

Gene: BRCA1 - Sequence: NG_005905.2
 Transcript: NM_007294.3 - Protein: NP_009225.1
 LRG: LRG_292t1 - Date : Thursday 11th June, 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: 92501 | End: 92713 | Length: 212

.
 tacttatatttaccgaaactggagacctccattagggcggaaagagtgggggattgggac

.
 ctcttcttacgactgctttggacaataggtagcgattctgaccttcgtacagcaattact

.
 gtgatgcaataagccgcaactggaagagtagaggctagaggcaggcactttatggcaaa

.
 ctcaggtagaattcttcctcttccgtctctttcctttacgtcatccgggggcagactgg


.
 gtggccaatccagagccccgagagacgcttggtctcttctgtccctcccatcctctgatt

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

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

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

|-49 |-39 |-29
 TCAGGAGGCCTTACCCTCTGCTCTGGGTAAAGgtagtagagtcccggaaggacagg

. 
 gggccaaagtgatgctctgggtactggcgtgggagagtggatttccgaagctgacagat

.
 ggggtattctttgacgggggtagggcggaacctgagaggcgtaaggcggttgtaaccct

.
ggggaggggggcagttttaggtcgcgaggaagcgtgaggatcaggaagggggcactg

.
agtgtccgtgggggaatcctcgtgataggaactggaatatgccttgagggggacactatg

.
tctttaaaaacgtcggctggtcatgaggtcagg

aggctaccaccacctaccgggtcagtcactcctctgtagcttttctctttcttggagaaag

tacaaaaagcaacttctagaatctttaaaaataa**aggacgttg**tcattagttcttttggtt

g ttgtcattttataaaccttttaaaaagatatatatatgttttcta atgtgttaaag

|51 |61 |71
 CATTAAATGCTATGCAGAAAATCTTAGAGTGTCCCATCTGgtaagtcagcacaagagtgtg
 I N A M Q K I L E C P I C
 |21

agggaagaaaagacatgtctagtaagattaggctattgtaattgctgattttcttaactg

aagaactttaaaaatatagaaaatgattccttggtctccatccactctgcctctccact

ttctgcactggggcaggaatctagtttagattaactggc

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

.
aattcgtacgaactattatcaactaatcttttaaagtctgatgatagtatagagtattga

.
agggatcaatataattctgttttgatatctgaaagctcactgaaggaaggaatcgtattc

.
tctgctgtattctcgttcctgacacagcagacatttaataaatattgaacgaacttgag

.
gccttatgttgactcagtcataacagctcaaagttgaacttattcactaagaatagcttt

.
atttttaataaattattgagcctcatttattttcttttctccccctaccctgctag

|81 |91 |101 |111 |121 |131 .
TCTGGAGTTGATCAAGGAACCTGTCTCCACAAAGTGTGACCACATATTTGCAAgtagt
L E L I K E P V S T K C D H I F C K
|31 |41

.
ttgaatgtgttatgtggctcattattagccttggtttttgtccttcataaccaggaaa

.
cacctaactttatagaagctttactttcttcaattaagtgagaacgaaaaatccaactcc

.
atttcattctttctcagagagtatatagttatcaaaagttggttgtaatcatagttcctg

.
gtaaagttttgacatatattatcttttttttttttttgagacaaagtctcgctctgtcg

.
cccaggctggagtgagtgcatgatcttggtcactgcaacctccgcccccg

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

.
tatgaatatatcattaaatatgccatattaactttttattaagttttatgtgatcataaca

.
gtaagccatatgcatgtaagttcagttttcatagatcattgcttatgtagtttaggtttt

.
tgcttatgcagcatccaaaaacaattaggaacttatgcttgtaattcacctgccattac

.
tttttaaatggctcttaagggcagttgtgagattatctttcatggctatttgccctttg

.
agtattctttctacaaaaggaagtaaattaaattgttctttctttctttataatttatag

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

 |201 |211
GAATGATATAACCAAAAGgtatataatttggtaatgatgctaggttgaagcaaccacag
N D I T K R
 |71

