Gene: LEPRE1 - Sequence: NG_008123.1
Transcript: NM_001146289.1 - Protein: NP_077002.2
Date : February 11, 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: 5578 | Length: 577

```
      .        .        .        .        .        .        .        .        .        .        .        .
    ggcctgcagctggcggcgctccttgcctttcaaggaccccctcggtccgccccggcgcgg

      .        .        .        .        .        .        .        .        .        .        .        .
    cggcgtcctccatgacagcgccttatcctccccactccctgggctgtgcgagtaggaaga

      .        .        .        .        .        .        .        .        .        .        .        .
    gcctgcgcataaaggcgcgtgggcggagcttccgtctttcttgtctactgggcgtcagtt

      .        .        .        .        .        .        .        .        .        .        .        .
    cgactgagcaaggcctgagctcggaggcggggctccggctgacgcgccgggattcgctga

      .        .        .        .        .        .        .        .        .        .        .        .
    gggccggtggggggatccgggctgactgaaaggaaaagaggcggtgcaagcctcgtgggc

        |-109     |-99      |-89      |-79      |-69      |-59
    ATGCGCCGCCCGGCTTGGAAGGTGGGGCTTCGCCCGGGGGCGGGCCTTCGCCGGGGGTAG

        |-49      |-39      |-29      |-19      |-9       |1
    GACTCCGGCCTTGGTGGCGGGTGGCTGGCGGTTCCGTTAGGTCTGAGGGAGCGATGGCGG
                                                            M   A   V
                                                            |1

        |11      |21      |31      |41      |51      |61
    TACGCGCGTTGAAGCTGCTGACCACACTGCTGGCTGTCGTGGCCGCTGCCTCCCAAGCCG
      R   A   L   K   L   L   T   T   L   L   A   V   V   A   A   A   S   Q   A   E
                          |11                                      |21

        |71      |81      |91      |101     |111     |121
    AGGTCGAGTCCGAGGCAGGATGGGGCATGGTGACGCCTGATCTGCTCTTCGCCGAGGGGA
      V   E   S   E   A   G   W   G   M   V   T   P   D   L   L   F   A   E   G   T
```

1

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                              |31                             |41


      |131         |141        |151         |161         |171         |181
CCGCAGCCTACGCGCGCGGGGACTGGCCCGGGGTGGTCCTGAGCATGGAACGGGCGCTGC
  A   A   Y   A   R   G   D   W   P   G   V   V   L   S   M   E   R   A   L   R
                              |51                              |61


      |191         |201        |211         |221         |231         |241
GCTCCCGGGCAGCCCTCCGCGCCCTTCGCCTGCGCTGCCGCACCCAGTGTGCCGCCGACT
  S   R   A   A   L   R   A   L   R   L   R   C   R   T   Q   C   A   A   D   F
                              |71                              |81


      |251         |261        |271         |281         |291         |301
TCCCGTGGGAGCTGGACCCCGACTGGTCCCCCAGCCCGGCCCAGGCCTCGGGCGCCGCCG
  P   W   E   L   D   P   D   W   S   P   S   P   A   Q   A   S   G   A   A   A
                              |91                             |101


      |311         |321        |331         |341         |351         |361
CCCTGCGCGACCTGAGCTTCTTCGGGGGGCCTTCTGCGTCGCGCTGCCTGCCTGCGCCGCT
  L   R   D   L   S   F   F   G   G   L   L   R   R   A   A   C   L   R   R   C
                              |111                            |121


      |371         |381        |391         |401         |411         |421
GCCTCGGGCCGCCGGCCGCCCACTCGCTCAGCGAAGAGATGGAGCTGGAGTTCCGCAAGC
  L   G   P   P   A   A   H   S   L   S   E   E   M   E   L   E   F   R   K   R
                              |131                            |141


      |431         |441        |451         |461          .    .    .    .
GGAGCCCCTACAACTACCTGCAGGTCGCCTACTTCAAGgtgcagacctgcctggaaccag
  S   P   Y   N   Y   L   Q   V   A   Y   F   K
                              |151


      .    .    .    .    .    .    .    .    .    .    .    .
gcggccggggtccttctggggagaggagtgttgcaggggacctgaggagcttgggggatc


      .    .    .    .    .    .    .    .    .    .    .    .
ggggaagtgtccgcagggaggggaaagtggcctcctggctggggagctctcctcggagcc


      .    .    .    .    .    .    .    .    .    .    .    .
ggggagagctgctccctggcaggagaccttcctcgcccagttcgcatgggcagatgctaa


      .    .    .    .    .    .    .    .    .    .    .    .
ccccaaaggtccagcctggggttagggcacaggccaagcaaaactcatggccattttgtt


      .    .    .    .    .    .    .    .
ccctgggaaatctcctggaaggaattaaagcggcagtt
```

2

Exon 2 | Start: 9610 | End: 9762 | Length: 152


