

Gene: ABL1 - Sequence: NG_012034.1
 Transcript: NM_007313.2 - Protein: NP_009297.2
 Date : February 20, 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 MIDDLE base of codon
 4th line: Amino acid numbering. Numbered on 1st and increments of 10

Exon 1 | Start: 5001 | End: 5575 | Length: 574

```

. . . . .
ccccaaggtggctcccgcgagcctctaatgccctgacttcttccaatgtcacctacggcc

. . . . .
cccttagtctcagctcagccaaaaactttaatgcaaaggaaaagtctggattggttcac

. . . . .
aggccttttaaaaagcggacttaaaagttgctggcaatgcattccttttcgtcagagtcg

. . . . .
aggggcaaactcgctgaaatctgggtgacccgtgtccttttccggagagcaaagcagagaa

. . . . .
gcgagagcggccactagttcggcaggaaatttggtggaagatgaagaagctaagataggg

|-439      |-429      |-419      |-409      |-399      |-389
GGTTGGTGACTTCCACAGGAAAAGTTCTGGAGGAGTAGCCAAAGACCATCAGCGTTTCCT

|-379      |-369      |-359      |-349      |-339      |-329
TTATGTGTGAGAATTGAAATGACTAGCATTATTGACCCTTTTCAGCATCCCCTGTGAATA

|-319      |-309      |-299      |-289      |-279      |-269
TTTCTGTTTAGGTTTTTCTTCTTGAAAAGAAATTGTTATTCAGCCCGTTTAAACAAATC

|-259      |-249      |-239      |-229      |-219      |-209
AAGAAACTTTTGGGTAACATTGCAATTACATGAAATTGATAACCGCGAAAATAATTGGAA

|-199      |-189      |-179      |-169      |-159      |-149
CTCCTGCTTGCAAGTGTCAACCTAAAAAAGTGCTTCCTTTTGTTATGGAAGATGTCTTT

|-139      |-129      |-119      |-109      |-99       |-89
CTGTGATTGACTTCAATTGCTGACTTGTGGAGATGCAGCGAATGTGAAATCCACGTATA

```


.
 atgaaataggaatgtgtaatggttgaaacacaaatatttttgcttctgagaataaaacta

 attttttctcccaattttctcttcctttttctttttctgttccccctttctcttcag

 |141 |151 |161 |171 |181 |191
 AAGCCCTTCAGCGGCCAGTAGCATCTGACTTTGAGCCTCAGGGTCTGAGTGAAGCCGCTC
 E A L Q R P V A S D F E P Q G L S E A A
 |51 |61

 |201 |211 |221 |231 |241 |251
 GTTGAACTCCAAGGAAAACCTTCTCGCTGGACCCAGTGAAAATGACCCCAACCTTTTCG
 R W N S K E N L L A G P S E N D P N L F
 |71 |81

 |261 |271 |281 |291 |301 .
 TTGCACTGTATGATTTTGTGGCCAGTGGAGATAACACTCTAAGCATAACTAAAGgtaaaa
 V A L Y D F V A S G D N T L S I T K
 |91 |101

