Gene: SLC25A13 - Sequence: NG_012247.1
Transcript: NM_014251.2 - Protein: NP_055066.1
Date : March 2, 2015

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

Exon 1 | Start: 5001 | End: 5206 | Length: 205


```
   .      .      .      .      .      .      .      .      .      .      .      .
caacttccccaggccgtgcaccatctgtcgttacttgcccctcccatcggtccgagggcc

   .      .      .      .      .      .      .      .      .      .      .      .
cagtagcccctggtatcagcagaagccagcagcttccctggtggggccacctgccctcag

   .      .      .      .      .      .      .      .      .      .      .      .
gtgacgggcttgcacacggccaagttacctctgcccacgccgcagaggccgccgctgctg

   .      .      .      .      .      .      .      .      .      .      .      .
gacagcgcagcgggggtcacgtgtccctgtccagccactgccccaggatctgagccctccc

   .      .      .      .      .      .      .      .      .      .      .      .
cggctgcagggcagaggccgctggatcacgcgcacccccggcggccaaggctgggcccagc

   |-189       |-179       |-169       |-159       |-149       |-139
AATGGGCGGGCAGCATCCACATGACCCGCGCCGGCGGGAGGGCGTGGGGAGGCAGGCCAG

   |-129       |-119       |-109       |-99        |-89        |-79
GAACGCACGCTGCCTGGCCGTATCGCCGCCCCCACCGCCGCCGCCGCCGGGACTAGAAGT

   |-69        |-59        |-49        |-39        |-29        |-19
GAGCCGCCCGGGTCCCAAACGCCAGCCAGCCAGTCAGTGGGTCCCGCAGTCGCCCGCAAC

   |-9         |1          |11         .      .      .      .      .      .
CGGGGCGAATCATGGCGGCCGCCAAGgtaaccgcgggcccgaggccggggggagcgcgcc
           M   A   A   A   K
           |1

   .      .      .      .      .      .      .      .      .      .      .      .
tgccggatcagcctgggggtgcgagaggctcgggcgctcacgtgtctgggttggtgccac

   .      .      .      .      .      .      .      .      .      .      .      .
aggcggagcaaaatggggtgccgggcagccgttccaccttgcggctgctggagggagggg
```


1

```
.         .         .         .         .         .         .         .         .         .         .         .
gccactcctcccgggcagcacaggcggtcggtgcagagaccgaggcccgacctcgcagcg

.         .         .         .         .         .         .         .         .         .         .         .
gaaactttgtgggccggacactcccacttggccggggagggaagttggtgcctgacgggg

.         .         .         .         .         .
ctgagccagggccgacgaggaggagc
```

Exon 2 | Start: 30197 | End: 30250 | Length: 53

```
        .         .         .         .         .         .         .         .         .         .         .         .
aaaatgacaggtgtttgcaatgtttcacctttctttttaagaaatgatatacattcaac

        .         .         .         .         .         .         .         .         .         .         .         .
attagatattaagagattttgctactggttccttgcataaaattttatcattttagaagc

        .         .         .         .         .         .         .         .         .         .         .         .
tgcataaggagtctaatttaaaatgggaaggggggcatagtttatgcactggggcaacatg

        .         .         .         .         .         .         .         .         .         .         .         .
gtatttaagtacaaaaatgaaatgcactaattttttaatctgagatttattttcctttagt

        .         .         .         .         .         .         .         .         .         .         .         .
cggctagcttgatttctcagctttgttgtaataacataaacatttttatgtttatttata

     |21        |31        |41        |51        |61        .
GTGGCTTTAACCAAGAGAGCAGATCCAGCTGAGCTTAGAACAATATTTTTGAAGgtcagt
V  A  L  T  K  R  A  D  P  A  E  L  R  T  I  F  L  K
                |11                           |21

        .         .         .         .         .         .         .         .         .         .         .         .
ataaaggaatctattttgtttcttgtttgatttgtgttctataacttttaaatattattt

        .         .         .         .         .         .         .         .         .         .         .         .
tcaaacagctctttatttcgttgttatattttgaaaaagtcccaaagtgtcagcccggca

        .         .         .         .         .         .         .         .         .         .         .         .
cggtggctcatgcctgtaatcccagcactttgggaggctgaggtgggtggatcccctgag

        .         .         .         .         .         .         .         .         .         .         .         .
gtcaggagtttgagaccagcctggccaacatggtgaaaccccatctttactgaaagtacc

        .         .         .         .         .         .         .         .         .         .         .         .
aaaactagccaggtgtggtggcacgtgcctgtaatcctggctattcaggaggct
```

