

Gene: BRCA1 - Sequence: NG\_005905.2  
 Transcript: NM\_007294.3 - Protein: NP\_009225.1  
 Date : February 25, 2015

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

Exon 1 | Start: 92501 | End: 92713 | Length: 212

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. . . . .
tacttatatttaccgaaactggagacctccattagggcggaagagtgggggattgggac

. . . . .
ctcttcttacgactgctttggacaataggtagcgattctgaccttcgtacagcaattact

. . . . .
gtgatgcaataagccgcaactggaagtagaggctagaggcaggcactttatggcaaa

. . . . .
ctcaggtagaattcttctcttccgtctctttccttttacgtcatccgggggcagactgg

. . . . .
gtggccaatccagagccccgagagacgcttggtctctttctgtccctcccatcctctgatt

|-229    |-219    |-209    |-199    |-189    |-179
GTACCTTGATTTTCGTATTCTGAGAGGCTGCTGCTTAGCGGTAGCCCCTTGGTTTCCGTCG

|-169    |-159    |-149    |-139    |-129    |-119
CAACGGAAGCGCGGAATTACAGATAAATTAAGTGCAGCTGCGCGGCGTGAGCTCG

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

|-49     |-39     |-29     .      .      .      .
TCAGGAGCCTTCACCCTCTGCTCTGGGTAAAGgtagtagagtcccgggaaaggacagg

. . . . .
gggccaagtgatgctctgggggtactggcgtgggagagtggatttccgaagctgacagat

. . . . .
gggtattctttgacgggggtagggcggaacctgagaggcgtaaggcgttgtaaccct

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. . . . .  
cctctccttttcaacacaaatcctgtggtccgggaaagacagggactctgtcttgattgg  
. . . . .  
ttctgcactggggcaggaatctagtttagattaactggc

Exon 3 | Start: 102205 | End: 102258 | Length: 53

. . . . .  
aattcgtaacgaactattatcaactaatcttttaaagtctgatgatagtatagagtattga  
. . . . .  
agggatcaatataattctgttttgatatctgaaagctcactgaaggtaaggatcgtattc  
. . . . .  
tctgctgtattctcagttcctgacacagcagacatttaataaatattgaacgaacttgag  
. . . . .  
gccttatgttgactcagtcataacagctcaaagttgaacttattcactaagaatagcttt  
. . . . .  
atttttaataaattattgagcctcatattttctttttctccccctaccctgctag  
|81 |91 |101 |111 |121 |131 .  
TCTGGAGTTGATCAAGGAACCTGTCTCCACAAAGTGTGACCACATATTTTGCAAGtaagt  
L E L I K E P V S T K C D H I F C K  
|31 |41

. . . . .  
ttgaatgtgttatgtggctccattattagcttttgttttgtccttcataaaccaggaaa  
. . . . .  
cacctaactttatagaagctttactttcttcaattaagtgagaaacgaaaaatccaactcc  
. . . . .  
atttcattctttctcagagagtatatagttatcaaaagttggttgtaatcatagttcctg  
. . . . .  
gtaaagttttgacatatattatcttttttttttttttgagacaaagtctcgctctgtcg  
. . . . .  
cccaggctggagtgagtgcatgatcttggctcactgcaacctccgcccccg

Exon 4 | Start: 111451 | End: 111528 | Length: 77

```
. . . . .
tatgaatatatcattaaatatgccatattaacttttattaagttttatgtgatcataaca

. . . . .
gtaagccatatgcatgtaagttcagttttcatagatcattgcttatgtagtttaggtttt

. . . . .
tgcttatgcagcatccaaaacaattaggaaactattgcttgtaattcacctgccattac

. . . . .
tttttaaatggctcttaagggcagttgtgagattatcttttcatggctatttgccttttg

. . . . .
agtattctttctacaaaaggaagtaaattggtctttctttctttataatttatag

      |141      |151      |161      |171      |181      |191
ATTTTGCATGCTGAAACTTCTCAACCAGAAGAAAGGCCTTCACAGTGTCTTTATGTAA
  F  C  M  L  K  L  L  N  Q  K  K  G  P  S  Q  C  P  L  C  K
                |51                                |61

      |201      |211      . . . . .
GAATGATATAACCAAAAGgtatataatttggtaatgatgctagggttgaagcaaccacag
  N  D  I  T  K  R
                |71

. . . . .
taggaaaaagtagaaattatttaataacatagcgttcctataaaaccattcatcagaaaa

. . . . .
atttataaaagagtttttagcacacagtaaattatttccaaagttattttcctgaaagtt

. . . . .
ttatgggacatctgccttatacaggtattagaaacttactgcctttctctaattgcttcta

. . . . .
gtgtaaaaacttgcagacttatgtaaagtagggctgtatcgccgtgccccattgtctgt

. . . . .
taatcttgtttttatatt
```

Exon 5 | Start: 113028 | End: 113116 | Length: 88

```
. . . . .
aaattaaacaaaaaaaaaagtactctagttttctatgcaatgcattatatctgctgtgga
. . . . .
tttagggcagttattatatcagataattttaggcatttggtaggcttaaatgaatgacaaa
. . . . .
aagttactaaatcactgccatcacacggttttatacagatgtcaatgatgtattgattata
. . . . .
gagggtttctactgttgctgcatcttattttatttgtttacatgtcttttcttatttta
. . . . .
gtgtccttaaaagggtgataatcacttgctgagtggtgtttctcaaacaatttaatttcag
      |221      |231      |241      |251      |261      |271
GAGCCTACAAGAAAGTACGAGATTTAGTCAACTTGGTTGAAGAGCTATTGAAAATCATTG
S L Q E S T R F S Q L V E E L L K I I C
                        |81                        |91

      |281      |291      |301 . . . . .
TGCTTTTCAGCTTGACACAGGTTTGGAGTgtaagtgttgaatatccaagaatgacactc
A F Q L D T G L E Y
                        |101

. . . . .
aagtgtgtccatgaaaactcaggaagtttgcaattactttctatgacgtggtgataa
. . . . .
gaccttttagtctaggttaatttttagttctgtatctgtaattctatttttaaaaaattact
. . . . .
cccactgggtctcacaccttattttatcaatcgtaagggtgcacatttttcacatcttaaca
. . . . .
tctctgaaattgggaacattttactattgagggtgtgtcatttgtttaatttggtgtgctt
. . . . .
tctttcttagtgatacagaaaataatagt
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Exon 6 | Start: 113723 | End: 113862 | Length: 139