.
taggaaaaagtagaaattatttaataacatagcgttcctataaaaccattcatcagaaaa

.
atttataaaagagtttttagcacacagtaaattatttccaaagtatttttcggaagtt

.
ttatgggacatctgccattatacaggtattagaaacttactgcctttctctaattgcttcta

.
gtgtaaaaacttgcacacttatgtaaagtagggctgtatcgccgtgccccattgtctgt

.
taatcttgtttttatatt

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

.
aaattaaacaaaaaaaaaagtactctagttttctatgcaatgcattatatctgctgtgga

.
tttagggcagtattatatcagataattttaggcatttggtaggcttaaataaatgacaaa

.
aagttactaaatcactgccatcacacggtttatacagatgtcaatgatgtattgattata

.
gaggttttctactgttgctgcatcttatttttatttgtttacatgtcttttcttatttta

.
gtgtccttaaaaggttgataatcacttgctgagtggtgtttctcaaacaatttaatttcag

 |221 |231 |241 |251 |261 |271
GAGCCTACAAGAAAGTACGAGATTTAGTCAACTTGTGAAGAGCTATTGAAAAATCATTG
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
TGCTTTTCAGCTTGACACAGGTTTGGAGTgtaagtgtgaatatccaagaatgacactc
A F Q L D T G L E Y
 |101

.
aagtgcgtgcatgaaaactcaggaagtttgcacaattactttctatgacgtggtgataa

.
gaccttttagtctaggttaatttttagttctgtatctgtaatctatttttaaaaaattact

.
cccactgggtctcacaccttattttatcaatcgtaagggtgcacatttttcacatcttaaca

.
tctctgaaattgggaacattttactattgagggtgtgtcatttgtttaatttggtgctt

.
tctttcttagtgatacagaaaataatagt

Exon 6 | Start: 113723 | End: 113862 | Length: 139

.
tacattgttggtgtccttagcttttagtgaaatacagtattgataggcaaatttcttagtgt

.
taaggtagaaaacaaggactctaaataactttgatggctctgtgtatttgtttttgtttcc

.
taggagtaaaatttccagttgattttttaaaatttgatttttaaaaaaatcaaggtaa

.
ccttaatgcattgtcttaacacaacaaagagcatatagggtttctcttggtttccttg

.
attataattcatatcttttctctaactgcaaacataatgttttcccttgatttttacag

 |311 |321 |331 |341 |351 |361
ATGCAAAACAGCTATAATTTTGCAAAAAAGGAAAAATAACTCTCCTGAACATCTAAAAGATG
 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
AACCCGAAAAATCCTTCCTTGgtaaaaccatttgttttcttcttcttcttcttcttctt
 P E N P S L

.
cttttttttctttttttttttgagatggagtcttgctctgtggcccaagctagaagc

.
agtcctcctgccttagcccccttagtagctgggattacaggcacgcgcacccatgccagg

.
ctaatttttgatttttagtagagacgggtttcatcatgttgccaggctggtctcgaa

.
ctcctaacctcagtgatccaccacctcggctcccaaattgctgggattacaggtgtg

.
agccactgtgcccggcggt

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

.
actactactattattttgtagagactgggtctcactctgttgcttatgctggctctgaac

.
tcctggcctcaagcagtcctgctccagcctcccaaagtgtgggattataggcatgagct

.
accgctcccagccccagacatttttagtggtgtaaattcctgggcatttttccaggcatca

.
tacatgtagctgactgatgatggtcaatttattttgtccatggtgtcaagtttcccttc

.
aggaggaaaagcacagaactggccaacaattgcttgactgttctttaccatactgtttag

 |451 |461 |471 |481 |491 |501
CAGGAAACCACTCTCAGTGTCCAACCTCTTAACCTTGGAACCTGTGAGAACTCTGAGGACA
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 . . .
AAGCAGCGGATACAAACCTCAAAAGACGTCTGTCTACATTGAATTGGGtaagggtctcagg
K Q R I Q P Q K T S V Y I E L G
 |171 |181

.
ttttttaagtatttaataataattgctggattccttatcttatagttttgccaaaatct

.
tggtcataatttgattttgtggcagctttgggaagtgaatttatgagccctatgg

.
tgagttataaaaaatgtaaaagacgcagttccacctgaagaatcttactttaaaagg

.
gagcaaaagaggccaggcatggtggctcacacctgtaatccagcactttgggaggccaa

.
agtgggtggatcacctgaggtcgggagttcgagaccagcctagcca

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

.
tagaaacgggggtctcactttgttggccaggctggtcttgaactcctaacctcaaataat

.
ccaccatctcggcctcctcaagtgtgggattacaggtgagagccactgtgcctggcga

.
agcccatgcctttaaccacttctctgtattacatactagcttaactagcattgtatcctgc

.
cacagtagatgctcagtaaatatttctagttgaatatctgtttttcaacaagtacatttt

.
tttaacccttttaattaagaaaacttttattgatttatttttgggggaaattttttag

|551 |561 |571 |581 |591 . .
GATCTGATTCTTCTGAAGATACCGTTAATAAGGCAACTTATTGCAGgtgagtcaaagaga
S D S S E D T V N K A T Y C S
|191