Exon 3 | Start: 49810 | End: 49952 | Length: 142

```
.    .    .    .    .    .    .    .    .    .    .    .
ctggcctctacctgctggagccagtagcacccttcctcacatgttatgacaatcttaatt

.    .    .    .    .    .    .    .    .    .    .    .
gccatcagatattgccaagtgtccctgtgggaaaacattgctcccagttaagtttataaa

.    .    .    .    .    .    .    .    .    .    .    .
cataaaacttgacttgtttttttctttgaactgttgggagataatggtcattatgaagcgt

.    .    .    .    .    .    .    .    .    .    .    .
acatgatcatatctgatattttatcgtttggatattttcaacttttttcacatatcactct

.    .    .    .    .    .    .    .    .    .    .    .
catgattatatactgttgaaaatcaaatatataaaatactgtttttctttttttttaaaca

 |71        |81        |91        |101        |111        |121
TATGCAAGCATTGAGAAAAACGGTGAATTTTTCATGTCCCCCAATGACTTTGTCACTCGA
Y   A   S   I   E   K   N   G   E   F   F   M   S   P   N   D   F   V   T   R
                                          |31                              |41

 |131       |141       |151        |161        |171        |181
TACTTGAACATTTTTGGAGAAAGCCAGCCTAATCCAAAGACTGTGGAACTTTTAAGTGGA
Y   L   N   I   F   G   E   S   Q   P   N   P   K   T   V   E   L   L   S   G
                                          |51                              |61

 |191       |201       |211  .    .    .    .    .    .    .    .
GTGGTGGATCAGACCAAAGATGGgtatgtttatttttaattattttatttaattcttttt
V   V   D   Q   T   K   D   G
                                          |71

    .    .    .    .    .    .    .    .    .    .    .    .
gtttgaaacagctttcttttgctctaatgaccaggaagtcattaaatgtataccttccca

    .    .    .    .    .    .    .    .    .    .    .    .
tctcttaggaccattttctgtacttactactattattattacattatttgagtaataatg

    .    .    .    .    .    .    .    .    .    .    .    .
tagttccttcaatcattgtttcaagttgggggattcaatatgtatatatttgactctttta

    .    .    .    .    .    .    .    .    .    .    .    .
aagaatgctttatcgtatcagagaactattattgtcaacaaggtggtgatgtgcagatgt

    .    .    .    .    .    .
atgagagtatttatatgcctttg
```

4

Exon 4 | Start: 92231 | End: 92346 | Length: 115

```
       .        .        .        .        .        .        .        .        .        .        .        .
ccaaaaacatgcctgaaggaagactgaaacatatatgatgctggataaaacagttatatt

       .        .        .        .        .        .        .        .        .        .        .        .
tgaaattataatgtatttagtgtgtaacttcatggtcaatgctgtcatgtcttttagatt

       .        .        .        .        .        .        .        .        .        .        .        .
ctgtgcattattatttcagtccactatatgtaaaagtaaatgctaaatgtttataaatgt

       .        .        .        .        .        .        .        .        .        .        .        .
tttcagtttgaattttatgtttttggcagtgatatcttattttttccctcagtgtatgttt

       .        .        .        .        .        .        .        .        .        .        .        .
gtatatgcttctgttttccacaagctactgacttttgctttatgtttgttttatgttgca

          |221          |231          |241          |251          |261          |271
ATTAATATCTTTTCAAGAATTTGTTGCCTTTGAATCTGTCCTGTGTGCCCCTGATGCTTT
 L   I   S   F   Q   E   F   V   A   F   E   S   V   L   C   A   P   D   A   L
                                          |81                                          |91

          |281          |291          |301          |311          |321
GTTTATGGTAGCCTTTCAGCTGTTTGACAAAGCTGGCAAAGGAGAAGTAACTTTTGgtaa
 F   M   V   A   F   Q   L   F   D   K   A   G   K   G   E   V   T   F   E
                                          |101

       .        .        .        .        .        .        .        .        .        .        .        .
gaagcatgcttctgtgcacgtctgtgtaagtgtggacttgtgtgagcattttctttttttt

       .        .        .        .        .        .        .        .        .        .        .        .
tttttctaggaacaaaataaagtgtatggaaattctttatagaagatagtatatcccttt

       .        .        .        .        .        .        .        .        .        .        .        .
tagtaaagatacttcaatgtttttggagctccagttcaaacatcttcctattcgaaaaaaa

       .        .        .        .        .        .        .        .        .        .        .        .
caagtttctggcttagtagttttgatactctgatttagtttttaaggtgagggagatgtgg

       .        .        .        .        .        .        .        .        .        .        .        .
catgactgtttttcatagagtcatagcatgtgagagccagacaggacttctgtttct
```

5

Exon 5 | Start: 118171 | End: 118310 | Length: 139

```
  .     .     .     .     .     .     .     .     .     .     .     .     .
caaatgagatgataatagttttagctttctacttgggtttcctacagcctttaggttgtg

  .     .     .     .     .     .     .     .     .     .     .     .     .
tgtgtgtgagagacttcttgattttcccccctttattttatttggtgggattcttgacc

  .     .     .     .     .     .     .     .     .     .     .     .     .
ttgatttcttaactgattccttgagggttctttatttctgccatagtttgtaatctgta

  .     .     .     .     .     .     .     .     .     .     .     .     .
tgtctatttaaaattgaattactttttttaataagaaaaagcgatatccattcaataaca

  .     .     .     .     .     .     .     .     .     .     .     .     .
gattttatcagaaagaacttcatttactttgttttaatcaacctgtcttttctcttttca

   |331       |341       |351       |361       |371       |381
AGGATGTTAAGCAAGTTTTTGGACAGACCACAATTCATCAACATATTCCATTTAACTGGG
  D   V   K   Q   V   F   G   Q   T   T   I   H   Q   H   I   P   F   N   W   D
  |111                                    |121

   |391       |401       |411       |421       |431       |441
ATTCAGAATTTGTGCAACTACATTTTGGAAAAGAAAGAAAAAGACACCTGACATATGCGG
  S   E   F   V   Q   L   H   F   G   K   E   R   K   R   H   L   T   Y   A   E
  |131                                    |141

   |451       |461       .     .     .     .     .     .     .     .
AATTTACTCAGTTTTTATTGgtgggtctagctcttaaaaagttaaaagggtatggccggg
  F   T   Q   F   L   L
  |151

      .     .     .     .     .     .     .     .     .     .     .     .
cacggtggctcacacctataatcctagcactttgggaggccgaggtgggcggatgacgag

      .     .     .     .     .     .     .     .     .     .     .     .
gtcaggagatcgagaccatcctggccaacatggtgaaaccccgtctctactaaaaataca

      .     .     .     .     .     .     .     .     .     .     .     .
aaaaattagccaggcgtggtggccggcgcctgtggtcccagctacttgggaggctgaggc

      .     .     .     .     .     .     .     .     .     .     .     .
aggagaatggtgtgaacttgggaggtggagcttgcagtgagctgagatcgcaccactgca

      .     .     .     .
gtccggcctgggtgaaagag
```