```

. . . . .
tacattgttggtgtccttagcttttagtgaaatacagtattgataggcaaatttcttagtgt

. . . . .
taaggtagaaaacaaggactctaaataactttgatggctctgtgtatttgttttgtttcc

. . . . .
taggagtaaaatttccagttgattttttaaaatttgatttttaaaaaaatcacaggtaa

. . . . .
ccttaatgcattgtcttaacacaacaagagcatacatagggtttctcttggtttctttg

. . . . .
attataattcacatatttttctctaactgcaaacataatgttttcccttgatttttacag

      |311      |321      |331      |341      |351      |361
ATGCAACAGCTATAATTTTGCAAAAAAGGAAAAATAACTCTCCTGAACATCTAAAAGATG
  A  N  S  Y  N  F  A  K  K  E  N  N  S  P  E  H  L  K  D  E
                        |111                                |121

      |371      |381      |391      |401      |411      |421
AAGTTTCTATCATCCAAAGTATGGGCTACAGAAACCGTGCCAAAAGACTTCTACAGAGTG
  V  S  I  I  Q  S  M  G  Y  R  N  R  A  K  R  L  L  Q  S  E
                        |131                                |141

      |431      |441 . . . . .
AACCCGAAAATCCTTCCTTGgtaaaaccatttgttttcttcttcttcttcttcttctt
  P  E  N  P  S  L

. . . . .
cttttttttttcttttttttttttgagatggagtccttgctctgtggcccaggctagaagc

. . . . .
agtcctcctgccttagcccccttagtagctgggattacaggcacgcgccaccatgccagg

. . . . .
ctaatttttgtatttttagtagagacggggtttcatcatgttggccaggctggtctcgaa

. . . . .
ctcctaacctcaggtgatccaccacctcggctcccaaattgctgggattacaggtgtg

. . . . .
agccactgtgcccggccggt

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Exon 7 | Start: 118104 | End: 118209 | Length: 105

```
. . . . .
actactactattatTTTgtagagactgggtctcactctgttgcttatgctggctctgaac
. . . . .
tcctggcctcaagcagtcctgctccagcctcccaaagtgctgggattataggcatgagct
. . . . .
accgctcccagccccagacattttagtgtgtaaattcctgggcatttttccaggcatca
. . . . .
tacatgttagctgactgatgatggcaatttatTTTgtccatgggtgtcaagtttctcttc
. . . . .
aggaggaaaagcacagaactggccaacaattgcttgactgttctttaccatactgttttag
      |451      |461      |471      |481      |491      |501
CAGGAAACCAGTCTCAGTGTCCAACCTCTCTAACCTTGGAACGTGAGAACTCTGAGGACA
Q E T S L S V Q L S N L G T V R T L R T
      |151                      |161

      |511      |521      |531      |541      . . .
AAGCAGCGGATACAACCTCAAAAGACGTCTGTCTACATTGAATTGGgtaagggtctcagg
K Q R I Q P Q K T S V Y I E L G
      |171                      |181

. . . . .
ttttttaagtatttaataataattgctggattccttatcttatagttttgccaaaaatct
. . . . .
tggtcataatttgtatttTgtgtaggcagctttgggaagtgaattttatgagccctatgg
. . . . .
tgagttataaaaaatgtaaaagacgcagttcccaccttgaagaatcttactttaaaaagg
. . . . .
gagcaaaagaggccaggcatggtggctcacacctgtaatccagcactttgggaggccaa
. . . . .
agtgggtggatcacctgaggtcgggagttcgagaccagcctagcca
```

Exon 8 | Start: 120695 | End: 120740 | Length: 45

. . . . .  
 tagaaacgggggtctcactttgttggccaggctggtcttgaactcctaacctcaaataat  
 . . . . .  
 ccacccatctcggcctcctcaagtgtggtgattacaggtgagagccactgtgcctggcga  
 . . . . .  
 agcccatgcctttaaccacttctctgtattacatactagcttaactagcattgtacctgc  
 . . . . .  
 cacagtagatgctcagtaaataatttctagttgaatatctgtttttcaacaagtacatttt  
 . . . . .  
 ttttaacccttttaattaagaaaacttttattgatttatttttgggggaaatttttag  
 |551 |561 |571 |581 |591 . .  
 GATCTGATTCTTCTGAAGATACCGTTAATAAGGCAACTTATTGCAGgtgagtcaaagaga  
 S D S S E D T V N K A T Y C S  
 |191  
 . . . . .  
 acctttgtctatgaagctggtattttcctatttagttaatattaaggattgatgtttctc  
 . . . . .  
 tctttttaaaaatattttaacttttatttttaggttcagggatgtatgtgcagtttgttat  
 . . . . .  
 ataggtaaacacacgacttgggatttggtgtatagattttttcatcatccgggtactaa  
 . . . . .  
 gcataccccacagttttttgtttgctttctttctgaatttctccctcttcccaccttcct  
 . . . . .  
 ccctcaagtaggctggtgtttctccagactagaatcatggtattgg

Exon 9 | Start: 122062 | End: 122138 | Length: 76

. . . . .  
 gtatttttagtagagatggggtttcaccatgttggccaggctggtcttgaactcatgacc  
 . . . . .  
 tcaagtggtccacccgcctcagcctcccaaagtgtggaattacaggcttgagccaccgt



. . . . .  
 gccagcaaccatttcatttcaactagaagtttctaaaggagagagcagctttcactaac  
 . . . . .  
 taaataagattgggtcagctttctgtaatcgaaagagctaaaatgtttgatcttgggtcatt  
 . . . . .  
 tgacagttctgcatacatgtaactagtgtttcttattaggactctgtcttttcctatag  
 . . . . .  
 |601 |611 |621 |631 |641 |651  
 TGTGGGAGATCAAGAATTGTTACAAATCACCCCTCAAGGAACCAGGGATGAAATCAGTTT  
 V G D Q E L L Q I T P Q G T R D E I S L  
 |201 |211  
 . . . . .  
 |661  
 GGATTCTGCAAAAAAGGtaatggcaaagtttgccaacttaacaggcactgaaaagagag  
 D S A K K A  
 |221  
 . . . . .  
 tgggtagatacagtactgtaattagattattctgaagaccatttgggacctttacaaccc  
 . . . . .  
 acaaaatctcttggcagagtttagagtatcattctctgtcaaatgtcgtgggtatgggtctga  
 . . . . .  
 tagatttaaattggtactagactaatgtacctataataagaccttctgtaactgattgttg  
 . . . . .  
 ccctttcgtttttttttgtttgtttgtttgttttttttgagatggggctctcactctg  
 . . . . .  
 ttgccaggtggagtg