```
         .         .         .         .         .         .         .
agcactccccatacaatatgacctttgtttttaaaatggaacattgctacttcctgtaatc

         .         .         .         .         .         .         .
tggggaacccctaaatctgacttgggaaagagctacaaatctgcccagggcactatgctc

         .         .         .         .         .         .         .
ctaatctgtcgtgggtagttcctgcaataggtgtgcttcctggggctggcaggggctggg

         .         .         .         .         .         .         .
cacgctgagtggagggctcagggaggcagggatttcctgtttatgtggactgctcatgtg

         .         .         .         .         .         .         .
gacacaaacgttcagagattggatgtgagcattatccaccttctcatgcttcattcttag
    |471       |481       |491       |501       |511       |521
ATCAACAAGTTGGAGAAAGCTGTTGCTGCAGCACACACCTTCTTCGTGGGCAATCCTGAG
I   N   K   L   E   K   A   V   A   A   A   H   T   F   F   V   G   N   P   E
              |161                                   |171

    |531       |541       |551       |561       |571       |581
CACATGGAAATGCAGCAGAACCTAGACTATTACCAAACCATGTCTGGAGTGAAGGAGGCC
H   M   E   M   Q   Q   N   L   D   Y   Y   Q   T   M   S   G   V   K   E   A
              |181                                   |191

    |591       |601       |611          .         .         .         .         .
GACTTCAAGGATCTTGAGACTCAACCCCATATGgtgaaaaaaactttatccccttctttc
D   F   K   D   L   E   T   Q   P   H   M
              |201

         .         .         .         .         .         .         .
tttctttctttttaaatttattttagagacagagtcttgctctgtcacccaggctggagt

         .         .         .         .         .         .         .
gcagtggcttgatcatagctcactgtaacctcaaattcccggactcaagagaccctctag

         .         .         .         .         .         .         .
tctcggcctcctgagtagttgggactacaggcatgcattcttttgttttttttttaaatga
```

```
       .       .       .       .       .       .       .       .       .       .       .       .
cattactaaggttgtttctaattacattacagaagtaatgaatgttcattgtataacat

       .       .       .       .       .       .       .
tgtagaaatgtaggtaagtataaaataaaaagt



Exon 3 | Start: 12695 | End: 12884 | Length: 189
BE AWARE: This section overlaps with the following exon



       .       .       .       .       .       .       .       .       .       .       .       .
acccaggaggtggaggttgcagtgagctgagattgtgccactgcagtccagcctgggcaa

       .       .       .       .       .       .       .       .       .       .       .       .
cagagtgagactctgtctcaaaaaaagaaaaaaagagctaaatgtttttaaatttccaga

       .       .       .       .       .       .       .       .       .       .       .       .
gctaaatattttgtaaagaccatttacaaaaggccttcattttatagtggtacccaggtc

       .       .       .       .       .       .       .       .       .       .       .       .
acccctttccatccataacctgaggaacaggaaattaggacccctgtgaaggtggctgag

       .       .       .       .       .       .       .       .       .       .       .       .
ggcaaggagagagggttcctcctctgtggcctgcatttgagtgctccttcttcccagtag

   |621       |631       |641       |651       |661       |671
CAAGAATTTCGACTGGGAGTGCGACTCTACTCAGAGGAACAGCCACAGGAAGCTGTGCCC
Q   E   F   R   L   G   V   R   L   Y   S   E   E   Q   P   Q   E   A   V   P
            |211                               |221

   |681       |691       |701       |711       |721       |731
CACCTAGAGGCGGCGCTGCAAGAATACTTTGTGGCCTATGAGGAGTGCCGTGCCCTCTGC
H   L   E   A   A   L   Q   E   Y   F   V   A   Y   E   E   C   R   A   L   C
            |231                               |241

   |741       |751       |761       |771       |781       |791
GAAGGGCCCTATGACTACGATGGCTACAACTACCTTGAGTACAACGCTGACCTCTTCCAG
E   G   P   Y   D   Y   D   G   Y   N   Y   L   E   Y   N   A   D   L   F   Q
            |251                               |261

   |801       .       .       .       .       .       .       .       .       .       .
GCCATCACAGgtgcgtgcagttcagagccagaccttcagccaggcctcctgggactctaa
A   I   T   D
```

4

```
        .         .         .         .         .         .         .         .         .         .         .
ggtcaccatctgataatataaatggggactcttcaccctcattcctcaatttattaaatc

        .         .         .         .         .         .         .         .         .         .         .
tgagaagctgatgaaaaattgcttccatttgaatttgttcatcttaaccagaatttgagt

        .         .         .         .         .         .         .         .         .         .         .
tctaaagagtgacctcatagttattccttctgtttgattcctttcagatcattacatcca

        .         .         .         .         .         .         .         .         .         .         .
ggtcctcaactgtaagcagaactgtgtcacggagcttgcttcccacccaagtcgagagaa

