481 |1491  
  
 |4491 |4501 |4511 |4521 |4531 |4541  
 TTGGTACTGGAAATCAACTAGTGACCTTCCAGGGACAACCCGAACGTGATGAAAAGATCA  
 G T G N Q L V T F Q G Q P E R D E K I K  
 |1501 |1511  
  
 |4551 |4561 |4571 |4581 |4591 |4601  
 AAGAACCTACTCTATTGGGTTTTTCATACAGCTAGCGGGAAAAAAGTTAAAATTGCAAAGG  
 E P T L L G F H T A S G K K V K I A K E  
 |1521 |1531  
  
 |4611 |4621 |4631 |4641 |4651 |4661  
 AATCTTTGGACAAAGTGAAAAACCTTTTTGATGAAAAAGAGCAAGGTACTAGTGAAATCA  
 S L D K V K N L F D E K E Q G T S E I T  
 |1541 |1551  
  
 |4671 |4681 |4691 |4701 |4711 |4721  
 CCAGTTTTAGCCATCAATGGGCAAAGACCCTAAAGTACAGAGAGGCCTGTAAAGACCTTG  
 S F S H Q W A K T L K Y R E A C K D L E  
 |1561 |1571  
  
 |4731 |4741 |4751 |4761 |4771 |4781  
 AATTAGCATGTGAGACCATTGAGATCACAGCTGCCCCAAAGTGTAAGAAATGCAGAATT  
 L A C E T I E I T A A P K C K E M Q N S  
 |1581 |1591  
  
 |4791 |4801 |4811 |4821 |4831 |4841  
 CTCTCAATAATGATAAAAAACCTTGTCTTATTGAGACTGTGGTGCCACCTAAGCTCTTAA  
 L N N D K N L V S I E T V V P P K L L S  
 |1601 |1611  
  
 |4851 |4861 |4871 |4881 |4891 |4901  
 GTGATAATTTATGTAGACAAACTGAAAATCTCAAAACATCAAAAAGTATCTTTTTGAAAG  
 D N L C R Q T E N L K T S K S I F L K V  
 |1621 |1631  
  
 |4911 |4921 |4931 |4941 |4951 |4961  
 TTAAAGTACATGAAAATGTAGAAAAAGAAACAGCAAAAAGTCCTGCAACTTGTTACACAA  
 K V H E N V E K E T A K S P A T C Y T N  
 |1641 |1651  
  
 |4971 |4981 |4991 |5001 |5011 |5021  
 ATCAGTCCCCTTATTAGTCATTGAAAATTCAGCCTTAGCTTTTTACACAAGTTGTAGTA  
 Q S P Y S V I E N S A L A F Y T S C S R

1661	1671				
5031	5041	5051	5061	5071	5081
GAAAAACTTCTGTGAGTCAGACTTCATTACTTGAAGCAAAAAATGGCTTAGAGAAGGAA					
K T S V S Q T S L L E A K K W L R E G I					
1681	1691				
5091	5101	5111	5121	5131	5141
TATTTGATGGTCAACCAGAAAGAATAAATACTGCAGATTATGTAGGAAATTATTTGTATG					
F D G Q P E R I N T A D Y V G N Y L Y E					
1701	1711				
5151	5161	5171	5181	5191	5201
AAAAATAATTCAAACAGTACTATAGCTGAAAATGACAAAAATCATCTCTCCGAAAAACAAG					
N N S N S T I A E N D K N H L S E K Q D					
1721	1731				
5211	5221	5231	5241	5251	5261
ATACTTATTTAAGTAACAGTAGCATGTCTAACAGCTATTCTACCATTCTGATGAGGTAT					
T Y L S N S S M S N S Y S Y H S D E V Y					
1741	1751				
5271	5281	5291	5301	5311	5321
ATAATGATTCAGGATATCTCTCAAAAAATAAACTTGATTCTGGTATTGAGCCAGTATTGA					
N D S G Y L S K N K L D S G I E P V L K					
1761	1771				
5331	5341	5351	5361	5371	5381
AGAATGTTGAAGATCAAAAAACACTAGTTTTTCCAAAGTAATATCCAATGTAAAGATG					
N V E D Q K N T S F S K V I S N V K D A					
1781	1791				
5391	5401	5411	5421	5431	5441
CAAATGCATACCCACAAACTGTAAATGAAGATATTTGCGTTGAGGAACTGTGACTAGCT					
N A Y P Q T V N E D I C V E E L V T S S					
1801	1811				
5451	5461	5471	5481	5491	5501
CTTCACCCTGCAAAAAATAAAATGCAGCCATTAAATTGTCCATATCTAATAGTAATAATT					
S P C K N K N A A I K L S I S N S N N F					
1821	1831				
5511	5521	5531	5541	5551	5561
TTGAGGTAGGGCCACCTGCATTTAGGATAGCCAGTGGTAAAATCGTTTGTGTTTCACATG					
E V G P P A F R I A S G K I V C V S H E					
1841	1851				