 gggttgtgggcagctagtggtggtgcaggagatagaaatctgggaattgcggtttgacc

 taccaccctttgctcgttaaaggagcagctttgaaatctggactgcagggatatccaaaa

 caacaactgcatgtttctaaggagtcgactctccttagaggagttcttgtacaatagcc

 ctgggcaaaaacagaacttgccctattttttatactgaaaaggacagctggacaaaatac

 tgaacgcaatttttcccctaagaaaaagcattatttccctaaaatgtcttatat

Exon 4 | Start: 145921 | End: 146216 | Length: 295

.
 ctaagaaaaagcattatttccctaaaatgtcttatattaggaacagagcacttgaataaa

 cataattgatttataaaaaactgaggctatacacttacctatctgttcagtacaaacagga

```

. . . . .
agcttcaaatgtaaactgaattctcatcacacttataaatgcataatctttatgtggactt

. . . . .
gttaaaatgaaattggtatttaggaatttgagatttttagtagttacacaagaatcaat

. . . . .
gaaaaagaacgaagctggtttccaaagctgatatgtctgatttggttcctttcttctcag

|311      |321      |331      |341      |351      |361
GTGAAAAGCTCCGGGTCTTAGGCTATAATCACAATGGGGAATGGTGTGAAGCCCAACCA
G E K L R V L G Y N H N G E W C E A Q T
                        |111                        |121

|371      |381      |391      |401      |411      |421
AAAATGGCCAAGGCTGGGTCCCAAGCAACTACATCAGCCAGTCAACAGTCTGGAGAAAC
K N G Q G W V P S N Y I T P V N S L E K
                        |131                        |141

|431      |441      |451      |461      |471      |481
ACTCCTGGTACCATGGGCCTGTGTCCCGCAATGCCGCTGAGTATCTGCTGAGCAGCGGGA
H S W Y H G P V S R N A A E Y L L S S G
                        |151                        |161

|491      |501      |511      |521      |531      |541
TCAATGGCAGCTTCTTGGTGCGTGAGAGTGAGAGCAGTCCTGGCCAGAGGTCCATCTCGC
I N G S F L V R E S E S S P G Q R S I S
                        |171                        |181

|551      |561      |571      |581      |591      |601
TGAGATACGAAGGGAGGGTGTACCATTACAGGATCAACACTGCTTCTGATGGCAAGgtag
L R Y E G R V Y H Y R I N T A S D G K
                        |191                        |201

. . . . .
gggacccttggcagggggcgctgatgggccagggcaggggaaccagaggtcctgctgtc

. . . . .
ggattgataaattattgcaagaaagctcaaccaagaagatgtttaagaatctttcaggt

. . . . .
gggagtcattccattagccttatgaagaccctttattgaggatccgttctgtgatattac

. . . . .
aagttcctgggactgggtatgattctcttattgtcttgctagagttttgttggtagcaagt

```

.
tacttaaaataggaggaatatctgttgggttttggacacattttttacaataagat

Exon 5 | Start: 153883 | End: 154155 | Length: 272

.
gaacgggaagcgagaactgggcacggaagatgagggagtgggagatttcaggcagaggga
.
gcagcagcaggtacagaggccctgaggccttttattgtgtcttttgcttgagcgagtaa
.
cttagagcacacgtagagaaagacagcagaagtgatcttctaaacactctgtcctgtgtg
.
gagagctccttatgtgagattttgctgtgtagtgaattaaggctcagccaaactggctca
.
cgtgagctctttgagcttgcctgtctctgtgggctgaaggctgttcctgtttccttcag

 |611 |621 |631 |641 |651 |661
CTCTACGTCTCCTCCGAGAGCCGCTTCAACACCCTGGCCGAGTTGGTTCATCATCATTCA
L Y V S S E S R F N T L A E L V H H H S
 |211 |221

 |671 |681 |691 |701 |711 |721
ACGGTGGCCGACGGGCTCATCACACGCTCCATTATCCAGCCCCAAAGCGCAACAAGCCC
T V A D G L I T T L H Y P A P K R N K P
 |231 |241

 |731 |741 |751 |761 |771 |781
ACTGTCTATGGTGTGTCCCCAACTACGACAAGTGGGAGATGGAACGCACGGACATCACC
T V Y G V S P N Y D K W E M E R T D I T
 |251 |261

 |791 |801 |811 |821 |831 |841
ATGAAGCACAAGCTGGGCGGGGGCCAGTACGGGGAGGTGTACGAGGGCGTGTGGAAGAAA
M K H K L G G G Q Y G E V Y E G V W K K
 |271 |281

 |851 |861 |871
TACAGCCTGACGGTGGCCGTGAAGACCTTGAAGgtaggctgggactgccgggggtgccca
Y S L T V A V K T L K
 |291