Exon 10 | Start: 123124 | End: 126549 | Length: 3425

. . . . .  
 agttttctgatggccaatctgcttttaattcactcttagacgttagagaaataggtgtgg  
 . . . . .  
 tttctgcatagggaattctgaaattaaaaatttaattggatcctaagtggaaataatct  
 . . . . .  
 aggtaaataggaattaaatgaaagagtatgagctacatcttcagtatacttggtagttaa

```

. . . . .
tgagggttagtttctctaatatagccagttggttgatttccacctccaaggtgtatgaagt

. . . . .
atgtattttttaataatgacaattcagtttttgagtaccttggtatttttgtatattttcag

|671      |681      |691      |701      |711      |721
CTGCTTGTGAATTTTCTGAGACGGATGTAACAAATACTGAACATCATCAACCCAGTAATA
  A C E F S E T D V T N T E H H Q P S N N
                        |231                      |241

|731      |741      |751      |761      |771      |781
ATGATTTGAACACCACTGAGAAGCGTGCAGCTGAGAGGCATCCAGAAAAGTATCAGGGTA
  D L N T T E K R A A E R H P E K Y Q G S
                        |251                      |261

|791      |801      |811      |821      |831      |841
GTTCTGTTTCAAACCTGCATGTGGAGCCATGTGGCACAAATACTCATGCCAGCTCATTAC
  S V S N L H V E P C G T N T H A S S L Q
                        |271                      |281

|851      |861      |871      |881      |891      |901
AGCATGAGAACAGCAGTTTATTACTCACTAAAGACAGAATGAATGTAGAAAAGGCTGAAT
  H E N S S L L L T K D R M N V E K A E F
                        |291                      |301

|911      |921      |931      |941      |951      |961
TCTGTAATAAAAAGCAAACAGCCTGGCTTAGCAAGGAGCCAACATAACAGATGGGCTGGAA
  C N K S K Q P G L A R S Q H N R W A G S
                        |311                      |321

|971      |981      |991      |1001     |1011     |1021
GTAAGGAAACATGTAATGATAGGCGGACTCCCAGCACAGAAAAAAAGGTAGATCTGAATG
  K E T C N D R R T P S T E K K V D L N A
                        |331                      |341

|1031     |1041     |1051     |1061     |1071     |1081
CTGATCCCCTGTGTGAGAGAAAAGAATGGAATAAGCAGAAACTGCCATGCTCAGAGAATC
  D P L C E R K E W N K Q K L P C S E N P
                        |351                      |361

|1091     |1101     |1111     |1121     |1131     |1141
CTAGAGATACTGAAGATGTTCTTGGATAACACTAAATAGCAGCATTGAGAAAAGTTAATG
  R D T E D V P W I T L N S S I Q K V N E
                        |371                      |381

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CTGAAGACCCCAAAGATCTCATGTTAAGTGGAGAAAGGGTTTGCAAACTGAAAGATCTG  
 E D P K D L M L S G E R V L Q T E R S V  
 |751 |761  
  
 |2291 |2301 |2311 |2321 |2331 |2341  
 TAGAGAGTAGCAGTATTTCATTGGTACCTGGTACTGATTATGGCACTCAGGAAAGTATCT  
 E S S S I S L V P G T D Y G T Q E S I S  
 |771 |781  
  
 |2351 |2361 |2371 |2381 |2391 |2401  
 CGTTACTGGAAGTTAGCACTCTAGGGAAGGCAAAAACAGAACCAAATAAATGTGTGAGTC  
 L L E V S T L G K A K T E P N K C V S Q  
 |791 |801  
  
 |2411 |2421 |2431 |2441 |2451 |2461  
 AGTGTGCAGCATTGAAAACCCCAAGGGACTAATTCATGGTTGTTCCAAAGATAATAGAA  
 C A A F E N P K G L I H G C S K D N R N  
 |811 |821  
  
 |2471 |2481 |2491 |2501 |2511 |2521  
 ATGACACAGAAGGCTTTAAGTATCCATTGGGACATGAAGTTAACCACAGTCGGGAAACAA  
 D T E G F K Y P L G H E V N H S R E T S  
 |831 |841  
  
 |2531 |2541 |2551 |2561 |2571 |2581  
 GCATAGAAATGGAAGAAAGTGAAGTCTGATGCTCAGTATTTGCAGAATACATTCAAGGTTT  
 I E M E E S E L D A Q Y L Q N T F K V S  
 |851 |861  
  
 |2591 |2601 |2611 |2621 |2631 |2641  
 CAAAGCGCCAGTCATTGCTCCGTTTCAAATCCAGGAAATGCAGAAGAGGAATGTGCAA  
 K R Q S F A P F S N P G N A E E E C A T  
 |871 |881  
  
 |2651 |2661 |2671 |2681 |2691 |2701  
 CATTCTCTGCCCCTCTGGGTCCTTAAAGAAACAAAGTCCAAAAGTCACTTTTGAATGTG  
 F S A H S G S L K K Q S P K V T F E C E  
 |891 |901  
  
 |2711 |2721 |2731 |2741 |2751 |2761  
 AACAAAAGGAAGAAAATCAAGGAAAGAATGAGTCTAATATCAAGCCTGTACAGACAGTTA  
 Q K E E N Q G K N E S N I K P V Q T V N  
 |911 |921  
  
 |2771 |2781 |2791 |2801 |2811 |2821  
 ATATCACTGCAGGCTTTCCTGTGGTTGGTCAGAAAGATAAGCCAGTTGATAATGCCAAAT

I T A G F P V V G Q K D K P V D N A K C  
 |931 |941  
 |2831 |2841 |2851 |2861 |2871 |2881  