        .         .
gccctttgaa
```

Exon 4 | Start: 13102 | End: 13233 | Length: 131

```
        .         .         .         .         .         .         .         .         .         .         .
ccgtgccctctgcgaagggccctatgactacgatggctacaactaccttgagtacaacgc

        .         .         .         .         .         .         .         .         .         .         .
tgacctcttccaggccatcacaggtgcgtgcagttcagagccagaccttcagccaggcct

        .         .         .         .         .         .         .         .         .         .         .
cctgggactctaaggtcaccatctgataatataaatggggactcttcaccctcattcctc

        .         .         .         .         .         .         .         .         .         .         .
aatttattaaatctgagaagctgatgaaaaattgcttccatttgaatttgttcatcttaa

        .         .         .         .         .         .         .         .         .         .         .
ccagaatttgagttctaaagagtgacctcatagttattccttctgtttgattcctttcag
```

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   |811       |821       |831       |841       |851       |861
ATCATTACATCCAGGTCCTCAACTGTAAGCAGAACTGTGTCACGGAGCTTGCTTCCCACC
  H  Y  I  Q  V  L  N  C  K  Q  N  C  V  T  E  L  A  S  H  P
  |271                              |281

   |871       |881       |891       |901       |911       |921
CAAGTCGAGAGAAGCCCTTTGAAGACTTCCTCCCATCGCATTATAATTATCTGCAGTTTG
  S  R  E  K  P  F  E  D  F  L  P  S  H  Y  N  Y  L  Q  F  A
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 |291                          |301

 |931         .    .    .    .    .    .    .    .    .
CCTACTATAACAgtaaggcctactttccttcctctttctctgctggctaactaagaagct
  Y  Y  N  I
 |311


    .    .    .    .    .    .    .    .    .    .    .    .
aaaggcaaggtgggcagggattacagccacttacttcctcaaggtgtttggcttatttca

    .    .    .    .    .    .    .    .    .    .    .    .
gtagctatgggaggcaccatgccaagtgatccctgggtagtttgttataaacaactggcc

    .    .    .    .    .    .    .    .    .    .    .    .
taggaagccaataccagcaacccaaaaagctgggggagggagacttaggacctcatctct

    .    .    .    .    .    .    .    .    .    .    .    .
tgtcccttctataacttgtaatctatttttgcttttgaattaaagttaatagcaaaataa

    .    .    .
gggtatgccaca



Exon 5 | Start: 14163 | End: 14302 | Length: 139



    .    .    .    .    .    .    .    .    .    .    .    .
attatttgtgaatcttaaaagatgtgggcatgcagagaattctgattcttttctgtttca

    .    .    .    .    .    .    .    .    .    .    .    .
ttgttaggcagccctgaggacattgaccacctcaccttaaaattaatcacacattctatg

    .    .    .    .    .    .    .    .    .    .    .    .
tgtattacttaactcctgcccctgaaatcaggccatcatgttaagtagcaggcaccagct

    .    .    .    .    .    .    .    .    .    .    .    .
tgtcatgctgccattgcctcaagctttgtggagactgaacactaagtggtccctggtgct

    .    .    .    .    .    .    .    .    .    .    .    .
aggattttatcctttccttttgactctttcctctcagccattcttctttccactttgcag

 |941      |951      |961      |971      |981      |991
TTGGGAATTATACACAGGCTGTTGAATGTGCCAAGACCTATCTTCTCTTCTTCCCCAATG
  G  N  Y  T  Q  A  V  E  C  A  K  T  Y  L  L  F  F  P  N  D
```

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                          |321                           |331

|1001      |1011      |1021      |1031      |1041      |1051
ACGAGGTGATGAACCAAAATTTGGCCTATTATGCAGCTATGCTTGGAGAAGAACACACCA
  E   V   M   N   Q   N   L   A   Y   Y   A   A   M   L   G   E   E   H   T   R
                          |341                           |351

|1061      |1071        .       .       .       .       .       .       .       .
GATCCATCGGCCCCCGTGAGgtgagagacttccttctgttatgacagctgccagctgaac
  S   I   G   P   R   E


        .       .       .       .       .       .       .       .       .       .
tcagacctgagggcggaagagtggggtagcagaggggagtaggcgctgtgcgtgcagggc


        .       .       .       .       .       .       .       .       .       .
aggggccagatgtcagtgttggggccagatgtgagttcagtcactcggcttgttattcag


        .       .       .       .       .       .       .       .       .       .
aggagaagggagcacagggagggagtgtggggagtacacaggagcctcaattagcgttat


        .       .       .       .       .       .       .       .       .       .
ctgggcccagaagtctattctctgagtcccgcagaactgcgcggtgagcatattctttcc


        .       .       .       .
cctcttggcacccctaactt



Exon 6 | Start: 16448 | End: 16537 | Length: 89
BE AWARE: This section overlaps with the following exon