5571	5581	5591	5601	5611	5621
AAACAATTAAAAAGTGAAAGACATATTTACAGACAGTTTCAGTAAAGTAATTAAGGAAA					
T	I	K	K	V	K
			D	I	F
			T	D	S
			F	S	K
			V	I	K
			E	N	
	1861			1871	
5631	5641	5651	5661	5671	5681
ACAACGAGAATAAATCAAAAATTTGCCAAACGAAAATTATGGCAGGTTGTTACGAGGCAT					
N	E	N	K	S	K
			I	C	Q
			T	K	I
			M	A	G
			C	Y	E
			A	L	
	1881			1891	
5691	5701	5711	5721	5731	5741
TGGATGATTCAGAGGATATTCTTCATAACTCTCTAGATAATGATGAATGTAGCACGCATT					
D	D	S	E	D	I
			L	H	N
			S	L	D
			N	D	E
			C	S	T
			H	S	
	1901			1911	
5751	5761	5771	5781	5791	5801
CACATAAGGTTTTTGCTGACATTCAGAGTGAAGAAATTTTACAACATAACCAAAATATGT					
H	K	V	F	A	D
			I	Q	S
			E	E	I
			L	Q	H
			N	Q	N
			M	S	
	1921			1931	
5811	5821	5831	5841	5851	5861
CTGGATTGGAGAAAGTTTCTAAATATCACCTTGTGATGTTAGTTTGGAACTTCAGATA					
G	L	E	K	V	S
			K	I	S
			P	C	D
			V	S	L
			E	T	S
			D	I	
	1941			1951	
5871	5881	5891	5901	5911	5921
TATGTAAATGTAGTATAGGGAAGCTTCATAAGTCAGTCTCATCTGCAAATACTTGTGGGA					
C	K	C	S	I	G
			K	L	H
			K	S	V
			S	S	A
			N	T	C
			G	I	
	1961			1971	
5931	5941	5951	5961	5971	5981
TTTTTAGCACAGCAAGTGGAATCTGTCCAGGTATCAGATGCTTCATTACAAAACGCAA					
F	S	T	A	S	G
			K	S	V
			Q	V	S
			D	A	S
			L	Q	N
			A	R	
	1981			1991	
5991	6001	6011	6021	6031	6041
GACAAGTGTTCCTGAAATAGAAGATAGTACCAAGCAAGTCTTTTCCAAAGTATTGTTTA					
Q	V	F	S	E	I
			E	D	S
			T	K	Q
			V	F	S
			K	V	L
			F	K	
	2001			2011	
6051	6061	6071	6081	6091	6101
AAAGTAACGAACATTAGACCAGCTCACAAGAGAAGAAAATACTGCTATACGTACTCCAG					
S	N	E	H	S	D
			Q	L	T
			R	E	E
			N	T	A
			I	R	T
			P	E	
	2021			2031	



AAGATTGAGAAAAGTACTTTGAAACAGAAAGCAGTAGAAAATTGCTAAAGCTTTTATGGAAG  
 D S E N Y F E T E A V E I A K A F M E D  
 |2221 |2231  
  
 |6711 |6721 |6731 |6741 |6751 |6761  
 ATGATGAACTGACAGATTCTAAACTGCCAAGTCATGCCACACATTCTCTTTTACATGTC  
 D E L T D S K L P S H A T H S L F T C P  
 |2241 |2251  
  
 |6771 |6781 |6791 |6801 |6811 |6821  
 CCGAAAATGAGGAAAATGGTTTGTCAAATTCAAGAATTGGAAAAAGAAGAGGAGAGCCCC  
 E N E E M V L S N S R I G K R R G E P L  
 |2261 |2271  
  
 |6831 |6841. . . . .  
 TTATCTTAGTGGgtaagtgttcatttttacctttcgtgttgccaatcactatttttaag  
 I L V G  
 |2281  
  
 . . . . .  
 tgtttattcagtagacttggtatgctaacaattaagagtgttataaactatgtcttttca  
  
 . . . . .  
 gccatttttgtgtagtcagtttgggggagtagtggtttgatatacagatacacagattcag  
  
 . . . . .  
 tattcgtatacagatttgatatcttggtatacagattcgatatctctgaatctgtatacc  
  
 . . . . .  
 aagaaatcatgttttaagggctcaatatattttcaaaaagattattagtagtataataattg  
  
 . . . .  
 agaaattactgt

Exon 12 | Start: 7069 | End: 7164 | Length: 95

. . . . .  
 ttttcaaaaagtagcttatctgtggtatctggtagcatctgtttatcctatttaggattt  
  
 . . . . .  
 atcctgttttagaccctgttaaatagtgggtgttttaagtggtcaaacagacaaaaatg

. . . . .  
taattgacattgaagactgactttactctttcaaacattaggtcactatttggtgtaagt

. . . . .  
atTTTTgtttaacatttaaagagtcaatacttttagctttaaaaaatggtctatagactt

. . . . .  
ttgagaaataaaactgatattatttgccttaaaaacatatatgaaatatttctttttagg

          |6851      |6861      |6871      |6881      |6891      |6901  
GAGAACCCTCAATCAAAAGAACTTATTAAATGAATTTGACAGGATAATAGAAAATCAAG  
  E  P  S  I  K  R  N  L  L  N  E  F  D  R  I  I  E  N  Q  E  
                          |2291                                  |2301

          |6911      |6921      |6931      .      .      .  
AAAAATCCTTAAAGGCTTCAAAAAGCACTCCAGATGgtaaaattagctttttatttatat  
  K  S  L  K  A  S  K  S  T  P  D  G  
                          |2311

. . . . .  
ctgttctccctctataggtatggtatataatattctgacctcaggtgatccacctgcctc

. . . . .  
tcaaagtgtgggattacagacatgagccactgtgcctaataaggacctctttatactc

. . . . .  
ttaaaaattactgaggacctaaaagagcatttgtttatgtggaatatatctattgatatt

. . . . .  
taccatattagaaatgtaaattgattaatgttaaaattagtaatatatgcgttggtcat

. . . . .  
ttggaagatatgagttcactgagttatgcggatctt

Exon 13 | Start: 7165 | End: 7234 | Length: 69

. . . . .  
atTTTaaatttggtatttgcacagaaattagctaacacctttgagttatgatggttaac

. . . . .  
atcaactgactaaatttatgctgatttctggttatgcttgactgtgagttatttggtg

. . . . .  
 catagtcattatcaatttgtgaatcaatttattttcatagttaacatttattgagcatct  
  
 . . . . .  
 gttacattcactgaaaattgtaaagcctataattgtctcaaattttttgtgtatttacag  
  
 . . . . .  
 taacatggatattctcttagattttaactaatatgtaatatataaaataattgtttcctagg  
  
 |6941 |6951 |6961 |6971 |6981 |6991  
 GCACAATAAAAGATCGAAGATTGTTTATGCATCATGTTTCTTAGAGCCGATTACCTGTG  
 T I K D R R L F M H H V S L E P I T C V  
 |2321 |2331  
  
 |7001 . . . . .  
 TACCCTTTCGgtaagacatgttttaaatttttctaaattctaatacagtatgagaaaagtc  
 P F R  
  