.
acctttgtctatgaagctggtattttcctatttagttaatattaaggattgatgtttctc

.
tctttttaaaaatattttaacttttatttttaggttcagggatgtatgtgcagtttggtat

.
ataggtaaacacacgacttgggatttggtgtatagattttttcatcatccgggtactaa

.
gcataccccacagttttttgtttgctttcttctgaatttctccctcttcccaccttct

.
ccctcaagtaggctggtgttttctccagactagaatcatggtattgg

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

.
gtatttttagtagagatggggtttcaccatgttggccaggctggtcttgaactcatgacc
.
tcaagtgggtccaccgcctcagcctcccaaagtgtggaattacaggcttgagccaccgt
.
gccagcaaccatttcatttcaactagaagtttctaaaggagagagcagctttcactaac
.
taaataagattggtcagcttttctgtaatcgaaagagctaaaatgtttgattcttggtcatt

.
tgacagttctgcatacatgtaactagtgtttcttattaggactctgtcttttccctatag
|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
GGATTCTGCAAAAAAGGgtaatggcaaagtttgccaacttaacaggcactgaaaagagag
D S A K K A
|221

.
tgggtagatacagtactgtaattagattattcgaagaccatttgggacctttacaacc
.
acaaaatctcttggcagagtttagagtatcattctctgtcaaatgtcgtggtatggtctga
.
tagatttaaattggtactagactaatgtacctataataagaccttctgtaactgattgttg
.
cccttcgttttttttttgtttgtttgtttgttttttttgagatggggctcactctg
.
ttgccaggctggagtg

Exon 10 | Start: 123124 | End: 126549 | Length: 3425
 BE AWARE: Flanking intron is shared with the following exon

```

. . . . .
agttttctgatggccaatctgcttttaattcactccttagacgttagagaaataggtgtgg
. . . . .
tttctgcatagggaaaattctgaaattaaaaatttaatggatcctaagtggaaataatct
. . . . .
aggtaaataggaattaaatgaaagagtatgagctacatcttcagtatacttggtagttaa
. . . . .
tgagggttagtttctctaatatagccagctggttgatttccacctccaagggtgatgaagt
. . . . .
atgtatTTTTTaatgacaattcagtttttgagtaccttggtatTTTTgtatatTTTcag

```

671	681	691	701	711	721
CTGCTTGTGAATTTCTGAGACGGATGTAACAAATACTGAACATCATCAACCCAGTAATA					
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
ATGATTGTAACACCACTGAGAAGCGTGCAGCTGAGAGGCATCCAGAAAAGTATCAGGGTA					
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
GTTCTGTTTCAAACCTTGCATGTGGAGCCATGTGGCACAAATACTCATGCCAGCTCATTAC					
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
TCTGTAATAAAAGCAAACAGCCTGGCTTAGCAAGGAGCCAACATAACAGATGGGCTGGAA					
C N K S K Q P G L A R S Q H N R W A G S					
	311			321	

2051	2061	2071	2081	2091	2101
CAATGAACAGACAAGTAAAAGACATGACAGCGATACTTTCCCAGAGCTGAAGTTAACAA					
N	E	Q	T	S	K
			R	H	D
			S	D	T
			F	P	E
			L	K	L
			T	N	
		691			701
2111	2121	2131	2141	2151	2161
ATGCACCTGGTTCTTTTACTAAGTGTTCAAATACCAAGTGAAGTTAAAGAATTTGTCAATC					
A	P	G	S	F	T
			K	C	S
			N	T	S
			E	L	K
			E	F	V
			N	P	
		711			721
2171	2181	2191	2201	2211	2221
CTAGCCTTCCAAGAGAAGAAAAAGAAGAGAACTAGAAACAGTTAAAGTGTCTAATAATG					
S	L	P	R	E	E
			K	E	E
			K	L	E
			T	V	K
			V	S	N
			N	A	
		731			741
2231	2241	2251	2261	2271	2281
CTGAAGACCCCAAAGATCTCATGTTAAGTGGAGAAAGGGTTTTGCAAAGTGAAGATCTG					
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
TAGAGAGTAGCAGTATTTTATTGGTACCTGGTACTGATTATGGCACTCAGGAAAGTATCT					
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
CGTTACTGGAAGTTAGCACTCTAGGGAAGGCAAAAACAGAACCAAATAAATGTGTGATC					
L	L	E	V	S	T
			L	G	K
			A	K	T
			E	P	N
			K	C	V
			S	Q	
		791			801
2411	2421		2441	2451	2461
AGTGTGCAGCATTTGAAAACCCCTAGGGGACTAATTCATGGTTGTTCCAAAGATAATAGAA					
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
GCATAGAAATGGAAGAAAGTGAAGTTGATGCTCAGTATTTGCAGAATACATTCAAGGTTT					
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
 CAAAGCGCCAGTCATTTGCTCCGTTTTCAAATCCAGGAAATGCAGAAGAGGAATGTGCAA
 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
 CATTCTCTGCCACTCTGGGTCCTTAAAGAAACAAAGTCCAAAAGTCACTTTTGAATGTG
 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
 GTAGTATCAAAGGAGGCTCTAGGTTTTGTCTATCATCTCAGTTCAGAGGCAACGAAACTG
 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
 GACTCATTACCTCAATAAATCATGGACTTTTACAAAACCCATATCGTATACCACCACTTT
 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
 TTCCCATCAAGTCATTTGTTAAACTAAATGTAAGAAAAATCTGCTAGAGGAAAACTTTG
 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
 AGGAACATTCAATGTGCTGAAAGAGAAAATGGGAAATGAGAACATTCCAAGTACAGTGA
 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