        .       .       .       .       .       .       .       .       .       .
gaatcatcagattatctgtcctagagactaatgggggttgggatggggggaggagcagggc


        .       .       .       .       .       .       .       .       .       .
tttttcccttaaggaaagcctggttattccagtacctcagaggtactgttgcttgtgcca


        .       .       .       .       .       .       .       .       .       .
ggcagaggacacagaaattagacttttgtctcaaactggggaacagacagagagcattgg


        .       .       .       .       .       .       .       .       .       .
tagggagaggaggcctcaggtcacatgggagcatcagtgtggggtgccagggaggggaac
```

7

```
         .         .         .         .         .         .         .         .         .
      tcccagagagttaaaagacagggctgagttctgggggatttgtttgcttttttaccctcag

      |1081      |1091      |1101      |1111      |1121      |1131
      AGTGCCAAGGAGTACCGACAGCGAAGCCTACTGGAAAAAGAACTGCTTTTCTTCGCTTAT
      S  A  K  E  Y  R  Q  R  S  L  L  E  K  E  L  L  F  F  A  Y
      |361                                       |371

      |1141      |1151      |1161      .         .         .         .         .         .
      GATGTTTTTGGAATTCCCTTTGTGGATCCGgtgagctagggtacaggagccggaagggag
      D  V  F  G  I  P  F  V  D  P
      |381


         .         .         .         .         .         .         .         .         .
      cggggaaagagtgagcaggagagatgaatggggaggaggggaacactgtgcgattctgag


         .         .         .         .         .         .         .         .         .
      agaaaacttgctggaggctgagcctagcctgggatctgtgcaaggcagggatgagagaca


         .         .         .         .         .         .         .         .         .
      gatgaaaggggaacactgggcagctagaagggacttagatgtggaaacctcccattttgt


         .         .         .         .         .         .         .         .         .
      ctcctgaaaggaagagggtgataagctggattactcctgtgggccttattttatgcattg


         .         .         .         .         .         .
      agacacctggaagattaagtagatcatctt



      Exon 7 | Start: 16868 | End: 16920 | Length: 52
      BE AWARE: This section overlaps with the following exon



         .         .         .         .         .         .         .         .         .
      cggggaaagagtgagcaggagagatgaatggggaggaggggaacactgtgcgattctgag

         .         .         .         .         .         .         .         .         .
      agaaaacttgctggaggctgagcctagcctgggatctgtgcaaggcagggatgagagaca

         .         .         .         .         .         .         .         .         .
      gatgaaaggggaacactgggcagctagaagggacttagatgtggaaacctcccattttgt

         .         .         .         .         .         .         .         .         .
      ctcctgaaaggaagagggtgataagctggattactcctgtgggccttattttatgcattg
```

8

```
      .         .         .         .         .         .         .         .         .         .         .         .
agacacctggaagattaagtagatcatcttacctttttcatttcttcctgacctacttag

|1171     |1181     |1191     |1201     |1211     |1221     .
GATTCATGGACTCCAGAAGAAGTGATTCCCAAGAGATTGCAAGAGAAACAGAAgtgagga
 D  S  W  T  P  E  E  V  I  P  K  R  L  Q  E  K  Q  K
|391                             |401

      .         .         .         .         .         .         .         .         .         .         .         .
ccttgaagaaactgcatggttggatcagtctgatgaagcacttgaggcttcctgagccca

      .         .         .         .         .         .         .         .         .         .         .         .
ggcagatgtgaactcctggcaaggggtgggcaggtccagtttgggaagtcggggtggagc

      .         .         .         .         .         .         .         .         .         .         .         .
ccagggctggccctggaatgcagtcctcagagcggctgtgctcataggtcagaacgggaa

      .         .         .         .         .         .         .         .         .         .         .         .
acagccgtacgcatctcccaggagattgggaaccttatgaaggaaatcgagacccttgtg

      .         .         .         .         .         .         .         .         .         .         .         .
gaagagaagaccaaggagtcactggatgtgagcagactgacccgggaaggtga


Exon 8 | Start: 17095 | End: 17216 | Length: 121


      .         .         .         .         .         .         .         .         .         .         .         .
attttatgcattgagacacctggaagattaagtagatcatcttacctttttcatttcttc

      .         .         .         .         .         .         .         .         .         .         .         .
ctgacctacttaggattcatggactccagaagaagtgattcccaagagattgcaagagaa

      .         .         .         .         .         .         .         .         .         .         .         .
acagaagtgaggaccttgaagaaactgcatggttggatcagtctgatgaagcacttgagg

      .         .         .         .         .         .         .         .         .         .         .         .
cttcctgagcccaggcagatgtgaactcctggcaaggggtgggcaggtccagtttgggaa