 . . . . .  
 tcgtttttataaatgaacatttctaaaaataatgacactaacgttaagaagttaacactt  
  
 . . . . .  
 cccgttttataaaatttataaaatactttggtagtattttatagtgtgttcatatcatt  
  
 . . . . .  
 attttattttttaattttatgacagctttgtaaagtagacagattttatctaatttat  
  
 . . . . .  
 ggatgaagtactaagggtgagaggaattaaggaaattgctccgaatcagttaacaaaaag  
  
 . .  
 attgcagata

Exon 14 | Start: 7235 | End: 7662 | Length: 427

. . . . .  
 ggtagacatttccctggtgaaggaggttaaggagtactatgatggaattagaggggacaca  
  
 . . . . .  
 ctgagaggggtccacacttgacagactctcttctattatgtgttatgtgaggttagattgta



. . . . .  
aagtcaaaggctagccttgaaaaatgtgatattgttttggaatggcaaccatggtgaata

. . . . .  
caaaacagttaccagaatagtatcaccatgtagcaaatgagggctgcaacaaaggcata

. . . . .  
ttcctaaatatttatatgtgtactagtcataaaacttatatattttctccccattgcagc

      |7011      |7021      |7031      |7041      |7051      |7061  
CACAACTAAGGAACGTCAAGAGATACAGAATCCAAATTTTACCGCACCTGGTCAAGAATT  
T T K E R Q E I Q N P N F T A P G Q E F  
                  |2341                                  |2351

      |7071      |7081      |7091      |7101      |7111      |7121  
TCTGTCTAAATCTCATTGTATGAACATCTGACTTTGGAAAAATCTTCAAGCAATTTAGC  
L S K S H L Y E H L T L E K S S S N L A  
                  |2361                                  |2371

      |7131      |7141      |7151      |7161      |7171      |7181  
AGTTTCAGGACATCCATTTTATCAAGTTTCTGCTACAAGAAATGAAAAAATGAGACACTT  
V S G H P F Y Q V S A T R N E K M R H L  
                  |2381                                  |2391

      |7191      |7201      |7211      |7221      |7231      |7241  
GATTACTACAGGCAGACCAACCAAGTCTTTGTTCCACCTTTTAAACTAAATCACATTT  
I T T G R P T K V F V P P F K T K S H F  
                  |2401                                  |2411

      |7251      |7261      |7271      |7281      |7291      |7301  
TCACAGAGTTGAACAGTGTGTTAGGAATATTAAGTTGGAGGAAAAACAGACAAAAGCAAAA  
H R V E Q C V R N I N L E E N R Q K Q N  
                  |2421                                  |2431

      |7311      |7321      |7331      |7341      |7351      |7361  
CATTGATGGACATGGCTCTGATGATAGTAAAAATAAGATTAATGACAATGAGATTTCATCA  
I D G H G S D D S K N K I N D N E I H Q  
                  |2441                                  |2451

      |7371      |7381      |7391      |7401      |7411      |7421  
GTTTAACAAAAACAACCTCCAATCAAGCAGCAGCTGTAAGTTTCACAAAGTGTGAAGAAGA  
F N K N N S N Q A A A V T F T K C E E E  
                  |2461                                  |2471

      |7431      . . . . .  
ACCTTTAGgtattgtatgacaatttgtgtgatgaatttttgcctttcagtttagatatttc

P L D

```
. . . . .
cgttgtaaataatgtcctgatggttttcccccttgggtggtaattttaagccctt
. . . . .
tttaatgtttttagattttctaaatccaaagattaggtttaaattattctaagtttcttt
. . . . .
caaagataacttcttgaggacttgtaaaaaaattagacacacaatctaggactgctgt
. . . . .
tactggaatatattttctatcatgctactaattttctttttaaatgtgataaaaatagg
. . .
gccgggcg
```

Exon 15 | Start: 7663 | End: 7844 | Length: 181

```
. . . . .
tcctcccagagttcaagtgattctcctgcctcagcctgctgaatagctgggattacaggca
. . . . .
tgtgccaccacacctggctacttttggttttttttacttttatatatttttttttgtt
. . . . .
tagtagagacagggtttctccattttgggtcaggctgggtcttgaactcccacactcagatg
. . . . .
atctgcccgcctcagcctcccaaagtgtgggattacaggcgtgagccactgtgcctggc
. . . . .
caggggttggtgctttttaatttcaattttatttttgctaagtatttattctttgataga
```

```
      |7441      |7451      |7461      |7471      |7481      |7491
ATTTAATTACAAGTCTTCAGAATGCCAGAGATATACAGGATATGCGAATTAAGAAGAAAC
  L  I  T  S  L  Q  N  A  R  D  I  Q  D  M  R  I  K  K  K  Q
      |2481                        |2491
```

```
      |7501      |7511      |7521      |7531      |7541      |7551
AAAGGCAACGCGTCTTTCCACAGCCAGGCAGTCTGTATCTTGCAAAAACATCCACTCTGC
```

R Q R V F P Q P G S L Y L A K T S T L P  
|2501 |2511  
|7561 |7571 |7581 |7591 |7601 |7611  
CTCGAATCTCTCTGAAAGCAGCAGTAGGAGGCCAAGTTCCTCTGCGTGTCTCATAAAC  
R I S L K A A V G G Q V P S A C S H K Q  
|2521 |2531