.
gctaggacgtcatctttgactgaatg

Exon 11 | Start: 126952 | End: 127040 | Length: 88
BE AWARE: Flanking intron is shared with the previous exon

.
agctttaacatcctaattactggtggacttacttctggtttcattttataaaagcaaadc

.
caggtgtcccaaagcaaggaatttaatcattttgtgtgacatgaaagtaaaccagtcct

.
gccaatgagaagaaaaagacacagcaagttgcagcgtttatagctctgttttacatctga

. |4101 |4111 |4121 |4131
acctctgtttttgttatttaagGTGAAGCAGCATCTGGGTGTGAGAGTGAAACAAGCGTC
E A A S G C E S E T S V
|1371

|4141 |4151 |4161 |4171 |4181 .
TCTGAAGACTGCTCAGGGCTATCCTCTCAGAGTGACATTTTAACCACTCAGgtaaaaagc
S E D C S G L S S Q S D I L T T Q
|1381 |1391

.
gtgtgtgtgtgtgcacatgcgtgtgtgtgtgtcctttgcattcagtagtatgtatcaca

.
cattcttaggtttgctgacatcatctctttgaattaatggcacaattgtttgtggttcac

.
tgtctccttaaattagactgtaagcaccttgatggaactcatactaccttttatttcaca

.
cacacgcacacgcgcacacacagcctacatacactgcctagctcattgtagcatacta

.
aatactgattttaatgaataagctaaaccttcgaaaccatttgctaatacc

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

.
tattttttcactccctagcttttaaagaaaataaccaacttcaaaaggacatcacataa
.
catcaagtcctatttgggggaatttgaggatttttccctcactaacatcatttggaata
.
atctcatggtgcatcatttaattgcatgaatgtggttagattaaaaggtgttcagctagaacttg
.
tagttccatactaggtgatttcaattcctgtgctaaaattaatttgatgatataatttc
.
atctaagtgaaagcttctcaaagtatttcattttcttggtgccatttatcgtttttgaag
|4191 |4201 |4211 |4221 |4231 |4241
CAGAGGGATACCATGCAACATAACCTGATAAAGCTCCAGCAGGAAATGGCTGAACTAGAA
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
GCTGTGTTAGAACAGCATGGGAGCCAGCCTTCTAACAGCTACCCTCCATCATAAGTGAC
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
.
tggtggccaaacactgatatcttaagcaaaattctttccttcccctttatctccttctga
.
agagtaaggacctagctccaacattttatgatccttgctcagcacatgggtaatttggga
.
gccttggttcttgtccctgctcacaactaatataaccagtcagagggacccaaggcagtc
.
ttcatgtgtcatctgagtacctacaacaagtagatgctatggggagcccatggaagata

.
catggtataacaacatagctcttgctctattggaagctaagtggaatgggaga

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

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. . . . .
tcaggccaaggaatatagatttttttttcagccttgtctcagctgggtgtctttattt
. . . . .
actctgtcttaaagtgttccttttattatcattatttttttaatcattgaattccatt
. . . . .
tgggtgctagcatcgtcctgttgcaattgcttggtttataaaaattctgcctgatatacttg
. . . . .
tttaaaaaccaatttgtgtatcatagattgatgcttttgaaaaaatcagtattctaacc
. . . . .
tgaattatcactatcagaacaaagcagtaaagtagatttgttttctcattccatttaaag

|4361      |4371      |4381      |4391      |4401      |4411
CAGTATTAAC TTCACAGAAAAGTAGTGAATACCCTATAAGCCAGAATCCAGAAGGCCTTT
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
TGGAAGGtaagaaacatcaatgtaaagatgctgtggtatctgacatctttatttatatt
E R