.
 ggggtacgtggggcaaggcgtctgctggcattaggcgaatgcatctgcctggaagtctacct

 cctgcctgctgtccgagggttcattggcgccacgaattgacttttccgtcttatatca

 ttcctgtgtctttgtaggagtgggaatcattctcatagtccgagtgtgtttccacatatgg

 tgagagctgacaagcatggaggggttttggtgtaaaaagattagtcatttgagaggttt

 tctcattttatggcaaggttcttttaagccgt

Exon 6 | Start: 163249 | End: 163333 | Length: 84

.
 tggggaagcacatgtggcctgcctagcaggcaccagaagcaggttgctggcacatgcaag

 ccagctttgccctgttgctggggagaattgaaaagtttgcccccaggggaaaattc

 tttctgccatcaagttgctggctcagctgtcatggaacctgtctgcagcaatgtggctgtc

 acaaaacgcagcccaggacgagtatgcgctgaagctccattttgcattaactagtcaagt

 acttaccactgaaaagcacttcctgaaataatttcaccttcgttttttccttctgcag

881	891	901	911	921	931
GAGGACACCATGGAGGTGGAAGAGTTCTTGAAAGAAGCTGCAGTCATGAAAGAGATCAAAA					
E D T M E V E E F L K E A A V M K E I K					
		301		311	

941	951	961
CACCCTAACCTGGTGCAGCTCCTTGgtgagtaagcccggggctctgaagagagggtctcg								
H P N L V Q L L								
321								

.

cgccgcacccccagggtgacacaggcgctggggaagacgcacgggaggctcactgcacaa

 aacctcgttgaatatattgtgctctgccgacgttcagccgagggtaaaatgaggcctgta

 tgggatgggtgtgtgcgtgtgtgcacatatgcacatgtatgtatgagaggagaaatgtga

 ttattttaagtggatacctaaaagcagtcaaatacgaatctgaaattagtttctgaaact

 tgggcattttccagagttttctcac

Exon 7 | Start: 163980 | End: 164157 | Length: 177

.
 cagggtgaaactgacgggtggtgaaggtcatttgagggtggggccaggctctgcgtctgaatt

 ctgtggcagcctctccctgcgtaaattcaagttcactggcttgagaagaagaaaagagcc

 tggccatgtccctccacacgagcacagtcctcaggatgcagggtgcttgggaccatgttgg

 aagttggggccaggactgaggagcagagtcagaatccttcagaaggctttttcttttagac

 agttgtttgttcagttgggagcggagccacgtgttgaagtcctcgttgtcttgttggcag

971	981	991	1001	1011	1021
GGGTCTGCACCCGGGAGCCCCGTTCTATATCATCACTGAGTTCATGACCTACGGGAACC					
G V C T R E P P F Y I I T E F M T Y G N					
	331				341

1031	1041	1051	1061	1071	1081
TCCTGGACTIONAGGGAGTGCAACCGGCAGGAGGTGAACGCCGTGGTGCTGCTGTACA					
L L D Y L R E C N R Q E V N A V V L L Y					
	351				361

1091	1101	1111	1121	1131	1141
TGGCCACTCAGATCTCGTCAGCCATGGAGTACCTGGAGAAGAAAACTTCATCCACAGgt					
M A T Q I S S A M E Y L E K K N F I H R					

|371

|381

.
aggggcctggccaggcagcctgcgccatggagtcacagggcgtggagccgggcagccttt
.
tacaaaaagccccagcctaggaggtctcagggcgagcttctaactcagtgtggaac
.
acattggaccttgaacaaaggcaaacactaggctcctggcaaagccagctttgggcatg
.
catccagggtctaaattcagccaggcctagactctggaccagtgaggagcagctaatacccg
.
agtaaggaatatttcatttttgaaccattttgggctaagtgggaatattaaatgaagt

Exon 8 | Start: 165988 | End: 166172 | Length: 184

.
gccattattatcgctctcattttacggatgaggtactgagtcacagggttaacttg
.
ctccagggtcatgaggccaggagccgctccagcaccagcctctcccatgttgggatc
.
tcagggtgtgtttgctgagaggctggcactgtgttaattgccgtgggcattaatacaaac
.
ttccagggcattggactcaatctttccattgtcagcattgcacctttgctcagcagtggt
.
ggatttgtgaagtggaagggtggccaggagctctcatgggtgaacattttcctttcttag

1151	1161	1171	1181	1191	1201
AGATCTTGCTGCCCCGAAACTGCCTGGTAGGGGAGAACCCTTGGTGAAGGTAGCTGATTT					
D	L	A	A	R	N
C	L	V	G	E	N
H	L	V	K	V	A
D	F				
		391			401