. . . . .  
AGgtatgtgtttgtctacaatactgatggcttttatgacagagtgttaattttatttcatt  
. . . . .  
aactagtatctacaaatggctttgtttaagaatgaacacattagtgagggaatggatga  
. . . . .  
atgaaatcatcatattttctaattagcctgcagtgaggcagcctctggccccttgctaggcc  
. . . . .  
tgccatcctgctaaagtgatctgtgcttcaaattactacttcttttcccccttcaaa  
. . . . .  
tctttcttattttgtcattgttaaatgctctcagctaggtgttaaagtagtcttactgata  
.  
tt

Exon 16 | Start: 7845 | End: 8032 | Length: 187

. . . . .  
gagattttgtaaaacatcacattttttatcctcacagtaccttcctatggcagatttag  
. . . . .  
caggaggcgtataaacggggtggaaaagggtacagcagactgtggaatgtatggatcattt  
. . . . .  
atattacattaaaatttttagtttctagtaaataacttaaatgtttttgtagtgaagatt  
. . . . .  
ctagtagttaatgaaaatttttggttaaattcagttttggtttgttataattgtttttatt

. . . . .  
 gtgtgatacatgtttacttttaaattgttttctttttgtgtgtgtttatttgtgtagc  
  
 |7621 |7631 |7641 |7651 |7661 |7671  
 CTGTATACGTATGGCGTTTCTAAACATTGCATAAAAAATTAACAGCAAAAATGCAGAGTCT  
 L Y T Y G V S K H C I K I N S K N A E S  
 |2541 |2551  
  
 |7681 |7691 |7701 |7711 |7721 |7731  
 TTTCAGTTTCACACTGAAGATTATTTGGTAAGGAAAGTTTATGGACTGGAAAAGGAATA  
 F Q F H T E D Y F G K E S L W T G K G I  
 |2561 |2571  
  
 |7741 |7751 |7761 |7771 |7781 |7791  
 CAGTTGGCTGATGGTGGATGGCTCATACCCTCCAATGATGGAAAGGCTGGAAAAGAAGAA  
 Q L A D G G W L I P S N D G K A G K E E  
 |2581 |2591  
  
 |7801 . . . . .  
 TTTTATAGgtactctatgcaaaaagattgtgtgttaacttttatgtattccctcatccct  
 F Y R  
 |2601  
  
 . . . . .  
 ctttcttctcttaactgtctctcgaactaaaaagttggctagaaatcaaatttttatgca  
  
 . . . . .  
 ttttaattgttttaagtcattatgggttaagcattctgtagaagtcttttgaaaagtgctg  
  
 . . . . .  
 tttgtcctgggggttaataactggattttcttgatttgggacatttttcttaggcattt  
  
 . . . . .  
 ataaatatagcccaatttataaagttaaatttggccgggtacagtggtcatgcctgtaa  
  
 . .  
 tcccagca

Exon 17 | Start: 8033 | End: 8203 | Length: 170

. . . . .  
 ctccactatgttgcttaggctgggtctcaaacttctggcctcaagcaatcctcctgcctcag

. . . . .  
 cttcccaaatgctgggagtataggcatgagccaccatgctcagcaatgaagttttatc  
 . . . . .  
 agtatgatactttgatacatgtcaaataattttctgaaattatattgtagatcatatgaa  
 . . . . .  
 ctcataaaaacttaatgatcttgaacaatgtagttttgtacagagaatagttgtagttg  
 . . . . .  
 ttgaattcagtatcatcctatgtggtttttatgataatattctactttttattgttcagg  
 . . . . .  
 |7811 |7821 |7831 |7841 |7851 |7861  
 GGCTCTGTGTGACACTCCAGGTGTGGATCCAAAGCTTATTTCTAGAATTGGGTTTATAA  
 A L C D T P G V D P K L I S R I W V Y N  
 |2611 |2621  
 . . . . .  
 |7871 |7881 |7891 |7901 |7911 |7921  
 TCACTATAGATGGATCATATGGAACTGGCAGCTATGGAATGTGCCTTCCTAAGGAATT  
 H Y R W I I W K L A A M E C A F P K E F  
 |2631 |2641  
 . . . . .  
 |7931 |7941 |7951 |7961 |7971 .  
 TGCTAATAGATGCCTAAGCCCAGAAAGGGTGCTTCTTCAACTAAAATACAGgcaagttta  
 A N R C L S P E R V L L Q L K Y R  
 |2651  
 . . . . .  
 aagcattacattacgtaatcatatacggcagtatgggtaaggtttctgtgtagtctgtga  
 . . . . .  
 cttccatgtcaaatgttgacacaagccagttgtcagtgacagttgccatcccacactgct  
 . . . . .  
 gttctcctgtcatccctagccccatttaagagagatcacacattcatgcattgcttgct  
 . . . . .  
 tccctctttccccacccctccttaacctcttgatgtatgagaagaatatgagttactaa  
 . . . . .  
 tttgatccactatttggggattgctaataaagcatttttgcattttatttt

Exon 18 | Start: 8204 | End: 8558 | Length: 354

. . . . .  
gcttccctctttccccacccctccttaacctcttgatgtatgagaagaatatgagttac

. . . . .  
taatttgatccactatttggggattgctaataaagcatttttgcattttatTTTTGctt

. . . . .  
tttaaaaataattgatattttaacaatatgaacaatatattcctagctacaaaattttt

. . . . .  
aattctcagtatttcttagataaattcagtttttattctcagttattcagtgacttgttt

. . . . .  
aaacagtggaattctagagtcacacttcctaaaatatgcatttttgtttccacttttaga

|7981 |7991 |8001 |8011 |8021 |8031  
ATATGATACGGAAATTGATAGAAGCAGAAGATCGGCTATAAAAAAGATAATGGAAAGGGA  
Y D T E I D R S R R S A I K K I M E R D  
|2661 |2671

|8041 |8051 |8061 |8071 |8081 |8091  
TGACACAGCTGCAAAAACACTTGTTCTCTGTGTTTCTGACATAATTCATTGAGCGCAAA  
D T A A K T L V L C V S D I I S L S A N  
|2681 |2691