      .         .         .         .         .         .         .         .         .         .         .         .
gtcggggtggagcccagggctggccctggaatgcagtcctcagagcggctgtgctcatag

         |1231     |1241     |1251     |1261     |1271     |1281
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9

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GTCAGAACGGGAAACAGCCGTACGCATCTCCCAGGAGATTGGGAACCTTATGAAGGAAAT
 S   E   R   E   T   A   V   R   I   S   Q   E   I   G   N   L   M   K   E   I
        |411                               |421

        |1291       |1301      |1311      |1321      |1331      |1341
CGAGACCCTTGTGGAAGAGAAGACCAAGGAGTCACTGGATGTGAGCAGACTGACCCGGGA
 E   T   L   V   E   E   K   T   K   E   S   L   D   V   S   R   L   T   R   E
        |431                               |441


        .         .         .         .         .         .         .         .         .         .
AGgtgagaggacagaaataggggcatgtctggctgttgtcagggagccaggcaggtcacc
 G


        .         .         .         .         .         .         .         .         .         .
ccacatttgccaggcagcgctccaccccagcattgcagagctcaccatgagccagccacc

        .         .         .         .         .         .         .         .         .         .
cttagggtgcaagttcagtggacatccttcctaactcaccagcgggactttcagctggaa

        .         .         .         .         .         .         .         .         .         .
agagcactgagaatcagcctttggctcagaaatcagactccaggatgtagtggtgcacac

        .         .         .         .         .         .         .         .         .         .
ccgtaatcccagctacttggcaggctgaggcaggaggatcgcttgagcccaggagtttga

        .
at




Exon 9 | Start: 19421 | End: 19548 | Length: 127
BE AWARE: This section overlaps with the following exon



        .         .         .         .         .         .         .         .         .         .
gttcttcctcgttcccgagctcatgttttaggattgtgtttctgatgtttcctcaagagt

        .         .         .         .         .         .         .         .         .         .
gtgtcatggcccaaaagccagcagctatttggtcatggagctgggactgggaatctcatc

        .         .         .         .         .         .         .         .         .         .
tttcagctctatgttctgtcctctggactattctacctttgaaaatgacctagcgggaga

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

```
tttttgctggtgaaaaggaaacagctggaatttctatttgtgacgaggaggcaatatccaa

  .    .    .    .    .    .    .    .    .    .    .    .
tggagagtctttggtctagctgctgctagatttagctagagttttgtcattgctttgcag

     |1351      |1361      |1371      |1381      |1391      |1401
GTGGCCCCCTGCTGTATGAAGGCATCAGTCTCACCATGAACTCCAAACTCCTGAATGGTT
  G   P   L   L   Y   E   G   I   S   L   T   M   N   S   K   L   L   N   G   S
     |451                              |461

     |1411      |1421      |1431      |1441      |1451      |1461
CCCAGCGGGTGGTGATGGACGGCGTAATCTCTGACCACGAGTGTCAGGAGCTGCAGAGAC
  Q   R   V   V   M   D   G   V   I   S   D   H   E   C   Q   E   L   Q   R   L
     |471                              |481

     |1471  .    .    .    .    .    .    .    .    .    .
TGACCAATgtaagggaagcccagtgactgcaccttcccccaagggtccagcatccccccca
  T   N
     |491

     .    .    .    .    .    .    .    .    .    .    .    .
ccaagtgcccccttgggtggtagccttcgccttcctcttcctggccacagttgaccacctc

     .    .    .    .    .    .    .    .    .    .    .    .
ttctcaagccctcagctgccctggctaacatccttgtgttttgggccttgtaggtggc

     .    .    .    .    .    .    .    .    .    .    .    .
agcaacctcaggagatggctaccggggtcagacctcccccacatactcccaatgaaaagtt

     .    .    .    .    .    .    .    .    .    .    .    .
ctatggtgtcactgtcttcaaagccctcaaggtaagatcaacactgggcattctagagtg

     .    .
tggagaaa


Exon 10 | Start: 19716 | End: 19811 | Length: 95


     .    .    .    .    .    .    .    .    .    .    .    .
tgcaggtggcccccctgctgtatgaaggcatcagtctcaccatgaactccaaactcctgaa

     .    .    .    .    .    .    .    .    .    .    .    .
tggttcccagcgggtggtgatggacggcgtaatctctgaccacgagtgtcaggagctgca
```

```
          .         .         .         .         .         .         .         .         .         .
      gagactgaccaatgtaagggaagcccagtgactgcaccttcccccaagggtccagcatcc

          .         .         .         .         .         .         .         .         .         .
      ccccaccaagtgccccttgggtggtagccttcgccttcctcttcctggccacagttgacc

          .         .         .         .         .         .         .         .         .         .
      acctcttctcaagccctcagctgccctggctaacatcaccttgtgttttgggccttgtag

              |1481      |1491      |1501      |1511      |1521      |1531
      GTGGCAGCAACCTCAGGAGATGGCTACCGGGGTCAGACCTCCCCACATACTCCCAATGAA
      V   A   A   T   S   G   D   G   Y   R   G   Q   T   S   P   H   T   P   N   E
                                            |501                               |511

              |1541      |1551      |1561              .         .         .         .
      AAGTTCTATGGTGTCACTGTCTTCAAAGCCCTCAAGgtaagatcaacactgggcattcta
      K   F   Y   G   V   T   V   F   K   A   L   K
                                            |521

          .         .         .         .         .         .         .         .         .         .
      gagtgtggagaaaggggtggggaagggggaagctcaggcttttgaggaagagttggggctg

          .         .         .         .         .         .         .         .         .         .
      gtggcaggaaaggtgaagagggtccacctgccaacattcttgttgccaggaagcgaggat

          .         .         .         .         .         .         .         .         .         .
      gagttatgttgcgtgaggttcacttttgaatcctgttagaccgagtgtaatcaaaacaaa

          .         .         .         .         .         .         .         .         .         .
      gtgagcaggataagactgttcgccaaagctatgagaatgctttcttttagaaaggctgatt

          .         .         .         .         .         .
      ctagagggctgtgcttctgtgcaggatgcacagtgt


      Exon 11 | Start: 21749 | End: 21899 | Length: 150


          .         .         .         .         .         .         .         .         .         .
      acggggtggctggccgggctgaggggctcctcacttcccagtaggggcggccgggcagag

          .         .         .         .         .         .         .         .         .         .
      gcgcccctcacctcccggacgcaaactcccattttttttaaagccaccagatctcgtgaga
```