. . . . .
gaactctgattgttaatttttttcaccatactttctccagttttttgcatacaggcattt
. . . . .
atacacttttattgctctaggatacttcttttgtttaatcctatataggttttttgaacc
. . . . .
tataacataaggtacaacatgagaaatgtgcggttagatagatatgtcccttctgaaggt
. . . . .
cagaaaaaatataatggaggtaaaacctgaacaagcttggaactgatggtagacttct
. . .
tcaaggc
```

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

```
. . . . .
agcctcccgagtagctgagattacaggcgccagccaccacaccagctactgacctgctt

. . . . .
ttaaacagctgggagatatggtgcctcagaccaaccaaccccatgttatatgtcaaccc

. . . . .
tgacatatattggcaggcaacatgaatccagacttctaggctgtcttgcgggctcttttttg

. . . . .
ccagtcatttctgatctctctgacatgagctgttttcattttatgctttggctgccagcaa

. . . . .
gtatgatttgtcctttcacaattggtggcgatggttttctccttcatttatctttctag

      |4491      |4501      |4511      |4521      |4531      |4541
GTCATCCCCTTCTAAATGCCCATCATTAGATGATAGGTGGTACATGCACAGTTGCTCTGG
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
GAGTCTTCAGAATAGAACTACCCATCTCAAGAGGAGCTCATTAAGTTGTTGATGTGGA
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
GCAAGATCTAGgtaatatatttcacatctgctgtattggaacaaacactttgattttacattga
Q D L E

. . . . .
atcctacataaagatatcttggttaaccaacttttagatgtactagtctatcatggacac


. . . . .
ttttgttatacttaattaagccacttttagaaaaatagctcaagtgttaatcaaggttta

. . . . .
cttgaaaattattgaaactgttaatccatctatatattttaattaatggtttaactaatgat
```

.
tttgaggatgagggagtcttggtgtactctaaatgtattatttcaggccaggcatagtgg

. . .
ctcacgcctgt

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

.
tctaaaattatactattcctatgactaaacctttgcatatatcttttatctccctaggat
.
atatttctaaaactagcattgttgactgaaagtgtaaatacgtgttaaggtgtttgctac
.
ataatgccatatttccttttaggaaactaagctactttggatttccaccaacactgtat
.
tcatgtaccatttttctcttaacctactttattggctctttttaaa  **tttaacagagac**

.
cagaactttgtaattcaacattcatcgttggtgtgtaaattaaacttctccattcctttcag

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														
CATTGAAAGTTCCCAATTGAAAGTTGCAGAATCTGCCAGAGTCCAGCTGCTGCTCATA																			
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      . . . . .
CAGAAGAATTTgtgagtgatccatatgtatctccctaatgactaagacttaacaacatt
      E E F
      |1661

. . . . .
ctggaagagttttatgtaggtattgtcaattaataacctaagggaagaaatctagaaaa
. . . . .
caatcacagttctgtgtaatttaatttcgattactaatttctgaaaatttagatctagat
. . . . .
aaagctatagtggtgattatttatgtatatattacttgagaaaataattattaaatatta
. . . . .
gtggaagctatactttgggtatgatataggactttcgaattggaattttcctttctat
. . . . .
ctgtaaaagca

```

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

```
. . . . .
gagacttcaggtgtcttagaattttttaaatgtaccctttctgagaaaaacagagactta
. . . . .
aagctaggataactgggtattctatttttttttttttttttttttttacctccagcctgggt
. . . . .
gacagagcaagactctgtctaaaaaaaaaaaaaaaaaaTcactttaaatagttccagg
. . . . .
acacgtgtagaacgtgcaggattgctacataggtaaacatatgccatggtggaataacta
. . . . .
gtattctgagctgtgtgctagaggtaactcatgataatggaatatttgatttaatttcag

      |4991      |5001      |5011      |5021      |5031      |5041
ATGCTCGTGTACAAGTTTGCCAGAAAACACCACATCACTTTAACTAATCTAATTACTGAA
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

. . . . .
tctgctgcataaaaccacatgaggcgaggcacggtggcgcatgcctgtaatcgcagcact
. . . . .
ttgggaggccgaggcgggcagatcacgagattaggagatcgagaccatcctggccagcat
. . . . .
ggtgaaaccccgctctctactaaaaataaaaaattagctgggtgtggtcgctgcgcct
. . . . .
gtagtcccagctactcgtgaggctgaggcaggagaatcacttgaaccggggagatggagg
. . . . .
ttgcagtgagccgagatcatgccactgc
```