1211	1221	1231	1241	1251	1261
TGGCCTGAGCAGGTTGATGACAGGGGACACCTACACAGCCCATGCTGGAGCCAAGTTCCC					
G	L	S	R	L	M
T	G	D	T	Y	T
A	H	A	G	A	K
F	P				
		411			421

	1271	1281	1291	1301	1311	1321
CATCAA	TGGACTGCAC	CCGAGAGCCTGG	CCCTACAACAAG	TCTCCATCAAG	TCCGACGT	
I	K	W	T	A	P	E
S	L	A	Y	N	K	F
S	I	K	S	D	V	
		431			441	

CTGGGgtaagggctgctgctgcactgaagtggccttcctgactacaggagggtttttt
W

ctgcctctttcttgctcttcctttcttttcttcctttcttttggttttttgagacgga

gtctcactctgtcaccaggctggagtgcagtggtgcaatcttggtcattgcagcctct

ccctcccggttcaagcgattctcctgtctcagcatcttgagtagctgggattataggca

cccgccaccacaccagctaatttttggtatttttagtagagatggggtttcaccatgtt

ggcca

Exon 9 | Start: 169535 | End: 169687 | Length: 152

taatttttgtagtttttagtagagatgggggttcgccatgttggccagggtggtcttgaat

tcctgacctcaaataatcctcccacttcagcctcccaaagtgctgggattacaggcgtga

gccaccgcacccagccttgctcctggctcttgatgataaagagcctggtaaaatgtcaga

gcctgggctgctgctggggccatcccttctgaggtctgctgcaaaggtaactgattttaa

atgtagttagtgaaatgctacacatcttgaacagcctttctcttcggttttctttcag

1331	1341	1351	1361	1371	1381
CATTTG	GAGTATTG	CTTTGGG	AAATTG	CTACCTAT	GGCATG
CCCC	CTTAC	CCGGGA	ATTG		

A F G V L L W E I A T Y G M S P Y P G I
 |451 |461

 |1391 |1401 |1411 |1421 |1431 |1441
 ACCTGTCCCAGGTGTATGAGCTGCTAGAGAAGGACTACCGCATGGAGCGCCAGAAGGCT
 D L S Q V Y E L L E K D Y R M E R P E G
 |471 |481

 |1451 |1461 |1471
 GCCCAGAGAAGGTCTATGAACTCATGCGAGCATgtaagccttcctcagcctgttctcag
 C P E K V Y E L M R A
 |491

 agtatatgtgggcattccaggaaattcaactgtgcaggagtgtgtacacaaagttgaaag

 tttttccatgagctctctccattccagttcttcagatgcagctaattgtagccatttgcta

 cctattgacctttatttacagataaatagtatgtgcgtgacttgtcttttaaagcaaaaa

 tgggtattgatagataccaaacctgggtgtattcctaaatacagattcctgggccctgctt

 tcacagacattctgctatagtagctaagctcat

Exon 10 | Start: 171188 | End: 171277 | Length: 89

.
 tagtaattttctacacctactagagcgggactgggaaaaatatatttgtaaatgcagttc

 ttgctgtcactgtctctctgggggttttacaatccatattcctgccagcatctaactctt

 ttcaaattcttaatgtctataacaggacatgatgacattcatcgttttgacttgttgacag

 caaaagatgggttagcaggattggaatgttgctttcattctagacttttccttgagaactg

 ctagccccgtattgctagccagatctcatggatgatctgacttgggtttcatctgtccag

AAGTGGAAAAGGAGCTGGGGAAACAAGGCGTCCGTGGGGCTGTGAGTACCTTGCTGCAGG
 E V E K E L G K Q G V R G A V S T L L Q
 |531 |541

|1631 |1641 |1651 |1661 |1671 |1681
 CCCCAGAGCTGCCCACCAAGACGAGGACCTCCAGGAGAGCTGCAGAGCACAGAGACACCA
 A P E L P T K T R T S R R A A E H R D T
 |551 |561

|1691 |1701 |1711 |1721 |1731 . . .
 CTGACGTGCCTGAGATGCCTCACTCCAAGGGCCAGGGAGAGAGCGgtaagtcccccgctt
 T D V P E M P H S K G Q G E S
 |571