12

```
        .         .         .         .         .         .         .         .         .         .
        cttattcagtattatgagaacagcacgggaaagatccacccccattattcagtcatctcc

        .         .         .         .         .         .         .         .         .         .
        caccaggtcccttccacaacacatgggaattatgggaactacaagataagatttgggtag

        .         .         .         .         .         .         .         .         .         .
        ggacacagagccaaaccatatcagtcgttgagggcagctgaccatctgtctccttggcag

         |1571      |1581      |1591      |1601      |1611      |1621
        CTGGGGCAAGAAGGCAAAGTTCCTCTGCAGAGTGCCCACCTGTACTACAACGTGACGGAG
        L  G  Q  E  G  K  V  P  L  Q  S  A  H  L  Y  Y  N  V  T  E
                                   |531                           |541

         |1631      |1641      |1651      |1661      |1671      |1681
        AAGGTGCGGCGCATCATGGAGTCCTACTTCCGCCTGGATACGCCCCTCTACTTTTCCTAC
        K  V  R  R  I  M  E  S  Y  F  R  L  D  T  P  L  Y  F  S  Y
                                   |551                           |561

         |1691      |1701      |1711         .         .         .         .
        TCTCATCTGGTGTGCCGCACTGCCATCGAAGgtgggcctcattacccctgcagcacccgc
        S  H  L  V  C  R  T  A  I  E  E
                                   |571

        .         .         .         .         .         .         .         .         .         .
        ccccgcatgctgtacctcagctctgtgctggatgctgaagacacagagagaacaggatgc

        .         .         .         .         .         .         .         .         .         .
        ggtcccttttcttcagttggggaaccaatgtaaatacatgggtggcatcccagtgtgatg

        .         .         .         .         .         .         .         .         .         .
        catgccacagtagcatggaggaagttatagtcaacctacctggggatcaagaaggcttcc

        .         .         .         .         .         .         .         .         .         .
        cagagggaaatggggtgcagccagaaaggggggccacccgtcacttgtcacacaacgcact

        .         .         .         .         .         .         .
        ttaatggggaagctggtgctaaaccattcat


        Exon 12 | Start: 23768 | End: 23885 | Length: 117
        BE AWARE: This section overlaps with the following exon
```

```
        .         .         .         .         .         .         .         .         .         .         .         .
tttgtattttgtaaagtccagctacaaaccagggttgtgccattctgcccaggatctgcc

        .         .         .         .         .         .         .         .         .         .         .         .
cttggttggagcccttcattcctgcttgccacaccctgctcacttctgccaagaactgtc

        .         .         .         .         .         .         .         .         .         .         .         .
ctaggaagcctgcagacttgtcctgacccctaggcttgtggcttagccaaagacaccccc

        .         .         .         .         .         .         .         .         .         .         .         .
ctagttcattgggcattccgtagactcaaacacattttgggaagcacctcccctgccaag

        .         .         .         .         .         .         .         .         .         .         .         .
aagagagctatgccgtctcccgaggtgctcccttgctaacatgtgtgacattggccccag

|1721      |1731      |1741      |1751      |1761      |1771
AGGTCCAGGCAGAGAGGAAGGATGATAGTCATCCAGTCCACGTGGACAACTGCATCCTGA
  V  Q  A  E  R  K  D  D  S  H  P  V  H  V  D  N  C  I  L  N
                         |581                        |591

|1781      |1791      |1801      |1811      |1821      |1831
ATGCCGAGACCCTCGTGTGTGTCAAAGAGCCCCCAGCCTACACCTTCCGCGACTACAGgt
  A  E  T  L  V  C  V  K  E  P  P  A  Y  T  F  R  D  Y  S
                         |601                        |611

        .         .         .         .         .         .         .         .         .         .         .         .
gagtgcggggcaggtgcagggtgaggaggtctgtgccctcctcagaggccccacagtgcc

        .         .         .         .         .         .         .         .         .         .         .         .
ctgcactctactaccccaccctagcacacacacactggttggggctagctgttcccagag

        .         .         .         .         .         .         .         .         .         .         .         .
tccaatcctttatccccaaacccgctggataagaagataggcaaagagggaatcatatcg

        .         .         .         .         .         .         .         .         .         .         .         .
tggtgtgacaagaacggtagtgtgagtgggcacaggggactctaaggcgagggtggagag

        .         .         .         .         .         .         .         .         .         .         .         .
tggaaaggtggagtttgtacggcatcagtataggttcttaaaggtttccctcccacac


Exon 13 | Start: 24287 | End: 24362 | Length: 75
BE AWARE: This section overlaps with the following exon
```