6

Exon 6 | Start: 133965 | End: 134111 | Length: 146

```
   .     .     .     .     .     .     .     .     .     .     .     .
cacttcattccggttttcattttctttgtgttcatggactctagagagcacggaagtaat

   .     .     .     .     .     .     .     .     .     .     .     .
tgggtttcattgggtagcagagtaaggtagagtgcactttctcaagacatgttcattggt

   .     .     .     .     .     .     .     .     .     .     .     .
ctgagcaaagttctgtctcttggaaggagacagtagcttggtggtgctattaggcagatg

   .     .     .     .     .     .     .     .     .     .     .     .
agggcttgttagatcaagatgtaaactctctttcttcagtctgattttaaaatgaactgt

   .     .     .     .     .     .     .     .     .     .     .     .
catttgtagtaattattaaatgagaagcataaattaagtattttactttctttatttgta

    |471       |481       |491       |501       |511       |521
GAAATACAACTGGAGCACGCAAAGCAAGCCTTTGTGCAACGGGACAATGCTAGGACTGGG
E   I   Q   L   E   H   A   K   Q   A   F   V   Q   R   D   N   A   R   T   G
            |161                                   |171

    |531       |541       |551       |561       |571       |581
AGAGTCACAGCCATCGACTTCCGAGACATCATGGTCACCATCCGCCCCCATGTCTTGACT
R   V   T   A   I   D   F   R   D   I   M   V   T   I   R   P   H   V   L   T
            |181                                   |191

    |591       |601       |611       .     .     .     .     .     .
CCTTTTGTAGAAGAATGTCTAGTAGCTgtaagttgtaacttgccctaatgaagtggttta
P   F   V   E   E   C   L   V   A
            |201

   .     .     .     .     .     .     .     .     .     .     .     .
actcagtaaataaggaattataaaaacaattcttataagttatgtagtgttttttttctg

   .     .     .     .     .     .     .     .     .     .     .     .
ttgcaaacactaacattttaatgtgatcacatacattactaaactcaaacaaagagtgtg

   .     .     .     .     .     .     .     .     .     .     .     .
ttttggctagttttagtgggtaggttaatttgttgtctgggtaatacggaatatcttcga

   .     .     .     .     .     .     .     .     .     .     .     .
gaaatacattagctttttaaagataaaaggaaaaacagatttgtgatctcatgttaattt

   .     .     .     .     .     .
tgttttagattttgaagtatatcaagg
```

7

Exon 7 | Start: 135901 | End: 136039 | Length: 138

```
.     .     .     .     .     .     .     .     .     .     .     .
catttccaattgaaatttgaactctaaattactactagtcctgttataatcctacacatg


.     .     .     .     .     .     .     .     .     .     .     .
tatttatttagttttctaggagttgtgtatggagagtacaagttctggtcatgattagtt


.     .     .     .     .     .     .     .     .     .     .     .
gcagttgcttctaaaaatcatttatagctttttttttaatgcaaaagaaaaatacttatag


.     .     .     .     .     .     .     .     .     .     .     .
tcatttcttcttgtacatgcattttttgattactttcaaactagtttttagatgtatgtact


.     .     .     .     .     .     .     .     .     .     .     .
tctgaatcatctataaatcttttgtatattttttcttctctcttgttttcaatttatttga


     |621        |631        |641        |651        |661        |671
GCTGCTGGAGGTACCACATCCCATCAAGTTAGTTTCTCCTATTTTAATGGATTTAATTCG
A  A  G  G  T  T  S  H  Q  V  S  F  S  Y  F  N  G  F  N  S
             |211                                    |221


     |681        |691        |701        |711        |721        |731
CTCCTTAACAACATGGAACTCATTAGAAAGATCTATAGCACTCTGGCTGGCACCAGGAAA
L  L  N  N  M  E  L  I  R  K  I  Y  S  T  L  A  G  T  R  K
             |231                                    |241


     |741        |751        .     .     .     .     .     .     .     .
GATGTTGAAGTGACTAAGGgtgagtgagaatatatctgaattctagcctgcaagtattgt
D  V  E  V  T  K  E
                  |251


     .     .     .     .     .     .     .     .     .     .     .     .
ggtgtattattattagggtgaagaaggcaactagtactttattattttttctatcccattg


     .     .     .     .     .     .     .     .     .     .     .     .
acacatattaactatatgataacgtgtgttttttcatcctttgatcagacaaacaaaagca


     .     .     .     .     .     .     .     .     .     .     .     .
aacaaaacaatcttcaccaagttttaaacaaactgggcccagcttggtgactcacacctg


     .     .     .     .     .     .     .     .     .     .     .     .
aaatcccagcagtttgggaggccgaggtgggtggatcacctgagatcaggagttcgagac


     .     .     .     .
cagcctggccaagagggtg
```