Exon 17 | Start: 154033 | End: 154110 | Length: 77
BE AWARE: Flanking intron is shared with the following exon

```
. . . . .
tataatggagatctatagctagccttggcgtctagaagatgggtgttgagaagagggagt
. . . . .
ggacagatatttcctctggtcttaacttcatatcagcctcccctagacttccaaatatcc
. . . . .
atacctgctggttataattagtggtgttttcagcctctgattctgtcaccaggggttta
. . . . .
gaatcatatccagattgatcttgggagtgtaaaaaactgaggctcttttagcttcttag
. . . . .
gacagcacttcctgattttgttttcaacttctaatacctttgagtgtttttcattctgcag
. . . . .
|5081 |5091 |5101 |5111 |5121 |5131
ATGCTGAGTTTGTGTGTGAACGGACACTGAAATATTTTCTAGGAATTGCGGGAGGAAAAT
A E F V C E R T L K Y F L G I A G G K W
|1701 |1711
. . . . .
|5141 |5151 . . . . .
GGGTAGTTAGCTATTCTGtaagtataataactatttctcccctcctccctttaacacctc
V V S Y F W
. . . . .
agaattgcatttttacacctaacgtttaacacctaagggtttttgtgatgctgagtctga
. . . . .
gttaccataaaggctctttaattgtaataactaaactacttttatctttaatatcactttgtt
. . . . .
cagataagctggtgatgctgggaaaatgggtctcttttataactaataggacctaacttg
. . . . .
ctcctagcaatgtagcatatgagctag
```

Exon 18 | Start: 154611 | End: 154651 | Length: 40
BE AWARE: Flanking intron is shared with the previous exon

```
. . . . .
ggatttatttaatagtcggcaggaatccatgtgcagcaggcaaacttataatgtttaaat
. . . . .
taaacatcaactctgtctccagaaggaaactgctgctacaagccttattaaagggtgtg
. . . . .
gcttttagagggaaggacctcctctgtcattcttcctgtgctcttttgtgaatcgctga
. . . . .
cctctctatctccgtgaaaagagcacgttcttctgctgtatgtaacctgtcttttctatg
. . . . .
          |5161      |5171      |5181      |5191      .
atctcttttagGGGTGACCCAGTCTATTAAAGAAAGAAAAATGCTGAATGAGgtaagtact
          V T Q S I K E R K M L N E
          |1721                        |1731
. . . . .
tgatgtttacaaactaaccagagatattcattcagtcatatagttaaaaatgtatttgctt
. . . . .
cctccatcaatgcaccactttccttaacaatgcacaaattttccatgataatgaggatc
. . . . .
atcaagaattatgcaggcctgcactgtggctcatacctataatcccagcgctttggggagg
. . . . .
ctgaggcgcttggtacacctgatgtcgggagttcaagaccagcctgaccaacatggagaa
. . . . .
accccgtttctactaaaaatacaaaattagccgggcttggtggcacttgcc
```

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

```
. . . . .
gcattcaaaagattctcctgcctcagcctcccaagtagctgggattacaggtgcctgcc
. . . . .
ccacgccaactaatttttgtatttttagtagagatgaggtttcaccatgttggtcaga
. . . . .
ctggtgtcgaactcctgacctcaagtgatctgcctgcctcagtctcccaaagtgctagga
. . . . .
ttacaggggtgagccactgcgtctggcctgaatgccttaaataatgacgtgtctgctccac
. . . . .
ttccattgaaggaagcttctctttcttcttatcctgatgggttggtttggtttctttcag

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

      |5261      |5271      . . . . .
GCAAGAGAATCCCAGGACAGAAAGgtaaagctccctccctcaagttgacaaaaatctcac
A R E S Q D R K

. . . . .
cccaactctgtattccactcccctttgcagagatgggccgttcattttgtaagactt
. . . . .
attacatacacacagtgctagatactttcacacaggttcttttttcaactcttccatcc
. . . . .
caaccacataaataagtattgtctctactttatgaatgataaaactaagagatttagaga
. . . . .
ggctgtgtaatttggattcccgctctcggttcagatcttagctgataagtggaagagctg
. . . . .
ggactttaagcagatgagaatcta
```