 GTAGTATCAAAGGAGGCTCTAGGTTTGTCTATCATCTCAGTTCAGAGGCAACGAAACTG  
 S I K G G S R F C L S S Q F R G N E T G  
 |951 |961  
 |2891 |2901 |2911 |2921 |2931 |2941  
 GACTCATTACTCCAAATAAACATGGACTTTTACAAAACCCATATCGTATACCACCACTTT  
 L I T P N K H G L L Q N P Y R I P P L F  
 |971 |981  
 |2951 |2961 |2971 |2981 |2991 |3001  
 TTCCCATCAAGTCATTGTGTTAAACTAAATGTAAGAAAAATCTGCTAGAGGAAAACTTG  
 P I K S F V K T K C K K N L L E E N F E  
 |991 |1001  
 |3011 |3021 |3031 |3041 |3051 |3061  
 AGGAACATTCAATGTCACCTGAAAGAGAAATGGGAAATGAGAACATTCCAAGTACAGTGA  
 E H S M S P E R E M G N E N I P S T V S  
 |1011 |1021  
 |3071 |3081 |3091 |3101 |3111 |3121  
 GCACAATTAGCCGTAATAACATTAGAGAAAATGTTTTTAAAGAAGCCAGCTCAAGCAATA  
 T I S R N N I R E N V F K E A S S S N I  
 |1031 |1041  
 |3131 |3141 |3151 |3161 |3171 |3181  
 TTAATGAAGTAGGTTCCAGTACTAATGAAGTGGGCTCCAGTATTAATGAAATAGGTTCCA  
 N E V G S S T N E V G S S I N E I G S S  
 |1051 |1061  
 |3191 |3201 |3211 |3221 |3231 |3241  
 GTGATGAAAAACATTCAAGCAGAACTAGGTAGAAAACAGAGGGCCAAAATTGAATGCTATGC  
 D E N I Q A E L G R N R G P K L N A M L  
 |1071 |1081  
 |3251 |3261 |3271 |3281 |3291 |3301  
 TTAGATTAGGGGTTTTGCAACCTGAGGTCTATAAACAAAGTCTTCCTGGAAGTAATTGTA  
 R L G V L Q P E V Y K Q S L P G S N C K  
 |1091 |1101  
 |3311 |3321 |3331 |3341 |3351 |3361  
 AGCATCCTGAAATAAAAAAGCAAGAATATGAAGAAGTAGTTCAGACTGTTAATACAGATT  
 H P E I K K Q E Y E E V V Q T V N T D F

		1111			1121
3371	3381	3391	3401	3411	3421
TCTCTCCATATCTGATTTCAGATAACTTAGAACAGCCTATGGGAAGTAGTCATGCATCTC					
S	P	Y	L	I	S
		D	N	L	E
			Q	P	M
				G	S
				S	S
				H	A
				S	Q
		1131			1141
3431	3441	3451	3461	3471	3481
AGGTTTGTCTGAGACACCTGATGACCTGTTAGATGATGGTGAAATAAAGGAAGATACTA					
V	C	S	E	T	P
		D	D	L	L
			D	D	G
			E	I	K
				E	D
				T	S
		1151			1161
3491	3501	3511	3521	3531	3541
GTTTTGCTGAAAATGACATTAAGGAAAGTTCTGCTGTTTTTAGCAAAAGCGTCCAGAAAG					
F	A	E	N	D	I
		K	E	S	S
		A	V	F	S
			K	S	V
			Q	K	G
		1171			1181
3551	3561	3571	3581	3591	3601
GAGAGCTTAGCAGGAGTCCTAGCCCTTTCACCCATACACATTTGGCTCAGGGTTACCGAA					
E	L	S	R	S	P
		S	P	F	T
		H	T	H	L
			A	Q	G
				Y	R
				R	R
		1191			1201
3611	3621	3631	3641	3651	3661
GAGGGGCCAAGAAATTAGAGTCCTCAGAAGAGAACTTATCTAGTGAGGATGAAGAGCTTC					
G	A	K	K	L	E
		S	S	E	E
		N	L	S	S
			E	D	E
			E	E	L
				P	
		1211			1221
3671	3681	3691	3701	3711	3721
CCTGCTTCCAACACTTGTTATTTGGTAAAGTAAACAATATACCTTCTCAGTCTACTAGGC					
C	F	Q	H	L	L
		F	G	K	V
			N	N	I
			P	S	Q
				S	T
				R	H
		1231			1241
3731	3741	3751	3761	3771	3781
ATAGCACCGTTGCTACCGAGTGTCTGTCTAAGAACACAGAGGAGAATTTATTATCATTGA					
S	T	V	A	T	E
		C	L	S	K
			N	T	E
			E	N	L
				L	S
				L	K
		1251			1261
3791	3801	3811	3821	3831	3841
AGAATAGCTTAAATGACTGCAGTAACCAGGTAATATTGGCAAAGGCATCTCAGGAACATC					
N	S	L	N	D	C
		S	N	Q	V
			I	L	A
			K	A	S
				Q	E
				H	H
		1271			1281
3851	3861	3871	3881	3891	3901
ACCTTAGTGAGGAAACAAAATGTTCTGCTAGCTTGTTTTCTTCACAGTGCAGTGAATTGG					
L	S	E	E	T	K
		C	S	A	S
			L	F	S
			S	S	Q
			C	S	E
				L	E
		1291			1301





. . . . .  
 gtggacttacttctggtttcattttataaaagcaaattccaggtgtcccaaagcaaggaat  
 . . . . .  
 ttaatcattttgtgtgacatgaaagtaaattccagtcctgccaatgagaagaaaaagacac  
 . . . . .  
 agcaagttgcagcgtttatagtctgcttttacatctgaacctctgtttttgttatttaag  
 |4101 |4111 |4121 |4131 |4141 |4151  
 GTGAAGCAGCATCTGGGTGTGAGAGTGAAACAAGCGTCTCTGAAGACTGCTCAGGGCTAT  
 E A A S G C E S E T S V S E D C S G L S  
 |1371 |1381  
 |4161 |4171 |4181 . . . . .  
 CCTCTCAGAGTGACATTTTAACCACTCAGgtaaaaagcgtgtgtgtgtgtgcacatgcgt  
 S Q S D I L T T Q  
 |1391  
 . . . . .  
 gtgtgtggtgtcctttgcattcagtagtatgtatccacattcttaggtttgctgacatc  
 . . . . .  
 atctctttgaattaatggcacaattgtttgtggttcattgtctccttaaattagactgta  
 . . . . .  
 agcaccttgatggaactcatactaccttttatttcacacacacgcacacgcgcacacaca  
 . . . . .  
 gcctacacatacactgccttagctcattgtagcataactaaatactgattttaatgaataag  
 . . . . .  
 ctaaaccttcgaaaccttttgctaattcc

Exon 12 | Start: 135409 | End: 135580 | Length: 171

. . . . .  