8

Exon 8 | Start: 137474 | End: 137567 | Length: 93
BE AWARE: Flanking intron is shared with the following exon

```
.     .     .     .     .     .     .     .     .     .     .     .
ctgggacctatgcatatgaagtttcatatatgattccttattttctctgattggcaattt

.     .     .     .     .     .     .     .     .     .     .     .
gaataacatcagatgaccccaagcttttaaactgtatattcaagaacatattctgcacac

.     .     .     .     .     .     .     .     .     .     .     .
gctttccaaatggatgcaagaactgcaaaaattcttaccttatttggattgacttgaatt

.     .     .     .     .     .     .     .     .     .     .     .
ctacaactgatgataataataaagttttgtgatgttcactcattccagtgccttgagtta

.     .     .     .     .     .     .     .     .     .     .     .
atgctgaatttagtggctatttcttcttgaatctttcccttttaacttttcttccataca

        |761        |771        |781        |791        |801        |811
AGGAGTTTGTTCTGGCAGCTCAGAAATTTGGTCAGGTTACACCCATGGAAGTTGACATCT
   E   F   V   L   A   A   Q   K   F   G   Q   V   T   P   M   E   V   D   I   L
                                       |261                            |271

        |821        |831        |841        .     .     .     .     .
TGTTTCAGTTAGCAGATTTATATGAGCCAAGGGGgtaagttggcttttttttttttttttt
   F   Q   L   A   D   L   Y   E   P   R   G
                                       |281

        .     .     .     .     .     .     .     .     .     .     .     .
ttggaattagcttaataaaaggaggttaggaggagggcagcaatcaggagaaaaagaagc

        .     .     .
caaactgaaggcta
```

Exon 9 | Start: 137770 | End: 137854 | Length: 84
BE AWARE: Flanking intron is shared with the previous exon

```
.    .    .    .    .    .    .    .    .    .    .    .    .
tactgaaatatgagaaatgaaaaaagggatgtttttaaattttataatgtaaattgtaat

.    .    .    .    .    .    .    .    .   |851       |861
aaattggtatatttgttgcttgtgtttgttttccctacaACGTATGACCTTAGCAGAC
                                           R  M  T  L  A  D

   |871       |881       |891       |901       |911       |921
ATTGAACGGATTGCTCCTCTGGAAGAGGGAACTCTGCCCTTTAACTTGGCTGAGGCCCAG
 I   E   R   I   A   P   L   E   E   G   T   L   P   F   N   L   A   E   A   Q
   |291                           |301

   |931    .    .    .    .    .    .    .    .    .    .
AGGCAGgtgagcaaagaggagcaaacttgcattctggggtttccttagcaggataccccca
R  Q
   |311

.    .    .    .    .    .    .    .    .    .    .    .    .
accctgttccacttgcagttgcctttgcggcattggtatctgacttaaccattttttctgt

.    .    .    .    .    .    .    .    .    .    .    .    .
tttgcaccaaaactctcgataaattttaaaggctgtaaagagaaattgcttagaaatggt

.    .    .    .    .    .    .    .    .    .    .    .    .
gtgataaacaggtatttggcatttgctcatttcttgctaaggtggagtgatttcctaact

.    .    .    .    .    .    .    .    .    .    .    .    .
gcaccagaagcctaatgctccgaaaacatgaaggaggtcttttctcctttcttgaagtct

.    .
catgtt
```

Exon 10 | Start: 142137 | End: 142221 | Length: 84

```
.     .     .     .     .     .     .     .     .     .     .
gtgatgtttttaactgtgcattttttttaatgagaatttgaaaataggcttataacatca

.     .     .     .     .     .     .     .     .     .     .
tttttgtcaaaggatggttttgattatattgaaatttggttttaaacattaatagcacta

.     .     .     .     .     .     .     .     .     .     .
aaatcttttattaataagaacttatgaaatccattcctactttttttccttgacatttta

.     .     .     .     .     .     .     .     .     .     .
gttgtatcatggatttagaacccaatgagtaatgtttaaagttaatgtatggtcattttt

.     .     .     .     .     .     .     .     .     .     .
gttttatcttcttttctgtcacctgttttcctgctctctgattcctgtgcatgcaaagca
```

```
        |941        |951        |961        |971        |981        |991
AAGGCCTCAGGTGATTCAGCTCGACCAGTTCTTCTACAAGTTGCAGAGTCGGCCTACAGG
K   A   S   G   D   S   A   R   P   V   L   L   Q   V   A   E   S   A   Y   R
                                    |321                             |331
```

```
        |1001       |1011       .     .     .     .     .     .     .
TTTGGTCTGGGTTCTGTTGCTGGAGgttagtcatggatgagagagaaaaattttcacttttg
F   G   L   G   S   V   A   G   A
```

```
    .     .     .     .     .     .     .     .     .     .     .
ttattcctattctctttttctctgatttttccatcttgaaatgttaaaggacaaagtcttct

    .     .     .     .     .     .     .     .     .     .     .
ctagtctttcccaatgccagttatcagtttctacctgtgaggtagggcaagagtaaaggg

    .     .     .     .     .     .     .     .     .     .     .
aactcttttcccatacctgcatgtgatcagggacttacaagtggcattttcctctatcta

    .     .     .     .     .     .     .     .     .     .     .
cagatcaggccttccaaagacaggttactaatgaggttgggctgtagcaatgtgccttaa

    .     .     .     .     .
tttaaaatatctatgacatcctttt
```