|8101 |8111 |8121 |8131 |8141 |8151  
TATATCTGAAACTTCTAGCAATAAACTAGTAGTGACAGATACCCAAAAAGTGCCATTAT  
I S E T S S N K T S S A D T Q K V A I I  
|2701 |2711

|8161 |8171 |8181 |8191 |8201 |8211  
TGAACCTTACAGATGGGTGGTATGCTGTTAAGGCCAGTTAGATCCTCCCTCTTAGCTGT  
E L T D G W Y A V K A Q L D P P L L A V  
|2721 |2731

|8221 |8231 |8241 |8251 |8261 |8271  
CTTAAAGAATGGCAGACTGACAGTTGGTCAGAAGATTATTCTTCATGGAGCAGAACTGGT  
L K N G R L T V G Q K I I L H G A E L V  
|2741 |2751

|8281 |8291 |8301 |8311 |8321 |8331.  
GGGCTCTCTGATGCCTGTACACCTCTTGAAGCCCCAGAATCTCTTATGTTAAAGgtaaa  
G S P D A C T P L E A P E S L M L K

|2761

|2771

. . . . .  
ttaatttgcactcttggtaaaaatcagtcattgattcagttaaattctagaagttttaca  
. . . . .  
tttaaattttaaatgcttactaaggatgctcaatttcttagatgtactgataaatttagt  
. . . . .  
ataaaaagcatattcttcagacagttaaagttttgtgagttttgggaggtccagaga  
. . . . .  
tctttcttgagcttaaataatgcatttccaattaaaaagcaaaataaattgcaccattt  
. . . . .  
gattttgggtatctgtagcttgctgccctcttggtctcatagctttgctttgatca

Exon 19 | Start: 8559 | End: 8714 | Length: 155

. . . . .  
gtattttaaactattatgtttaaatcgaagttccttttatctgttttctaatagaacat  
. . . . .  
ttaaatagcatthaagaacttgtagcagtataaacaatatgtttgagaagtactatattgt  
. . . . .  
gaaaatattttcacttttatacagttttttacttatttactgtcttactaatcttcctaa  
. . . . .  
gactttttaaagtgaatatttttaaggcagttctagaagaatgaaaactcttatgatatc  
. . . . .  
tgtaatagaattgaatacatatttaactactaaatcaatatatttattaatttgccaga

|8341 |8351 |8361 |8371 |8381 |8391  
ATTTCTGCTAACAGTACTCGGCCTGCTCGCTGGTATACCAAAGTTGGATTCTTTCTGAC  
I S A N S T R P A R W Y T K L G F F P D  
|2781 |2791

|8401 |8411 |8421 |8431 |8441 |8451  
CCTAGACCTTTTCCTCTGCCCTTATCATCGCTTTTCAGTGATGGAGGAAATGTTGGTTGT  
P R P F P L P L S S L F S D G G N V G C

|2801 |2811  
 |8461 |8471 |8481 . . . .  
 GTTGATGTAATTATTCAAAGAGCATACCTATACAGgtatgatgtattcttgaaacttac  
 V D V I I Q R A Y P I Q  
 |2821

. . . . .  
 catatatctctctctgtgatacaattaattgtttgtttgtttgagatggagtttcggt  
 . . . . .  
 ctcttgcccaggctggagtgcaatggcgtgatcttggttcactgcagcctccacctcccg  
 . . . . .  
 ggttcaagtgattctcctgcctcagcctctcaagtagctgagccaccacacctggcta  
 . . . . .  
 tttgtatctttggttagagaaggggtttcatcatgttggtcaggctgatctcgaactcctg  
 . . . . .  
 acctcaggtgatccactaatctcagcctcccaaagt

Exon 20 | Start: 8715 | End: 8859 | Length: 144

. . . . .  
 gagtgcgaatggcgtgatcttggttcactgcagcctccacctcccgggttcaagtgattct  
 . . . . .  
 cctgcctcagcctctcaagtagctgagccaccacacctggctaattttgtatcttttgta  
 . . . . .  
 gagaaggggtttcatcatgttggtcaggctgatctcgaactcctgacctcaggtgatcca  
 . . . . .  
 ctaatctcagcctcccaaagttctgggattacagatgtgagccactgtgcctggcctgat  
 . . . . .  
 acaattaacttgaatgttatatatgtgacttttttgggtgtgtgtaacacattattacagt

|8491 |8501 |8511 |8521 |8531 |8541  
 TGGATGGAGAAGACATCATCTGGATTATACATATTTGCAATGAAAGAGAGGAAGAAAAG  
 W M E K T S S G L Y I F R N E R E E E K



```

|2831                                |2841

|8551      |8561      |8571      |8581      |8591      |8601
GAAGCAGCAAAATATGTGGAGGCCCAACAAAAGAGACTAGAAGCCTTATTCATAAAATT
E  A  A  K  Y  V  E  A  Q  Q  K  R  L  E  A  L  F  T  K  I
|2851                                |2861

|8611      |8621      |8631      .      .      .      .      .      .
CAGGAGGAATTTGAAGAACATGAAGgtaaaattagttatatggtacacattggtattttct
Q  E  E  F  E  E  H  E  E
|2871

.      .      .      .      .      .      .      .      .      .
aatatgagaacaaagtcttagagactttgaatttaacatttttaatgagtaaattgtttt

.      .      .      .      .      .      .      .      .      .
tattttgagtagtaaattgactttatttttttagtatctagggtattcttttttggtgtta

.      .      .      .      .      .      .      .      .      .
gacaaagaatatgcaacaaggacagaaatatcaggtctaagccatttgtaatatttttcc

.      .      .      .      .      .      .      .      .      .
tgaattcttacctatatgatgtggcttttgcatTTTTgtcatggtagttattagctttca

.      .      .      .      .
tgtgttattatgcctggaactagga

```

Exon 21 | Start: 8860 | End: 8981 | Length: 121

```

.      .      .      .      .      .      .      .      .      .
aattaaccgggcatgttggtgtgcctctaatacccagctactcgggaggctgaggcagga

.      .      .      .      .      .      .      .      .      .
gaaccacttgaaccaggagacagaggttgcaatgagccgagatcacaccactgcactcc

.      .      .      .      .      .      .      .      .      .
cagattgggtgacagagtgagaccctgtctcaaaaaaaaaaaaaagaaaaacttttagc

.      .      .      .      .      .      .      .      .      .
agttatatagtttcttatctttaatctcccttctttgggtgttttatgcttggttcttt

.      .      .      .      .      .      .      .      .      .