 tattttttcactccctagcttttaaagaaaataaccaacttcaaaaggacatcacataa  
 . . . . .  
 catcaagtctatttgggggaatttgaggattttttccctcactaacatcatttggaata  
 . . . . .  
 atttcatgggcattaattgcatgaatgtggttagattaaaagggtgttcagctagaacttg

. . . . .  
 tagttccatactaggtgatttcaattcctgtgctaaaattaatttgatgatatttttc  
 . . . . .  
 atttaatggaaagcttctcaaagtatttcattttcttggtgccatttatcgtttttgaag  
 . . . . .  
 |4191 |4201 |4211 |4221 |4231 |4241  
 CAGAGGGATACCATGCAACATAACCTGATAAAGCTCCAGCAGGAAATGGCTGAAC TAGAA  
 Q R D T M Q H N L I K L Q Q E M A E L E  
 |1401 |1411  
 . . . . .  
 |4251 |4261 |4271 |4281 |4291 |4301  
 GCTGTGTTAGAACAGCATGGGAGCCAGCCTTCTAACAGCTACCCCTTCATCATAAGTGAC  
 A V L E Q H G S Q P S N S Y P S I I S D  
 |1421 |1431  
 . . . . .  
 |4311 |4321 |4331 |4341 |4351 .  
 TCTTCTGCCCTTGAGGACCTGCGAAATCCAGAACAAAGCACATCAGAAAAAGgtgtgtat  
 S S A L E D L R N P E Q S T S E K A  
 |1441 |1451  
 . . . . .  
 tgttggccaaacactgatattttaagcaaaattctttccttcccctttatctccttctga  
 . . . . .  
 agagtaaggacctagctccaacattttatgatccttgctcagcacatgggtaattatgga  
 . . . . .  
 gccttggttcttgtccctgctcacaactaatataaccagtcagagggaccaaggcagtca  
 . . . . .  
 ttcattgtgtcatctgagtacctacaacaagtagatgctatggggagcccatggaagata  
 . . . . .  
 catggtataacaacatagctcttgctctattggaagctaagtggaatgggaga

Exon 13 | Start: 141370 | End: 141496 | Length: 126

. . . . .  
 tcagggccaaggaatatagatttttttttcagccttgctcagctgggtgtctttattt  
 . . . . .  
 actctgtcttaaagtggttccttttattatcattatttttttaattcattgaattccatt

. . . . .  
 tgggtgctagcatctgtctgttgcatgcttggtgtttataaaattctgcctgatataacttg  
 . . . . .  
 tttaaaaaccaatttggtgtatcatagattgatgcttttgaaaaaatcagtattctaacc  
 . . . . .  
 tgaattatcactatcagaacaaagcagtaaagtagatttgttttctcattccatttaaag  
 |4361 |4371 |4381 |4391 |4401 |4411  
 CAGTATTAACTTCACAGAAAAGTAGTGAATACCCTATAAGCCAGAATCCAGAAGGCCTTT  
 V L T S Q K S S E Y P I S Q N P E G L S  
 |1461 |1471  
 |4421 |4431 |4441 |4451 |4461 |4471  
 CTGCTGACAAGTTTGAGGTGTCTGCAGATAGTTCTACCAGTAAAAATAAAGAACCAGGAG  
 A D K F E V S A D S S T S K N K E P G V  
 |1481 |1491  
 |4481 . . . . .  
 TGGAAAGgtaagaacatcaatgtaaagatgctgtggtatctgacatctttatttatatt  
 E R  
 . . . . .  
 gaactctgattgttaatttttttcaccatactttctccagttttttgcatacaggcattt  
 . . . . .  
 atacacttttattgctctaggatacttcttttgtttaatcctatataggttttttgaacc  
 . . . . .  
 tataacataagctacaacatgagaaatgtgcggttagatagatatgtcccttctgaaggt  
 . . . . .  
 cagaaaaaatataatggaggtaaacctgaacaagcttggaactgatggtagacttct  
 . . .  
 tcaaggc

Exon 14 | Start: 143463 | End: 143653 | Length: 190

. . . . .  
 agcctcccgagtagctgagattacaggcgccagccaccacaccagctactgacctgctt

. . . . .  
 ttaaacagctgggagatatggtgcctcagaccaaccaaccccatgttatatgtcaaccc  
 . . . . .  
 tgacatatattggcaggcaacatgaatccagacttctaggctgtcttgcgggctcttttttg  
 . . . . .  
 ccagtcatttctgatctctctgacatgagctgtttcatttatgctttggctgccagcaa  
 . . . . .  
 gtatgatttgcctttcacattggtggcgatggttttctccttcatttatctttctag  
 |4491 |4501 |4511 |4521 |4531 |4541  
 GTCATCCCCCTTCTAAATGCCCATCATTAGATGATAGGTGGTACATGCACAGTTGCTCTGG  
 S S P S K C P S L D D R W Y M H S C S G  
 |1501 |1511  
 |4551 |4561 |4571 |4581 |4591 |4601  
 GAGTCTTCAGAATAGAACTACCCATCTCAAGAGGAGCTCATTAAAGTTGTTGATGTGGA  
 S L Q N R N Y P S Q E E L I K V V D V E  
 |1521 |1531  
 |4611 |4621 |4631 |4641 |4651 |4661  
 GGAGCAACAGCTGGAAGAGTCTGGGCCACACGATTTGACGGAACATCTTACTTGCCAAG  
 E Q Q L E E S G P H D L T E T S Y L P R  
 |1541 |1551  
 |4671 . . . . .  
 GCAAGATCTAGgtaatatattcatctgctgtattggaacaaacactttgattttactctga  
 Q D L E  
 . . . . .  
 atcctacataaagatatctggttaaccaacttttagatgtactagtctatcatggacac  
 . . . . .  
 ttttgttataacttaattaagccacttttagaaaaatagctcaagtgttaataaggttta  
 . . . . .  
 cttgaaaattattgaaactgttaatccatctatatatttaattaatggtttaactaatgat  
 . . . . .  
 tttgaggatgagggagtcttggtgtactctaaatgtattatttcaggccaggcatagtgg  
 . . .

ctcacgcctgt

Exon 15 | Start: 146746 | End: 147056 | Length: 310