Exon 11 | Start: 142713 | End: 142871 | Length: 158

```
       .         .         .         .         .         .         .         .         .         .         .         .
tacaagtggcattttcctctatctacagatcaggccttccaaagacaggttactaatgag

       .         .         .         .         .         .         .         .         .         .         .         .
gttgggctgtagcaatgtgccttaatttaaaatatctatgacatccttttattaggggat

       .         .         .         .         .         .         .         .         .         .         .         .
acttgaatgaaaaccctcaattgtttattaaagatataagaaaggtagtactgttttaaa

       .         .         .         .         .         .         .         .         .         .         .         .
atctgtatttaaaattcaaaacacatttcttttctcagtcttgtccttgactttaactac

       .         .         .         .         .         .         .         .         .         .         .         .
cttcttctttcttctgacctatcttactttcttctgagataatgatattgtttaattta
```

```
   |1021      |1031      |1041      |1051      |1061      |1071
CTGTTGGAGCCACTGCTGTGTATCCTATCGATCTTGTAAAAACTCGAATGCAGAACCAAC
  V   G   A   T   A   V   Y   P   I   D   L   V   K   T   R   M   Q   N   Q   R
  |341                                      |351
```

```
   |1081      |1091      |1101      |1111      |1121      |1131
GATCAACTGGCTCTTTTGTGGGAGAACTCATGTATAAAAACAGCTTTGACTGTTTTAAGA
  S   T   G   S   F   V   G   E   L   M   Y   K   N   S   F   D   C   F   K   K
  |361                                      |371
```

```
   |1141      |1151      |1161      |1171      .         .         .         .
AAGTGCTACGCTATGAAGGCTTCTTTGGACTGTATAGAGgttagtgccacatgctcaata
  V   L   R   Y   E   G   F   F   G   L   Y   R   G
  |381                                      |391
```

```
       .         .         .         .         .         .         .         .         .         .         .         .
cctgttaggtgaaataacactcaaaggtttggtttctcatcttagtgcctgacatgaatt

       .         .         .         .         .         .         .         .         .         .         .         .
agcaagactgcgttaaaatggaaatacagcagattttcaattatccatgctaatgggagt

       .         .         .         .         .         .         .         .         .         .         .         .
aggctggaggcatctagggcttggctaatcaaaacagcccataatctgaaaattatttat

       .         .         .         .         .         .         .         .         .         .         .         .
agtgctctgttgtatgttttatttcttaaaataataaattatttttataagcatcttccg

       .         .         .         .         .         .         .         .
tgaattttttgaaaggctcacattgtttgcatccttgaag
```

Exon 12 | Start: 155624 | End: 155676 | Length: 52

```
      .       .       .       .       .       .       .       .       .       .       .       .       .
gaaggcagaagggaaggagcagactttgggggaataatgagatttcctatatcactaata

      .       .       .       .       .       .       .       .       .       .       .       .       .
ctgttgatttacccaatgtgcaaacgatccagaatgtgagatggaatgtacttgggactg

      .       .       .       .       .       .       .       .       .       .       .       .       .
atgcggctgttagaagttagtacttaaacattccatttcaaatattctcattaagggtaa

      .       .       .       .       .       .       .       .       .       .       .       .       .
tagcagaaaattgcagcagagattaagcagttttttaagtggtaatcccctctgtagaact

      .       .       .       .       .       .       .       .       .       .       .       .       .
gttgatttgtttagttaatgctaatttatttaatatacttctacttttttgttgatttta

     |1181       |1191       |1201       |1211       |1221               .
GTCTGTTGCCACAGTTATTGGGAGTTGCCCCAGAGAAGGCCATAAAACTTACAgtaagtc
  L    L    P    Q    L    L    G    V    A    P    E    K    A    I    K    L    T
                             |401


       .       .       .       .       .       .       .       .       .       .       .       .       .
ttttgagttggtgcttcttattaagggattttgtacatactcaagaatctagcaggtatt

       .       .       .       .       .       .       .       .       .       .       .       .       .
cttataggaaacagcaggtttgttttctcagaggtgctagctaatttgaaagcaggggaa

       .       .       .       .       .       .       .       .       .       .       .       .       .
ctcaccacacacattttttcattattctccatttagcagtggacatccaaaaatgtgata

       .       .       .       .       .       .       .       .       .       .       .       .       .
ataaacttgaggacttttggtggttgctgccatcattgttgtcatcacagcagtagcagc

       .       .       .       .       .       .       .       .       .       .       .       .       .
taaattcccttcagtatctaccatattaggcacatgacgtatattacgtttta
```