```

agtttttagttgcttttgaatttacagtttagtgaattaataatccttttgttttcttaga

          |8641      |8651      |8661      |8671      |8681      |8691  
AAAAACAACAAAACCATATTTACCATCACGTGCACTAACAAGACAGCAAGTTCGTGCTT  
  N  T  T  K  P  Y  L  P  S  R  A  L  T  R  Q  Q  V  R  A  L  
          |2881                          |2891

          |8701      |8711      |8721      |8731      |8741      |8751  
TGCAAGATGGTGCAGAGCTTTATGAAGCAGTGAAGAATGCAGCAGACCCAGCTTACCTTG  
  Q  D  G  A  E  L  Y  E  A  V  K  N  A  A  D  P  A  Y  L  E  
          |2901                          |2911

          .          .          .          .          .          .          .  
AGgtgagagagtaagaggacatataatgaggcttgatgattattcaaggtgagaagctgt

          .          .          .          .          .          .          .  
tttagactctctggccatcacaggaaggagtatgttgaaatgctgcatttctcaaaaggg

          .          .          .          .          .          .          .  
atgtgtacatttctgggattttcagtgatgtgccagacgagtgtggtggtatgttttcaa

          .          .          .          .          .          .          .  
ctatataccgagtagaggatgggaggggttctagaattttatatattaattaaatttggtt

          .          .          .          .          .          .          .  
taaaatgcaggcaaaacttgttttattttgtccctcctgtactctgaagcaaaaaaact

.  
tt

Exon 22 | Start: 8982 | End: 9180 | Length: 198

          .          .          .          .          .          .          .  
atagatctatttctcaaaataatgagcattcagatattagccatctgtaatgtagttggt

          .          .          .          .          .          .          .  
gatgattatgattattagagtacatttataattggaggatcatttttgccgtagggaaat

          .          .          .          .          .          .          .  
agaattattaatagtttgaggcacctgagaatattatgtgagaaactgattacattaacc

. . . . .  
 acacccttaagatgagctctaattttgttgattttgtcctgtttaagccatctagttac  
  
 . . . . .  
 aatagatggaacttttttgttctgattgctttttattccaatatcttaaatgggtcacagg  
  
 |8761 |8771 |8781 |8791 |8801 |8811  
 GGT TATTT CAGTGAAGAGCAGTTAAGAGCCTTGAATAATCACAGGCAAATGTTGAATGAT  
 G Y F S E E Q L R A L N N H R Q M L N D  
 |2921 |2931  
  
 |8821 |8831 |8841 |8851 |8861 |8871  
 AAGAAACAAGCTCAGATCCAGTTGGAAATTAGGAAGGCCATGGAATCTGCTGAACAAAAG  
 K K Q A Q I Q L E I R K A M E S A E Q K  
 |2941 |2951  
  
 |8881 |8891 |8901 |8911 |8921 |8931  
 GAACAAGGTTTATCAAGGGATGTCACAACCGTGTGGAAGTTGCGTATTGTAAGCTATTCA  
 E Q G L S R D V T T V W K L R I V S Y S  
 |2961 |2971  
  
 |8941 |8951 . . . . .  
 AAAAAAGAAAAAGATTTCAGgtaagtatgtaaagctttgtttttatcagttttattaact  
 K K E K D S V  
 |2981  
  
 . . . . .  
 taaaaaatgaccttactaacaaatgattataaatccagataaagtataaagtttagttta  
  
 . . . . .  
 tatcagagaagcaaaatccactactaatgccacaaagagataatataaaagaggatctg  
  
 . . . . .  
 tatttattttgaaacaaacatttaaatgataatcacttcttcattgcatctttctcatc  
  
 . . . . .  
 tttctcaaacagttatactgagtatttggcgtccatcatcagatttatattctctgtta  
  
 . . . . .  
 acagaaggaaagagataca

Exon 23 | Start: 9181 | End: 9344 | Length: 163

. . . . .  
 aagggatgtcacaaccgtgtggaagttgcgtattgtaagctattcaaaaaagaaaaaga  
 . . . . .  
 ttcaggtaagtatgtaaagctttgtttttatcagttttattaacttaaaaaatgacctt  
 . . . . .  
 actaacaaaatgattataaatccagataaagtataaagttagtttatatcagagaagcaa  
 . . . . .  
 aatccactactaatgccacaaagagataatataaaagaggatctgtatttattttgaaa  
 . . . . .  
 caaacatttaaagataatcacttcttccattgcatctttctcatctttctccaaacagt  
 |8961 |8971 |8981 |8991 |9001 |9011  
 TTATACTGAGTATTTGGCGTCCATCATCAGATTATATTCTCTGTTAACAGAAGGAAAGA  
 I L S I W R P S S D L Y S L L T E G K R  
 |2991 |3001  
 |9021 |9031 |9041 |9051 |9061 |9071  
 GATACAGAATTTATCATCTTGCAACTTCAAAATCTAAAAGTAAATCTGAAAGAGCTAACA  
 Y R I Y H L A T S K S K S K S E R A N I  
 |3011 |3021  
 |9081 |9091 |9101 |9111 . . .  
 TACAGTTAGCAGCGACAAAAAACTCAGTATCAACAACCTACCGgtacaaacctttcatt  
 Q L A A T K K T Q Y Q Q L P  
 |3031  
 . . . . .  
 gtaatttttcagttttgataagtgcttgtagtttatggaatctccatagtgtgaatttt  
 . . . . .  
 tgttttgttttctgtaggtttcagatgaaatttatttcagatttaccagccacgggagc  
 . . . . .  
 cccttcacttcagcaaatttttagatccagactttcagccatcttggttctgaggtggacc  
 . . . . .  
 taataggatgtgtcgtttctgttgtaaaaaaacaggtaatgcacaatatagttaatttt  
 . . . . .  
 ttttattgattcttttaaaaaacattgtcttttaaaatctctta