```
. . . . .
tctaaaattatactattcctatgactaaaccttgcataatatcttttatctccctaggat
. . . . .
atatttctaaaactagcattgttgactgaaagtgtaaatacgtgttaagggtgttgctac
. . . . .
ataatgccatatttccttttaggaaactaagctactttggatttcaccaacactgtat
. . . . .
tcatgtaccatttttctcttaacctactttattggtctttttaattcttaacagagac
. . . . .
cagaactttgtaattcaacattcatcgttgtgttaaattaaacttctcccattcctttcag
```

```
      |4681      |4691      |4701      |4711      |4721      |4731
AGGGAACCCCTTACCTGGAATCTGGAATCAGCCTCTTCTCTGATGACCCTGAATCTGATC
  G  T  P  Y  L  E  S  G  I  S  L  F  S  D  D  P  E  S  D  P
      |1561                                |1571
```

```
      |4741      |4751      |4761      |4771      |4781      |4791
CTTCTGAAGACAGAGCCCCAGAGTCAGCTCGTGTGGCAACATACCATCTTCAACCTCTG
  S  E  D  R  A  P  E  S  A  R  V  G  N  I  P  S  S  T  S  A
      |1581                                |1591
```

```
      |4801      |4811      |4821      |4831      |4841      |4851
CATTGAAAGTTCCCCAATTGAAAGTTGCAGAATCTGCCCAGAGTCCAGCTGCTGCTCATA
  L  K  V  P  Q  L  K  V  A  E  S  A  Q  S  P  A  A  A  H  T
      |1601                                |1611
```

```
      |4861      |4871      |4881      |4891      |4901      |4911
CTACTGATACTGCTGGGTATAATGCAATGGAAGAAAGTGTGAGCAGGGAGAAGCCAGAAT
  T  D  T  A  G  Y  N  A  M  E  E  S  V  S  R  E  K  P  E  L
      |1621                                |1631
```

```
      |4921      |4931      |4941      |4951      |4961      |4971
TGACAGCTTCAACAGAAAGGGTCAACAAAAGAATGTCCATGGTGGTGTCTGGCCTGACCC
  T  A  S  T  E  R  V  N  K  R  M  S  M  V  V  S  G  L  T  P
      |1641                                |1651
```

```

      |4981      . . . . .
CAGAAGAATTTgtgagtgtatccatatgtatctccctaatagacttaacaacatt
  E  E  F
      |1661

. . . . .
ctggaaagagttttatgtaggtattgtcaattaataacctagaggaagaatctagaaaa

. . . . .
caatcacagttctgtgtaatttaatttcgattactaatttctgaaaatttagatctagat

. . . . .
aaagctatagtgtggattattttatgtatatttacttgagaaaataattattaaatatta

. . . . .
gtggaaaagctatactttgggtatgatataggactttcgaattggaattttcctttctat

. . . . .
ctgtaaaagca

```

Exon 16 | Start: 150289 | End: 150376 | Length: 87

```

. . . . .
gagacttcaggtgtcttagaattttttaaatgtaccctttctgagaaaaacagagactta

. . . . .
aagctaggataactgggtattctattttttttttttttttttttttacctccagcctgggt

. . . . .
gacagagcaagactctgtctaaaaaaaaaaaaaaaaaattcactttaaatagttccagg

. . . . .
acacgtgtagaacgtgcaggattgctacataggtaaacatatgccatgggtggaataacta

. . . . .
gtattctgagctgtgtgctagaggtaactcatgataatggaatatttgatttaatttcag

```

```

      |4991      |5001      |5011      |5021      |5031      |5041
ATGCTCGTGTACAAGTTTGCCAGAAAAACACCACATCACTTTAACTAATCTAATTACTGAA
M  L  V  Y  K  F  A  R  K  H  H  I  T  L  T  N  L  I  T  E
                        |1671                                |1681

```