Exon 13 | Start: 157023 | End: 157103 | Length: 80

```
    .     .     .     .     .     .     .     .     .     .     .     .
tattgtcagtgtgtctcccttcttaagctattctaattgcagaacatattttttggctttc

    .     .     .     .     .     .     .     .     .     .     .     .
atttatcttttaacttttctcctgaaacatcagtgatgcatatatattttttcattttta

    .     .     .     .     .     .     .     .     .     .     .     .
aaactattatactattaagagtacttctcaaactattttaagatctgttaaattgtgcaa

    .     .     .     .     .     .     .     .     .     .     .     .
tttatgattactccaatagactgatagaaaaaaatagcatatattgacagatgcatattt

    .     .     .     .     .     .     .     .     .     .     .     .
ataagtgtttaatgactttctttatattttttcatcagcttctataaatattttttcttcaa

|1231      |1241      |1251      |1261      |1271      |1281
GTGAACGATTTTGTGAGGGATAAATTTATGCACAAAGATGGTTCGGTCCCACTTGCAGCA
 V   N   D   F   V   R   D   K   F   M   H   K   D   G   S   V   P   L   A   A
|411                                      |421

|1291      |1301      |1311.      .      .      .      .      .      .
GAAATTCTTGCTGGAGGCTGCgtaagtaccttttgaagctctcttcattgaaaagacttg
 E   I   L   A   G   G   C
|431

    .     .     .     .     .     .     .     .     .     .     .     .
tttcacatatatatcactaccatggtcaacaggtgtggactaaggcttctgtttaaccac

    .     .     .     .     .     .     .     .     .     .     .     .
agatcctgcacaagggcagagtctactagggcacctcggcttttcctagacaggcgaacc

    .     .     .     .     .     .     .     .     .     .     .     .
attccagaggtggaagggtaaatgtttctgaccttactgcctgttaagtcatgcctgtta

    .     .     .     .     .     .     .     .     .     .     .     .
aattcgtcattgcttatggtttgttctgcaatggaagtcatttgtggcagaagtgtttgg

    .     .     .     .     .     .
cctttgaaaaatctttgctaa
```

Exon 14 | Start: 180452 | End: 180592 | Length: 140

```
    .       .       .       .       .       .       .       .       .       .       .       .
gttgtttgtgcttcaaggagcatttgtaatttcagtgtgaggacttggggaggtcaacag

    .       .       .       .       .       .       .       .       .       .       .       .
aaatctctggtctttgccctccttcagcctccacattaaggacatagggcttcttcctag

    .       .       .       .       .       .       .       .       .       .       .       .
gcagtaactgtattttgattcatacttgtaatccctaaccgttttgattgatgggacaag

    .       .       .       .       .       .       .       .       .       .       .       .
ggctgaaactacattctcttgaggatagaatatttttatccttgagaataatcattcatc

    .       .       .       .       .       .       .       .       .       .       .       .
tcttcctgacccaccttaccatttctttgctttgatcctaaatctttttgttctttta
```

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

```
         |1381      |1391      |1401      |1411      |1421      |1431
GTGGCAGGAGAAATCACCACTGGTCCTCGAGTCAGTGCTCTGTCTGTCGTGCGGGACCTG
V  A  G  E  I  T  T  G  P  R  V  S  A  L  S  V  V  R  D  L
         |461                           |471
```

```
         |1441      |1451 .       .       .       .       .       .       .
GGGTTTTTTGGGATCTACAAGgtaactttttttttttttagtcatttatttgattactt
G  F  F  G  I  Y  K
         |481
```

```
    .       .       .       .       .       .       .       .       .       .       .       .
tctcatctcctaatgcagaaactattcttcaacatgaaatccatttttttttgcatttct

    .       .       .       .       .       .       .       .       .       .       .       .
acacctggagaagatgttctacccaagctgcagaggcaccttcatgccaattagaaggag

    .       .       .       .       .       .       .       .       .       .       .       .
gtgccccttcctgccatctgccaaaaaactatcctcatcaatacacaaatctaggatgac

    .       .       .       .       .       .       .       .       .       .       .       .
tatgataggaatcgtgccctctagagttgttcagtgcagctctttgcagcaacactggct

    .       .       .       .       .
agaattttatttggatttgtt
```