14

```
        .         .         .         .         .         .         .         .         .         .         .         .
      tggggctagctgttcccagagtccaatcctttatccccaaacccgctggataagaagata

        .         .         .         .         .         .         .         .         .         .         .         .
      ggcaaagagggaatcatatcgtggtgtgacaagaacggtagtgtgagtgggcacagggga

        .         .         .         .         .         .         .         .         .         .         .         .
      ctctaaggcgagggtggagagtggaaaggtggagtttgtacggcatcagtataggttctt

        .         .         .         .         .         .         .         .         .         .         .         .
      aaaggtttccctcccacacaaagccaccctcctgctgctggttgagagcacctggaggtg

        .         .         .         .         .         .         .         .         .         .         .         .
      aaggctcaggggaaagggaggcagggaagggccatgatgagatgtctctgcctttcccag

        |1841      |1851      |1861      |1871      |1881      |1891
      CGCCATCCTTTACCTAAATGGGGACTTCGATGGCGGAAACTTTTATTTCACTGAACTGGA
       A   I   L   Y   L   N   G   D   F   D   G   G   N   F   Y   F   T   E   L   D
                              |621                                 |631

        |1901      |1911      .         .         .         .         .         .
      TGCCAAGACCGTGACGgtgagtgctcccttgtccttgtccctgggagataaaaagtctgt
       A   K   T   V   T

        .         .         .         .         .         .         .         .         .         .         .         .
      tttctacagctgatgttcccaaagtgcagtggacaaaaataaccaactgggcttcccagt

        .         .         .         .         .         .         .         .         .         .         .         .
      gggcggtacccttcccccatccagaggggctttgagacgtgtccatcactcctctaacca

        .         .         .         .         .         .         .         .         .         .         .         .
      gtcaccctttctctttagttctggtcttagggaagccatactgaagagctgccctcggtc

        .         .         .         .         .         .         .         .         .         .         .         .
      gtgagccctaatgagcccatgtctcttctgagagtggattacagtctttgtcctgtgcaa

        .         .         .         .
      cccccctccctttctg


Exon 14 | Start: 24673 | End: 24832 | Length: 159
BE AWARE: This section overlaps with the following exon
```

15

```
          .         .         .         .         .         .         .         .         .         .         .         .
ccttgtccttgtccctgggagataaaaagtctgttttctacagctgatgttcccaaagtg

          .         .         .         .         .         .         .         .         .         .         .         .
cagtggacaaaaataaccaactgggcttcccagtgggcggtacccttcccccatccagag

          .         .         .         .         .         .         .         .         .         .         .         .
gggctttgagacgtgtccatcactcctctaaccagtcaccctttctctttagttctggtc

          .         .         .         .         .         .         .         .         .         .         .         .
ttagggaagccatactgaagagctgccctcggtcgtgagccctaatgagcccatgtctct

          .         .         .         .         .         .         .         .         .         .         .         .
tctgagagtggattacagtctttgtcctgtgcaaccccctccctttctgtcccccttag

        |1921      |1931      |1941      |1951      |1961      |1971
GCAGAGGTGCAGCCTCAGTGTGGAAGAGCCGTGGGATTCTCTTCAGGCACTGAAAACCCA
A  E  V  Q  P  Q  C  G  R  A  V  G  F  S  S  G  T  E  N  P
        |641                                   |651

        |1981      |1991      |2001      |2011      |2021      |2031
CATGGAGTGAAGGCTGTCACCAGGGGGCAGCGCTGTGCCATCGCCCTGTGGTTCACCCTG
H  G  V  K  A  V  T  R  G  Q  R  C  A  I  A  L  W  F  T  L
        |661                                   |671

        |2041      |2051      |2061      |2071      .         .         .         .
GACCCTCGACACAGCGAGCGGGTGAGAGCAGCTCGAGCGGgtgagagcagctggtgctgt
D  P  R  H  S  E  R  V  R  A  A  R  A  G
        |681                                   |691


          .         .         .         .         .         .         .         .         .         .         .         .
ggtgacccgttcccagagcgcccttggtttgcctttctcttccccaaatcccattgccag

          .         .         .         .         .         .         .         .         .         .         .         .
tggctgagacacgaaaggagcacttgggacaccagctccaacgccctgtcattatggtca

          .         .         .         .         .         .         .         .         .         .         .         .
cattgccttgtcctccctgggcctgctgtgaacgggatccaggtggggaaagaggtcaag

          .         .         .         .         .         .         .         .         .         .         .         .
acagggagcgatgctgagttcttggttccctccttgggccccacttcagctgtcctttttc

          .         .         .         .         .         .         .         .
```