```

      |5051      |5061      |5071      . . . . .
GAGACTACTCATGTTGTTATGAAAACAGgtataccaagaacctttacagaataccttgca

```

E T T H V V M K T D  
|1691

. . . . .  
tctgctgcataaaaccacatgaggcgaggcacggtggcgcatgcctgtaatcgagcact  
. . . . .  
ttgggaggccgaggcgggcagatcacgagattaggagatcgagaccatcctggccagcat  
. . . . .  
ggtgaaaccccgctctctactaaaaataaaaaattagctgggtgtggtcgctgcgcct  
. . . . .  
gtagtcccgctactcgtgaggctgaggcaggagaatcacttgaaccggggagatggagg  
. . . . .  
ttgcagtgagccgagatcatgccactgc

Exon 17 | Start: 154033 | End: 154110 | Length: 77

. . . . .  
tataatggagatctatagctagccttggcgtctagaagatgggtgttgagaagaggaggt  
. . . . .  
ggacagatatttcctctggtcttaacttcatatcagcctcccctagacttccaaatatcc  
. . . . .  
atacctgctggttataaattagtggtgttttcagcctctgattctgtcaccaggggtttta  
. . . . .  
gaatcataaatccagattgatcttgggagtgtaaaaactgaggctcttagcttcttag  
. . . . .  
gacagcacttcctgattttgttttcaacttctaatacctttgagtgtttttcattctgcag

|5081 |5091 |5101 |5111 |5121 |5131  
ATGCTGAGTTTGTGTGTAACGGACACTGAAATATTTTCTAGGAATTGCGGGAGGAAAAT  
A E F V C E R T L K Y F L G I A G G K W  
|1701 |1711

|5141 |5151 . . . . .  
GGGTAGTTAGCTATTTCTgtaagtataataactatctccctcctccctttaacacctc  
V V S Y F W

. . . . .  
 agaattgcatttttacacctaacgtttaacacctaagggttttgctgatgctgagtctga  
 . . . . .  
 gttaccaaagggtctttaattgtaataactaaactacttttatctttaatatcactttgtt  
 . . . . .  
 cagataagctggtgatgctgggaaaatgggtctcttttataactaataggacctaactctg  
 . . . . .  
 ctcttagcaatgtagcatatgagctagggatttatttaatatgtaggcaggaatccatgt  
 . . . . .  
 gcagcaggcaaacttata

Exon 18 | Start: 154611 | End: 154651 | Length: 40

. . . . .  
 ataactaataggacctaactctgctcctagcaatgtagcatatgagctagggatttattt  
 . . . . .  
 aatagtcggcaggaatccatgtgcagcaggcaaacttataatgtttaattaacatcaa  
 . . . . .  
 ctctgtctccagaaggaaactgctgctacaagccttattaagggtgtggcttttagagg  
 . . . . .  
 gaaggacctctcctctgtcattcttctgtgctcttttgtgaatcgctgacctctctatc  
 . . . . .  
 tccgtgaaaagagcacgttcttctgctgtatgtaacctgtcttttctatgatctctttag  
 . . . . .  
 GGGTGACCCAGTCTATTAAAGAAAGAAAAATGCTGAATGAGgtaagtacttgatgttaca  
 V T Q S I K E R K M L N E  
 . . . . .  
 aactaaccagagatattcattcagtcatatagttaaaaatgtatttgcttccttccatca  
 . . . . .  
 atgcaccactttccttaacaatgcacaaatttccatgataatgaggatcatcaagaatt



. . . . .  
atgcaggcctgcactgtggctcatacctataatcccagcgctttgggaggctgaggcgct  
. . . . .  
tggatcacctgatgtcgggagttcaagaccagcctgaccaacatggagaaacccgtttc  
. . . . .  
tactaaaaatacaaaattagccgggcttggtggcacttgcc

Exon 19 | Start: 160849 | End: 160932 | Length: 83

. . . . .  
gcattcaaaagattctcctgcctcagcctcccaagtagctgggattacaggctgcctgcc  
. . . . .  
ccacgccaactaatttttgtatttttagtagagatgaggtttcaccatgttggtcaga  
. . . . .  
ctggtgtcgaactcctgacctcaagtgatctgcctgcctcagctctccaaagtgctagga  
. . . . .  
ttacaggggtgagccactgcgctggcctgaatgccttaaatatgacgtgtctgctccac  
. . . . .  
ttccattgaaggaagcttctctttcttctatcctgatgggtgtgtttggtttctttcag

5201	5211	5221	5231	5241	5251
CATGATTTTGAAGTCAGAGGAGATGTGGTCAATGGAAGAAACCAAGGTCCAAAGCGA					
H D F E V R G D V V N G R N H Q G P K R					
	1741				1751

5261	5271	. . . . .
GCAAGAGAATCCCAGGACAGAAAAGgtaaagctccctccctcaagttgacaaaaatctcac		
A R E S Q D R K		

. . . . .  
cccaccactctgtattccactcccctttgcagagatgggccgcttcattttgtaagactt  
. . . . .  
attacatacatcacagtgctagatactttcacacaggttcttttttctactcttccatcc  
. . . . .  
caaccacataaataagtattgtctctactttatgaatgataaaactaagagatttagaga

. . . . .  
 ggctgtgtaatttgattcccgctctcgggttcagatcttagctgataagtggaagagctg  
 . . . . .  
 ggactttaagcagatgagaatcta

Exon 20 | Start: 166867 | End: 166921 | Length: 54

. . . . .  
 cttggcctgattggtgacaaaagtgagatgctcagtccttgatgacaaagaatgcctgt  
 . . . . .  
 agagtgcaggtcaactacatatgcacttcaagaagatcttctgaaatccagtagtgttct  
 . . . . .  
 ggacattggactgcttgctccctgggaagtagcagcagaaatcatcaggtggtgaacagaa  
 . . . . .  
 gaaaaagaaaagctcttcctttttgaaagtctgttttttgaataaaagccaatattcttt

. . . . .  
 tataactagattttccttctctccattcccctgtccctctctcttctcttcttccag  
 |5281 |5291 |5301 |5311 |5321 |5331 .  
 ATCTTCAGGGGGCTAGAAATCTGTTGCTATGGGCCCTTCACCAACATGCCACAGgtaag  
 I F R G L E I C C Y G P F T N M P T D  
 |1761 |1771

. . . . .  
 agcctgggagaaccccagagttccagcaccagcctttgtcttacatagtgaggattattata  
 . . . . .  
 agcaagatcccacgatgggggttcctcagattgctgaaatgttctagaggctattctatt  
 . . . . .  
 tctctaccactctccaaacaaaacagcacctaaatgttatcctatggcaaaaaaaacta  
 . . . . .  
 taccttgtcccccttctcaagagcatgaaggagggttaatagttaggattcagtatgttat  
 . . . . .  
 gtgttcagatggcggttgagctgctgttagtgccaacatgttagtgagaaaaatc

Exon 21 | Start: 168790 | End: 168863 | Length: 73

. . . . .  
attaatggaaattagatctttgattttttttctttcaagcattttatttgagagactat

. . . . .  
caaaccttataccaagtggccttatggagactgataaccagagtacatggcatatcagtg

. . . . .  
gcaaattgacttaaaatccatacccctactattttaagaccattgtcctttggagcagag

. . . . .  
agacagactctccattgagaggtcttgctataagccttcacccggagagtgtagggtag

. . . . .  
agggcctgggttaagtatgcagattactgcagtgattttacatctaaatgtccattttag

          |5341      |5351      |5361      |5371      |5381      |5391  
ATCAACTGGAATGGATGGTACAGCTGTGTGGTGCTTCTGTGGTGAAGGAGCTTTCATCAT  
  Q  L  E  W  M  V  Q  L  C  G  A  S  V  V  K  E  L  S  S  F  
          |1781                          |1791

          |5401      . . . . .  
TCACCCTTGGCACAgtaagtattgggtgccctgtcagagagggaggacacaatattctct  
  T  L  G  T  
          |1801

. . . . .  
cctgtgagcaagactggcacctgtcagtcctatggatgcccctactgtagcctcagaag

. . . . .  
tcttctctgcccacatacctgtgccaaaagactccatctgtaagggatgggtaaggattt

. . . . .  
gagaactgcacatattaaatatactgaggggaagactttttccctctaactctttttccca

. . . . .  
tatgtccctccccctcctctctgtgactgccccagcatactgtgtttcaacaaatcatca

. . . . .  
agaaatgatgggct

Exon 22 | Start: 170281 | End: 170341 | Length: 60

```
. . . . .
ccaggagtttgagaccagcctgggcaacatggcaaaaccctgtctctaccaaaaatacaa
. . . . .
aaaaattagccaggggtggtggtacgtgtctgtagttccagctacttaggaggctgagat
. . . . .
ggaaggattgcttgagcccaggaggcagaggtggcagtgagctgagatcacaccactgca
. . . . .
ctccagcctgggtgacagagcaagaccctgtctcaaaaacaaacaaaaaatgatgaag
. . . . .
tgacagttccagtagtcctactttgacactttgaatgctcttccttcctggggatccag
      |5411      |5421      |5431      |5441      |5451      |5461
GGTGTCCACCCAATTGTGGTTGTGCAGCCAGATGCCTGGACAGAGGACAATGGCTTCCAT
G V H P I V V V Q P D A W T E D N G F H
                        |1811                        |1821
```