Exon 15 | Start: 195267 | End: 195405 | Length: 138

```
       .      .      .      .      .      .      .      .      .      .      .      .      .
ttaaaaggatgtcacaggcagagttccaaaaaggttttaattgaagtcttagcattagaa

       .      .      .      .      .      .      .      .      .      .      .      .      .
taaatgagaactgccctcctcccatcacagcacacaacaaaactagtttttgtttttaaaa

       .      .      .      .      .      .      .      .      .      .      .      .      .
acaaagtttagatttattacttgcagaatttgggttattttttttctgttcccctttcaat

       .      .      .      .      .      .      .      .      .      .      .      .      .
gtgtgagtacaaatttggtcttctccaggaatattttgttctgaggtgagttccagagaa

       .      .      .      .      .      .      .      .      .      .      .      .      .
gcttgatctcctcaatgggatatgtgtttcatgtggttttttcttcctttgcaaatgtgca

        |1461       |1471       |1481       |1491       |1501       |1511
GGTGCCAAAGCATGCTTTCTGCGGGACATTCCTTTCTCGGCCATCTACTTTCCGTGCTAT
G   A   K   A   C   F   L   R   D   I   P   F   S   A   I   Y   F   P   C   Y
                 |491                                      |501

        |1521       |1531       |1541       |1551       |1561       |1571
GCTCATGTGAAGGCTTCCTTTGCAAATGAAGATGGGCAGGTTAGCCCAGGAAGCCTGCTC
A   H   V   K   A   S   F   A   N   E   D   G   Q   V   S   P   G   S   L   L
                 |511                                      |521

        |1581       |1591.      .      .      .      .      .      .      .
TTAGCTGGTGCCATAGCTGgtgagtgtcccccatggagttctcttacttccctgaccctt
L   A   G   A   I   A   G
                 |531

       .      .      .      .      .      .      .      .      .      .      .      .      .
gctgcccccccttccctagctgcatgctactacattgaaattttttttgctgatagttcttg

       .      .      .      .      .      .      .      .      .      .      .      .      .
acagggtatgtgtgagtttgctagagattgaagagctactgaaaaaaaagggaaaaaatt

       .      .      .      .      .      .      .      .      .      .      .      .      .
aatcttcattctggcagatgagattattagacaagcttaatttcttaactctagaaaagg

       .      .      .      .      .      .      .      .      .      .      .      .      .
ctcattaaatattggcttattttgtggtattgtggaactccaattcaagttccatatcat

       .      .      .      .
ttcatagtctcacttcaca
```

16

Exon 16 | Start: 205151 | End: 205309 | Length: 158
BE AWARE: Flanking intron is shared with the following exon

.   .   .   .
gaagtagtgttattgataaacaatttcttaaaaatatttaaagatttaggaatagaaaca

.   .   .   .
aaggaaatgaaggctgagtgatttgggcaagggaaggtgtgagtctggtggggaggggtg

.   .   .   .
taggagcagacatcttgcacacaggagaggcatggttgcatttcccatagaggacagcaa

.   .   .   .
aataggcattttattgaatcggattttttaactttctttccacggccagcagttcaaagca

.   .   .   .
cagttatttttatatagtgagaatgtgaccagactgagatggtgttgtgtctctcctgca

          |1601 |1611 |1621 |1631 |1641 |1651
GTATGCCTGCAGCATCTTTAGTGACCCCTGCTGATGTTATCAAGACGAGATTACAGGTGG
  M   P   A   A   S   L   V   T   P   A   D   V   I   K   T   R   L   Q   V   A
                                           |541 |551

          |1661 |1671 |1681 |1691 |1701 |1711
CTGCCCGGGCTGGCCAAACCACTTACAGCGGAGTGATAGACTGCTTTAGAAAGATACTGC
  A   R   A   G   Q   T   T   Y   S   G   V   I   D   C   F   R   K   I   L   R
                                           |561 |571

          |1721 |1731 |1741   .   .   .   .
GTGAAGAAGGACCAAAAGCTCTGTGGAAGGGAGCTGGTGgtatggaaataatgtgttctt
  E   E   G   P   K   A   L   W   K   G   A   G   A
                                           |581

     .   .   .   .   .
aactaactctttggtatcaggtaaa

17

```
Exon 17 | Start: 205403 | End: 205493 | Length: 90
BE AWARE: Flanking intron is shared with the previous exon

.    .    .    .    .    .    .    .    .    .|1751      |1761
tttttaaaatatctaattatatctgtgatttctccattttttttaaaCTCGTGTATTTCGA
                                                 R  V  F  R

     |1771      |1781      |1791      |1801      |1811      |1821
TCCTCACCCCAGTTTGGTGTAACTTTGCTGACTTACGAATTGCTACAGCGATGGTTCTAC
S  S  P  Q  F  G  V  T  L  L  T  Y  E  L  L  Q  R  W  F  Y
     |591                             |601

     |1831      |1841.    .    .    .    .    .    .    .    .
ATTGATTTTGGAGGAGTgtaagtatcatgctaaatctgctgctaaattttggctgctgct
I  D  F  G  G  V
       |611

   .    .    .    .    .    .    .    .    .    .    .    .    .
aatgctctgttgtcgtagggaaaggtacctcagtctagtctctataataaaatagaagag

   .    .    .    .    .    .    .    .    .    .    .    .    .
atttagggaaatgttgaaattgtgttaacaaggtcatttccaaggggaacatacaactga

   .    .    .    .    .    .    .    .    .    .    .    .    .
tgagaatgtatcaactcctttacattaaatatttgaacaggttttgaatgttattttat

   .    .    .    .    .    .    .    .    .    .    .    .    .
caagttaaaacaaacaaaaaatacagcttcttactctgttttctcttcttttagaaaacc

   .    .    .    .
catgggatcagagccag
```