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

```
. . . . .
cttggcctgattggtgacaaaagtgagatgctcagtccttgaatgacaaagaatgcctgt

. . . . .
agagtgcagggtcaactacatatgcacttcaagaagatcttctgaaatccagtagtgttct

. . . . .
ggacattggactgcttgtcctgggaagtagcagcagaaatcatcaggtggtgaacagaa

. . . . .
gaaaaagaaaagctcttcctttttgaaagtctgttttttgaataaaagccaatattcttt

. . . . .
tataactagattttccttctctccattcccctgtccctctctctcctctcttcttccag

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

. . . . .
agcctgggagaaccccagagttccagcaccagcctttgtcttacatagtgagattava

. . . . .
agcaagatcccacgatgggggttcctcagattgctgaaatgttctagaggctattctatt

. . . . .
tctctaccactctccaaacaaaacagcacctaaatgttatcctatggcaaaaaaaacta

. . . . .
taccttgcccccttctcaagagcatgaagggtggttaatagttaggattcagtatgttat


. . . . .
gtgttcagatggcggttgagctgctgttagtgccaacatgttagtgagaaaatatc
```

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

.
attaatggaattagatctttgattttttttctttcaagcattttatttgagagactat


.
caaaccttataccaagtggccttatggagactgataaccagagtacatggcatatcagt

.
gcaaattgacttaaaatccatacccctactattttaagaccattgtcctttggagcagag

.
agacagactctccattgagaggtcttgctataa  **gcttcatccggagagtgtag**ggtag

.
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 
TCACCCTTGGCACAgtaagtattgggtgccctgtcagagagggaggacacaatat **ctct**
T L G T
|1801

.
cctgtgagcaagactggcacctgtcagtcctatggatgccctactgtagcctcagaag

.
tcttctctgtcccacatacctgtgccaaaagactccatctgtaagggatgggtaaggattt

.
gagaactgcacatattaaatatactgaggggaagactttttccctctaactctttttcca

.
tatgtccctccccctcctctctgtgactgccccagcatactgtgtttcaacaaatcatca

.
agaaatgatgggct

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

.
ccaggagtttgagaccagcctgggcaacatggcaaaaccctgtctctacaaaaatacaa

.
aaaaattagcca**gggtgggtggtacgtgtctgtag**ttccagctacttaggaggctgagat

.
ggaaggattgcttgagcccaggaggcagaggtggcagtgagctgagatcacaccactgca

.
ctccagcctgggtgacagagcaagaccctgtctcaaaaacaaacaaaaaaatgatgaag

.
tgacagttccagtagtcctactttgacactttgaatgctctttccttctgaggatccag

 |5411 |5421 |5431 |5441 |5451 |5461
GGTGTCCACCCAATTGTGGTTGTGCAGCCAGATGCCCTGGACAGAGGACAATGGCTTCCAT
G V H P I V V V Q P D A W T E D N G F H
 |1811 |1821

.
Ggtaaggatgcctgcatgtacctgtgctatatggggtccttttgcaggggttgggtttatc
A

.
actcattacctggtgcttgagtagcacagttcttggcacattttaaatatttgttgaatg

.
aatggctaaaatgtctttttgatgtttttattgttatttgttttatattgtaaaagtaat


.
acatgaact**gttccatgggtgggagtaag**atatgaatgttcacacaaaacataaat

.
caaggccgggcatggtggctcatgcctataattccagcactttgggaggtcaagatggag

.
g


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

.
taaaaatacaaaaattagctgggtgtgatggcatgtgcctgtaattccagctactcagga
.
ggcagagacaggagaattgcttgaaccaggaggcggagggttgatgagccgagattgcg
.
ccatcacactctagcctcggcgacagagcaagactccgtctcaaaaaaaaaaaaaaaaa
.
ttagcttctacctcattaatcctaagaactcatacaaccaggaccctggagtcgattgat

. 
tagagccttagtccaggagaatgaattgacactaatctctgcttggttctctgtctccag

|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
CACTCTACCACTGCCAGGAGCTGGACACCTACCTGATACCCAGATCCCCACAGCCACT
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
ACTGACTGCAGCCAGCCACAGGTACAGAGCCACAGGACCCCAAGAATGAGCTACAAAGT
*