Exon 24 | Start: 9345 | End: 9483 | Length: 138

```
. . . . .
atcacttcttccattgcatctttctcatctttctccaaacagttatactgagtatttggc

. . . . .
gtccatcatcagatttatattctctgttaacagaaggaaagagatacagaatttatcatc

. . . . .
ttgcaacttcaaaatctaaaagtaaactgaaagagctaacatacagtttagcagcgacaa

. . . . .
aaaaaactcagtatcaacaactaccggtacaaacctttcatgtgaatttttcagttttga

. . . . .
taagtgccttgtagtttatggaatctccatatgttgaattttgttttgttttctgtagg

    |9121      |9131      |9141      |9151      |9161      |9171
GTTTCAGATGAAATTTTATTTTCAGATTTACCAGCCACGGGAGCCCCTTCACTTCAGCAAA
V  S  D  E  I  L  F  Q  I  Y  Q  P  R  E  P  L  H  F  S  K
    |3041                                |3051

    |9181      |9191      |9201      |9211      |9221      |9231
TTTTTAGATCCAGACTTTCAGCCATCTTGTTCTGAGGTGGACCTAATAGGATTTGTCGTT
F  L  D  P  D  F  Q  P  S  C  S  E  V  D  L  I  G  F  V  V
    |3061                                |3071

    |9241      |9251      . . . . .
TCTGTTGTGAAAAAACAGgtaatgcacaatatagttaatttttttattgattctttta
S  V  V  K  K  T  G
    |3081

. . . . .
aaaaacattgtcttttaaaatctcttatgattagttggagctaccagttggcaaatttgc

. . . . .
tagctaactagtgatctgaaagtaagcctctttgaacctctgatttttcatgaaaagcaa

. . . . .
ttctctcaattctatattattttcaagggtacaagttacatcctagtctgtgtacttaat
```

Exon 25 | Start: 9484 | End: 9728 | Length: 244

|9261            |9271            |9281            |9291            |9301            |9311  
 GACTTGCCCTTTCTGCTATTTGTCAGACGAATGTTACAATTTACTGGCAATAAAGTTTT  
   L  A  P  F  V  Y  L  S  D  E  C  Y  N  L  L  A  I  K  F  W  
                  |3091                                    |3101

|9321            |9331            |9341            |9351            |9361            |9371  
 GGATAGACCTTAATGAGGACATTATTAAGCCTCATATGTTAATTGCTGCAAGCAACCTCC  
   I  D  L  N  E  D  I  I  K  P  H  M  L  I  A  A  S  N  L  Q  
                  |3111                                    |3121

|9381            |9391            |9401            |9411            |9421            |9431  
 AGTGGCGACCAGAATCCAAATCAGGCCTTCTTACTTTATTGCTGGAGATTTTTCTGTGT  
   W  R  P  E  S  K  S  G  L  L  T  L  F  A  G  D  F  S  V  F  
                  |3131                                    |3141

|9441            |9451            |9461            |9471            |9481            |9491  
 TTTCTGCTAGTCCAAAAGAGGGCCACTTTCAAGAGACATTCAACAAAATGAAAAATACTG  
   S  A  S  P  K  E  G  H  F  Q  E  T  F  N  K  M  K  N  T  V  
                  |3151                                    |3161

|9501. . . . .  
 TTGAGgtaagggttacttttcagcatcaccacacattttggtatttttctattttgacagt  
 E

. . . . .  
 ccagtatcaaggaaatagctttttatacaaattggatagttgaggtagtatgtgaggtaaa  
 . . . . .  
 gtttaatcatatattaattgcccatgaacctcaggagatgggggaatggggaaatgacag  
 . . . . .  
 caactagaaagagaagaatgacttgaagggaatgagttaggagaaattgtgagaaggat  
 . . . . .  
 gttcagaaatgcagactttgtaagcaaactggaaattggttacaagaataatatgagtta  
 .  
 tctgt

Exon 26 | Start: 9729 | End: 9875 | Length: 146

. . . . .  
 gcttcaatccagatcatatgacagcttgctgattaaactagatgacagagaagatctctt  
 . . . . .  
 tccttcagatacacatactttttctctgttcccctctccctatcagctagattcccctaa  
 . . . . .  
 atcactgatactgggttttgtaattttgcatcggcatgtttgacaattggtatcacattta  
 . . . . .  
 ggggtttttcattcttttttggtccaaacttttcatttctgcttttaaggaataactttt  
 . . . . .  
 ggaaacataaatatgtgggtttgcaattttataaagcagcttttccacttattttcttaga

9511	9521	9531	9541	9551	9561
AATATTGACATACTTTGCAATGAAGCAGAAAAACAAGCTTATGCATATACTGCATGCAAAT					
N I D I L C N E A E N K L M H I L H A N					
3171			3181		