16

cagagagtaggacctgctgggaaggagatgagcctggggc

Exon 15 | Start: 25233 | End: 25750 | Length: 517


```
        .         .         .         .         .         .         .         .         .         .         .         .
cacttgggacaccagctccaacgccctgtcattatggtcacattgccttgtcctccctgg

        .         .         .         .         .         .         .         .         .         .         .         .
gcctgctgtgaacgggatccaggtggggaaagaggtcaagacagggagcgatgctgagtt

        .         .         .         .         .         .         .         .         .         .         .         .
cttggttccctccttgggcccacttcagctgtcctttccagagagtaggacctgctgg

        .         .         .         .         .         .         .         .         .         .         .         .
gaaggagatgagcctggggccattaaggaaccttccttgtcccctgggaagtagcagctg

        .         .         .         .         .         .         .         .         .         .         .         .
agagatagcgagtgtctggagcggaggcctctctgaatgggcaggggtttgtccttgcag

       |2081      |2091        |+11       |+21       |+31
GACAGGGTGCAGGCAGATGACCTGGTGAAGATGCTCTTCAGCCCAGAAGAGATGGACCTC
  Q   G   A   G   R   *


|+41       |+51       |+61       |+71       |+81       |+91
TCCCAGGAGCAGCCCCTGGATGCCCAGCAGGGCCCCCCCCGAACCTGCACAAGAGTCTCTC

|+101      |+111      |+121      |+131      |+141      |+151
TCAGGCAGTGAATCGAAGCCCAAGGATGAGCTATGACAGCGTCCAGGTCAGACGGATGGG

|+161      |+171      |+181      |+191      |+201      |+211
TGACTAGACCCATGGAGAGGAACTCTTCTGCACTCTGAGCTGGCCAGCCCCTCGGGGCTG

|+221      |+231      |+241      |+251      |+261      |+271
CAGAGCAGTGAGCCTACATCTGCCACTCAGCCGAGGGGACCCTGCTCACAGCCTTCTACA

|+281      |+291      |+301      |+311      |+321      |+331
TGGTGCTACTGCTCTTGGAGTGGACATGACCAGACACCGCACCCCCTGGATCTGGCTGAG

|+341      |+351      |+361      |+371      |+381      |+391
GGCTCAGGACACAGGCCCAGCCACCCCCAGGGGCCTCCACAGGCCGCTGCATGACAGCGA
```

17

```
|+401       |+411       |+421       |+431       |+441       |+451
TACAGTACTTAAGTGTCTGTGTAGACAACCAAAGAATAAATGATTCATGGTTTTTTTTAC

|+461       |+471       |+481       |+491       .       .       .       .
TTGGTTTGTTCAGACAATGGAAATTTGCCCATTCTGTCccagaggtctcacttgataaaa

    .       .       .       .       .       .       .       .       .       .       .       .
attgctctaggcaggacccagtggcaggtgtgggacgagaagtcctggcttggcacctgg

    .       .       .       .       .       .       .       .       .       .       .       .
ctcaaccacttgctgtgcagccacaggccagacacttaaccttcagcacctcggggttgt

    .       .       .       .       .       .       .       .       .       .       .       .
catctgtataatggggatcatagtcctccctctgctcaccttctggggcagctgtatggc

    .       .       .       .       .       .       .       .       .       .       .       .
ccagatgcaatatcggatgtgacaacacttttgtaaacggtaaagctctgggtgaatggt

    .       .       .       .       .       .       .       .
tgggattattgttaatcctcttctggcagggagcggcg
```

LRG Parser: Version: 0.2, Version Date: 11/02/2015
Reader: Version: 0.2, Version Date: 11/02/2015
Writer: Version: 0.2, Version Date: 11/02/2015
Control: Version: 0.2, Version Date: 11/02/2015