|*61 |*71 |*81 |*91 |*101 |*111
GGCCTTTCCAGGCCCTGGGAGCTCCTCTCACTCTTCAGTCCTTCTACTGTCCTGGCTACT

|*121 |*131 |*141 |*151 |*161 |*171
AAATATTTTATGTACATCAGCCTGAAAAGGACTTCTGGCTATGCAAGGGTCCCTTAAAGA

|*181 |*191 |*201 |*211 |*221 |*231
TTTTCTGCTTGAAGTCTCCCTTGAAATCTGCCATGAGCACAAAATTATGGTAATTTTC

|*241 |*251 |*261 |*271 |*281 |*291
ACCTGAGAAGATTTTAAAACCATTTAAACGCCACCAATTGAGCAAGATGCTGATTCATTA

*301	*311	*321	*331	*341	*351
TTTATCAGCCCTATTCTTTCTATTTCAGGCTGTTGTTGGCTTAGGGCTGGAAGCACAGAGT					
*361	*371	*381	*391	*401	*411
GGCTTGGCCTCAAGAGAATAGCTGGTTTCCCTAAGTTTACTTCTCTAAAACCTGTGTTT					
*421	*431	*441	*451	*461	*471
ACAAAGGCAGAGAGTCAGACCCTTCAATGGAAGGAGAGTGCTTGGGATCGATTATGTGAC					
*481	*491	*501	*511	*521	*531
TTAAAGTCAGAATAGTCCTTGGGCAGTTCTCAAATGTTGGAGTGGAACATTGGGGAGGAA					
*541	*551	*561	*571	*581	*591
ATTCTGAGGCAGGTATTAGAAATGAAAAGGAAACTTGAAACCTGGGCATGGTGGCTCACG					
*601	*611	*621	*631	*641	*651
CCTGTAATCCCAGCACTTTGGGAGGCCAAGGTGGGCAGATCACTGGAGGTCAGGAGTTTCG					
*661	*671	*681	*691	*701	*711
AAACCAGCCTGGCCAACATGGTGAAACCCCATCTCTACTAAAAATACAGAAATTAGCCGG					
*721	*731	*741	*751	*761	*771
TCATGGTGGTGGACACCTGTAATCCCAGCTACTCAGGTGGCTAAGGCAGGAGAATCACTT					
*781	*791	*801	*811	*821	*831
CAGCCCGGGAGGTGGAGGTTGCAGTGAGCCAAGATCATACCACGGCACTCCAGCCTGGGT					
*841	*851	*861	*871	*881	*891
GACAGTGAGACTGTGGCTCAAAAAAAAAAAAAAAAAAGGAAAATGAACTAGAAGAGAT					
*901	*911	*921	*931	*941	*951
TTCTAAAAGTCTGAGATATATTGCTAGATTTCTAAAGAATGTGTTCTAAACAGCAGAA					
*961	*971	*981	*991	*1001	*1011
GATTTTCAAGAACCGGTTTCCAAAGACAGTCTTCTAATTCCTCATTAGTAATAAGTAAAA					
*1021	*1031	*1041	*1051	*1061	*1071
TGTTTATTGTTGTAGCTCTGGTATATAATCCATTCCTCTTAAAAATATAAGACCTCTGGCA					
*1081	*1091	*1101	*1111	*1121	*1131
TGAATATTTTATATCTATAAAATGACAGATCCCACCAGGAAGGAAGCTGTTGCTTTCTTT					
*1141	*1151	*1161	*1171	*1181	*1191
GAGGTGATTTTTTCTTTGCTCCCTGTTGCTGAAACCATAACAGCTTCATAAATAATTTT					

|*1201 |*1211 |*1221 |*1231 |*1241 |*1251
 GCTTGCTGAAGGAAGAAAAAGTGTTCATTAACCCATTATCCAGGACTGTTTATAGCT

|*1261 |*1271 |*1281 |*1291 |*1301 |*1311
 GTTGGAAGGACTAGGTCTTCCTAGCCCCCAGTGTGCAAGGGCAGTGAAGACTTGATT

|*1321 |*1331 |*1341 |*1351 |*1361 |*1371
 GTACAAAATACGTTTGTAAATGTTGTGCTGTTAACTGCAAATAAACTTGGTAGCAA

|*1381
 CACTTCCAccatgaatgactgttcttgagacttaggccagccgactttctcagagccttt

.
 tcactgtgcttcagtctccactctgtaaaatgggggtaatgatagtatctacctcctag

.
 gatttattgaggcagcttaaataccttttgatcttctgttgctgcaaaacaaattgtt

.
 gcaaggtcagaagtctgaggtggctcaactgtttctttgtttcaggtttcatgaggccaa

.
 aataaaggtgttcgcagggcggttcccttctagaggctctgggtccttgagttctagg

. .
 actaagat

LRG Parser: Version: 1.3, Version Date: 11/02/2015
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Writer: Version: 1.3, Version Date: 11/02/2015
Control: Version: 1.3, Version Date: 11/02/2015