Exon 18 | Start: 205771 | End: 206928 | Length: 1157
BE AWARE: Flanking intron is shared with the previous exon

```
.    .    .    .    .    .    .    .    .    .    .    .
atttccaaggggaacatacaactgatgagaatgtatcaactcctttacattaaatatttg


.    .    .    .    .    .    .    .    .    .    .    .
aacaggttttgaatgttattttttatcaagttaaaacaaacaaaaaatacagcttcttact


.    .    .    .            |1851     |1861     |1871     |1881
ctgttttctcttcttttaAAAACCCATGGGATCAGAGCCAGTTCCTAAATCCAGGATCAA
                   K  P  M  G  S  E  P  V  P  K  S  R  I  N
                                                     |621


    |1891     |1901     |1911     |1921     |1931     |1941
CCTGCCTGCCCCGAATCCTGATCACGTTGGGGGCTACAAACTGGCAGTTGCTACATTTGC
 L  P  A  P  N  P  D  H  V  G  G  Y  K  L  A  V  A  T  F  A
        |631                              |641


    |1951     |1961     |1971     |1981     |1991     |2001
AGGGATTGAAAACAAATTTGGACTTTACCTACCTCTCTTCAAGCCATCAGTATCTACCTC
 G  I  E  N  K  F  G  L  Y  L  P  L  F  K  P  S  V  S  T  S
        |651                              |661


    |2011     |2021     |*1       |*11      |*21      |*31
AAAGGCTATTGGTGGAGGCCCATAGGAAGATCAGCCCTGGGATAGTGCTGTCTTTTTGTG
 K  A  I  G  G  P  *
        |671


    |*41      |*51      |*61      |*71      |*81      |*91
GGTACTGCAGTAAAGAACATCCCTCCTGGGAATGAAGCAATGCTTCATCCCTTTTACGTC


    |*101     |*111     |*121     |*131     |*141     |*151
CATCTCTTGTTTAAATTCAAGTCCAGGCTTTTTTATCATGTGAAATCATTCATTTTCTGG


    |*161     |*171     |*181     |*191     |*201     |*211
GTGTTTTCTTAACCAGATCATTGTGAAATTATTCATAATTATTATTTGGCCCTCTGCCCA


    |*221     |*231     |*241     |*251     |*261     |*271
GAAACCTTTGTTTGCATCTGAAAATTGATGGGATTTGGTCAACACTAACATGATTTGGGG


    |*281     |*291     |*301     |*311     |*321     |*331
AAAGGAGCAAGTCAGAATAGAAATTAGTACTCCCCTCCTTGAACTAGGATTGTAGTCCCA
```

```
       |*341       |*351       |*361       |*371       |*381       |*391
AAGAGGCTACTGTAAGGCAATCATGGTGCTCAGAGCAGTGTTTCGTGTGTGTTTTAAACT

       |*401       |*411       |*421       |*431       |*441       |*451
GGTAGGAAACTAGGTGCATATTTATAAAAATAAAAAACACTGGGAGAAATGAAAAAATAT

       |*461       |*471       |*481       |*491       |*501       |*511
ATATCAAATATATTCAGCCTGGCTTCAAATTGTAAGCATGCACAAATTCTGTCTCTGGAT

       |*521       |*531       |*541       |*551       |*561       |*571
TATATTATGAAGCTTTTATGTGAAACATGTTTCTTTGTAATGAAAACCACATTGGAGATG

       |*581       |*591       |*601       |*611       |*621       |*631
TTTAGTAATCATATTGTTACTGGTACCAAGACTACTAGGGAAATGCCTTTGTACTTTAGG

       |*641       |*651       |*661       |*671       |*681       |*691
GAAGTACTTTTGGCATTTTACTGTACAGACAGAAAAAAACTGAGATGTAGCCCCTCTCCTG

       |*701       |*711       |*721       |*731       |*741       |*751
GAAGTGCTAATTTTGAAAAACTGCTCATATGATGTACATGTACTGATTACTGCCTATTTT

       |*761       |*771       |*781       |*791       |*801       |*811
AATAAACACTCTTGAAAAATGCATGTTGCCCTGTTGCTGCCTGCCCTATTCTCCTCATCT

       |*821       |*831       |*841       |*851       |*861       |*871
CCCCATCATTGGTACCCACTTGCTTTTAAAATCCACTTTATCTTGAATAATGTAAGACAA

       |*881       |*891       |*901       |*911       |*921       |*931
ATATGTTCTGACATAAGTATTTAATTCATGTTGCCTTGCATAATGGTCAGAGGCGCATGA

       |*941       |*951       |*961       |*971.       .       .       .
ATTTGTGAAGGTGGAAATAAACTATTTGTAAAGTGAttgagttgtttggtcttgtgcatg

   .       .       .       .       .       .       .       .       .       .       .       .
ttgcatggtgagtggatacagtaattgtcattattggcctacatgtttttgttttgagggg

   .       .       .       .       .       .       .       .       .       .       .       .
aattttattcatattggcatggatatatcctcagtatctttcaaggtaatgtgttccctc

   .       .       .       .       .       .       .       .       .       .       .       .
attttcatggttcaaagtgagtacaagaaactgtatttaaccatagataagcaaagaact

   .       .       .       .       .       .       .       .       .       .       .       .
agcaaactgacaccttagttctagtcattccagcactttcggcagtttattgtgatgatg

   .       .       .       .       .       .       .       .
```

aaggtcacatagttttagtagaacttagccatgaaa

```
GBK Parser: Version: 1.1, Version Date: 11/02/2015
Reader: Version: 1, Version Date: 11/02/2015
Writer: Version: 1, Version Date: 11/02/2015
Control: Version: 1, Version Date: 11/02/2015
```