9651	9661	9671	9681	9691	9701
ATGTCTTCTCCTAATTGTGAGATATATTATCAAAGTCCTTTATCACTTTGTATGGCCAAA					
M	S	S	P	N	C
				E	I
			Y	Y	Q
			S	P	L
			S	L	C
			M	A	K
	3221			3231	
9711	9721	9731	9741	9751	9761
AGGAAGTCTGTTTCCACACCTGTCTCAGCCCAGATGACTTCAAAGTCTTGTAAGGGGAG					
R	K	S	V	S	T
			P	V	S
			A	Q	M
			T	S	K
			S	C	K
			G	E	
	3241			3251	
9771	9781	9791	9801	9811	9821
AAAGAGATTGATGACCAAAAGAACTGCAAAAAGAGAAGAGCCTTGGATTCTTGAGTAGA					
K	E	I	D	Q	K
			N	C	K
			K	R	R
			A	L	D
			F	L	S
			R		
	3261			3271	
9831	9841	9851	9861	9871	9881
CTGCCTTTACCTCCACCTGTTAGTCCCATTGTACATTTGTTTCTCCGGCTGCACAGAAG					
L	P	L	P	P	V
			S	P	I
			C	T	F
			V	S	P
			A	A	Q
			K		
	3281			3291	
9891	9901	9911	9921	9931	9941
GCATTTTCAGCCACCAAGGAGTTGTGGCACCAAAATACGAAACACCCATAAAGAAAAAAGAA					
A	F	Q	P	P	R
			S	C	G
			T	K	Y
			E	T	P
			I	K	K
			K	E	
	3301			3311	
9951	9961	9971	9981	9991	10001
CTGAATTCTCCTCAGATGACTCCATTTAAAAAATTCAATGAAATTTCTCTTTTGAAAGT					
L	N	S	P	Q	M
			T	P	F
			K	K	F
			N	E	I
			S	L	L
			E	S	
	3321			3331	
10011	10021	10031	10041	10051	10061
AATTCAATAGCTGACGAAGAACTTGCATTGATAAATACCCAAGCTCTTTTGTCTGTTCA					
N	S	I	A	D	E
			E	L	A
			L	I	N
			T	Q	A
			L	L	S
			G	S	
	3341			3351	
10071	10081	10091	10101	10111	10121
ACAGGAGAAAAACAATTTATATCTGTCAAGTGAATCCACTAGGACTGCTCCCACCAGTTCA					
T	G	E	K	Q	F
			I	S	V
			S	E	S
			T	R	T
			A	P	T
			S	S	
	3361			3371	
10131	10141	10151	10161	10171	10181
GAAGATTATCTCAGACTGAAACGACGTTGTACTACATCTCTGATCAAAGAACAGGAGAGT					
E	D	Y	L	R	L
			K	R	C
			T	T	S
			L	I	K
			E	Q	E
			S		
	3381			3391	

10191	10201	10211	10221	10231	10241
TCCCAGGCCAGTACGGAAGAATGTGAGAAAAATAAGCAGGACACAATTACAATAAAAAA					
S	Q	A	S	T	E
		E	C	E	K
		N	K	Q	D
				T	I
				T	T
				K	K
	3401			3411	

  

10251	+1	+11	+21	+31	+41	+51
TATATCTAAGCATTGCAAAGGCGACAATAAATTATTGACGCTTAACCTTCCAGTTTAT						
Y	I	*				

  

+61	+71	+81	+91	+101	+111
AAGACTGGAATATAATTCAAACCACACATTAGTACTTATGTTGCACAATGAGAAAAGAA					
+121	+131	+141	+151	+161	+171
ATTAGTTTCAAATTTACCTCAGCGTTTGTGTATCGGGCAAAAATCGTTTTGCCCGATTCC					
+181	+191	+201	+211	+221	+231
GTATTGGTATACTTTTGCTTCAGTTGCATATCTTAAACTAAATGTAATTTATTAATAA					
+241	+251	+261	+271	+281	+291
TCAAGAAAAACATCTTTGGCTGAGCTCGGTGGCTCATGCCTGTAATCCCAACACTTTGAG					
+301	+311	+321	+331	+341	+351
AAGCTGAGGTGGGAGGAGTGCTTGAGGCCAGGAGTTCAAGACCAGCCTGGGCAACATAGG					
+361	+371	+381	+391	+401	+411
GAGACCCCATCTTTACAAAGAAAAAAGGGGAAAAGAAAATCTTTTAAATCTTTGG					
+421	+431	+441	+451	+461	+471
ATTTGATCACTACAAGTATTATTTTACAAGTAAATAAACATACCATTTTCTTTTAGATT					
+481	+491	+501	+511	+521	+531
GTGTCATTAAATGGAATGAGGTCTCTTAGTACAGTTATTTTGATGCAGATAATTCCTTTT					
+541	+551	+561	+571	+581	+591
AGTTTAGCTACTATTTTAGGGGATTTTTTTTAGAGGTAACCTCACTATGAAATAGTTCTCC					
+601	+611	+621	+631	+641	+651
TTAATGCAAATATGTTGGTTCTGCTATAGTTCCATCCTGTTCAAAAGTCAGGATGAATAT					
+661	+671	+681	+691	+701	+711
GAAGAGTGGTGTTCCTTTTGAGCAATTCTTCATCCTTAAGTCAGCATGATTATAAGAAA					
+721	+731	+741	+751	+761	+771
AATAGAACCCTCAGTGTAACCTCTAATTCCTTTTACTATTCCAGTGTGATCTCTGAAATT					

	+781	+791	+801	+811	+821	+831
AAATTACTTCAACTAAAAATTCAAATACTTTAAATCAGAAGATTCATAGTTAATTTATT						
	+841	+851	+861	+871	+881	+891
TTTTTTTTCAACAAAATGGTCATCCAAACTCAAACCTTGAGAAAATATCTTGCTTTCAAAT						
	+901	.	.	.	.	.
TGGCACTGATTctgcctgctttatTTTTtagcgctatcacaggacccagagcctatgccct						
.	.	.	.	.	.	.
tttaaacttaccacaaaagcagaagattaattcaatttaagatgatactctcatttgta						
.	.	.	.	.	.	.
cgtcctTTTTTTTTTTTTTggagatggagtcttgctttgtcgcccatgctggagtgcag						
.	.	.	.	.	.	.
tggcatgatcctggctcactgcagcctccacttcccgggttcacgtaattctccacctc						
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aagcctccctagtagctgggattacagggacgcaccaccatgccagctaatttttgc						
.	.	.				
ttttagtagag						