```
. . . . .
Ggtaaggctgcctgcatgtacctgtgctatatggggtccttttgcatggggttggtttatc
A
. . . . .
actcattacctggtgcttgagtagcacagttcttggcacattttaaatatttgttgaatg
. . . . .
aatggctaaaatgtctttttgatgtttttattgttatttgttttatattgtaaaagtaat
. . . . .
acatgaactgtttccatgggggtgggagtaagatatgaatgttcatcacaaaaacataaat
. . . . .
caaggccgggcatgggtggctcatgcctataattccagcactttgggaggtcaagatggag
.
g
```

Exon 23 | Start: 172182 | End: 173689 | Length: 1507

. . . . .  
 taaaaatacaaaaattagctgggtgtgatggcatgtgcctgtaattccagctactcagga  
 . . . . .  
 ggcagagacaggagaattgcttgaacccaggaggcggaggtgaatgagccgagattgcg  
 . . . . .  
 ccatcacactctagcctcggcgacagagcaagactccgtctcaaaaaaaaaaaaaaaaaa  
 . . . . .  
 ttagcttctacctcattaatcctaagaactcatacaaccaggaccctggagtcgattgat  
 . . . . .  
 tagagcctagtccaggagaatgaattgacactaatctctgcttgtgttctctgtctccag  
 |5471 |5481 |5491 |5501 |5511 |5521  
 CAATTGGGCAGATGTGTGAGGCACCTGTGGTGACCCGAGAGTGGGTGTTGGACAGTGTAG  
 I G Q M C E A P V V T R E W V L D S V A  
 |1831 |1841  
 |5531 |5541 |5551 |5561 |5571 |5581  
 CACTCTACCAGTGCCAGGAGCTGGACACCTACCTGATACCCGAGATCCCCACAGCCACT  
 L Y Q C Q E L D T Y L I P Q I P H S H Y  
 |1851 |1861  
 |5591 |\*11 |\*21 |\*31 |\*41 |\*51  
 ACTGACTGCAGCCAGCCACAGGTACAGAGCCACAGGACCCCAAGAATGAGCTTACAAAGT  
 \*  
 |\*61 |\*71 |\*81 |\*91 |\*101 |\*111  
 GGCCTTTCCAGGCCCTGGGAGCTCCTCTCACTCTTCAGTCCTTCTACTGTCCTGGCTACT  
 |\*121 |\*131 |\*141 |\*151 |\*161 |\*171  
 AAATATTTTATGTACATCAGCCTGAAAAGGACTTCTGGCTATGCAAGGGTCCCTTAAAGA  
 |\*181 |\*191 |\*201 |\*211 |\*221 |\*231  
 TTTTCTGCTTGAAGTCTCCCTTGGAATCTGCCATGAGCACAAAATTATGGTAATTTTTC  
 |\*241 |\*251 |\*261 |\*271 |\*281 |\*291  
 ACCTGAGAAGATTTTAAAACCATTTAAACGCCACCAATTGAGCAAGATGCTGATTCATTA  
 |\*301 |\*311 |\*321 |\*331 |\*341 |\*351  
 TTTATCAGCCCTATTCTTTCTATTCAAGGCTGTTGTTGGCTTAGGGCTGGAAGCACAGAGT  
 |\*361 |\*371 |\*381 |\*391 |\*401 |\*411

GGCTTGGCCTCAAGAGAATAGCTGGTTTCCCTAAGTTTACTTCTCTAAAACCTGTGTTC

      |\*421      |\*431      |\*441      |\*451      |\*461      |\*471  
ACAAAGGCAGAGAGTCAGACCCTTCAATGGAAGGAGAGTGCTTGGGATCGATTATGTGAC

      |\*481      |\*491      |\*501      |\*511      |\*521      |\*531  
TTAAAGTCAGAATAGTCCTTGGGCAGTTCTCAAATGTTGGAGTGGAACATTGGGGAGGAA

      |\*541      |\*551      |\*561      |\*571      |\*581      |\*591  
ATTCTGAGGCAGGTATTAGAAATGAAAAGGAACTTGAAACCTGGGCATGGTGGCTCAGC

      |\*601      |\*611      |\*621      |\*631      |\*641      |\*651  
CCTGTAATCCCAGCACTTTGGGAGGCCAAGGTGGGCAGATCACTGGAGGTCAGGAGTTCG

      |\*661      |\*671      |\*681      |\*691      |\*701      |\*711  
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      |\*721      |\*731      |\*741      |\*751      |\*761      |\*771  
TCATGGTGGTGGACACCTGTAATCCCAGCTACTCAGGTGGCTAAGGCAGGAGAATCACTT

      |\*781      |\*791      |\*801      |\*811      |\*821      |\*831  
CAGCCCGGAGGTGGAGGTTGCAGTGAGCCAAGATCATACCACGGCACTCCAGCCTGGGT

      |\*841      |\*851      |\*861      |\*871      |\*881      |\*891  
GACAGTGAGACTGTGGCTCAAAAAAAAAAAAAAAAAAGGAAAATGAACTAGAAGAGAT

      |\*901      |\*911      |\*921      |\*931      |\*941      |\*951  
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      |\*961      |\*971      |\*981      |\*991      |\*1001     |\*1011  
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      |\*1021     |\*1031     |\*1041     |\*1051     |\*1061     |\*1071  
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      |\*1081     |\*1091     |\*1101     |\*1111     |\*1121     |\*1131  
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      |\*1141     |\*1151     |\*1161     |\*1171     |\*1181     |\*1191  
GAGGTGATTTTTTTCCTTTGCTCCCTGTTGCTGAAACCATACAGCTTCATAAATAATTTT

      |\*1201     |\*1211     |\*1221     |\*1231     |\*1241     |\*1251  
GCTTGCTGAAGGAAGAAAAAGTGTTTTTCATAAACCCATTATCCAGGACTGTTTATAGCT

      |\*1261     |\*1271     |\*1281     |\*1291     |\*1301     |\*1311  
GTTGGAAGGACTAGGTCTTCCCTAGCCCCCAGTGTCAGGGCAGTGAAGACTTGATT

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      |*1321      |*1331      |*1341      |*1351      |*1361      |*1371
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      |*1381 . . . . .
CACTTCCAccatgaatgactgttcttgagacttaggccagccgactttctcagagccttt

. . . . .
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actaagat

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LRG 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

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