.
 cccccaacccactgctcttccttcctgccagaggctacattcaggccatcataggcc

 aacgggaagctgtgaatggagcccgacagaagggcagccatggcctttgtcaatggttc

 agcttcggaaggaggaaggttctcctctcccccactgcctcctatcccctccctctgaga

 gtccccgaggagcataggctccagcagtgagttcagtcctgtaggcagaggtgcttctga

 agcccgccaaggagctagcccatctcccacattaccgcggca

Exon 12 | Start: 175089 | End: 178795 | Length: 3706

.
 ggggtcaaaacctgtggctctcctgccagccagctagccgagaggcctatgaggagctctg

 ggaataaggggctgtgtcccacagtggggaagggaacaatgggccattatgcacaggagat

 aagaagggatgacctttgacaattttttgtttgtttgtttgtttgtttgagatggagt

 ctcaactctgtctcctgggctggagtgacagcagtggcactctgcctcccggttcaagcga

ttctcctctgtcagcctctagagttgtctggagttgtcagctcttccccttgcgtttcag

 |1741 |1751 |1761 |1771 |1781 |1791
ATCCTCTGGACCATGAGCCTGCCGTGTCTCCATTGCTCCCTCGAAAAGAGCGAGGTCCCC
D P L D H E P A V S P L L P R K E R G P
 |581 |591

 |1801 |1811 |1821 |1831 |1841 |1851
CGGAGGGCGGCCTGAATGAAGATGAGCGCCTTCTCCCCAAGACAAAAAGACCAACTTGT
P E G G L N E D E R L L P K D K K T N L
 |601 |611

 |1861 |1871 |1881 |1891 |1901 |1911
TCAGCGCCTTGATCAAGAAGAAGAAGAAGACAGCCCCAACCCCTCCCAAACGCAGCAGCT
F S A L I K K K K K T A P T P P K R S S
 |621 |631

 |1921 |1931 |1941 |1951 |1961 |1971
CCTTCCGGGAGATGGACGGCCAGCCGGAGCGCAGAGGGGCGGCGAGGAAGAGGGCCGAG
S F R E M D G Q P E R R G A G E E E G R
 |641 |651

 |1981 |1991 |2001 |2011 |2021 |2031
ACATCAGCAACGGGGCACTGGCTTTCACCCCCTTGGACACAGCTGACCCAGCCAAGTCCC
D I S N G A L A F T P L D T A D P A K S
 |661 |671

 |2041 |2051 |2061 |2071 |2081 |2091
CAAAGCCCAGCAATGGGGCTGGGGTCCCCAATGGAGCCCTCCGGGAGTCCGGGGGCTCAG
P K P S N G A G V P N G A L R E S G G S
 |681 |691

 |2101 |2111 |2121 |2131 |2141 |2151
GCTTCCGGTCTCCCCACCTGTGGAAGAAGTCCAGCACGCTGACCAGCAGCCGCCTAGCCA
G F R S P H L W K K S S T L T S S R L A
 |701 |711

 |2161 |2171 |2181 |2191 |2201 |2211
CCGGCGAGGAGGAGGGCGGTGGCAGCTCCAGCAAGCGCTTCCTGCGCTCTTGCTCCGCCT
T G E E E G G G S S S K R F L R S C S A
 |721 |731

 |2221 |2231 |2241 |2251 |2261 |2271
CCTGCGTTCCCCATGGGGCCAAGGACACGGAGTGGAGGTCAGTCACGCTGCCTCGGGACT
S C V P H G A K D T E W R S V T L P R D
 |741 |751

2281	2291	2301	2311	2321	2331
TGCAGTCCACGGGAAGACAGTTT	GACTCGTCCACATTTGGAGGGC	CACAAAAGTGAGAAGC			
L Q S T G R Q F D S S T F G G H K S E K					
761			771		

2341	2351	2361	2371	2381	2391
CGGCTCTGCCTCGGAAGAGGGCAGGGGAGAACAGGTCTGACCAGGTGACCCGAGGCACAG					
P A L P R K R A G E N R S D Q V T R G T					
781			791		

2401	2411	2421	2431	2441	2451
TAACGCCTCCCCCAGGCTGGTGA	AAAAAGAAATGAGGAAGCTGCTGATGAGGTCTTCAAAG				
V T P P P R L V K K N E E A A D E V F K					
801			811		

2461	2471	2481	2491	2501	2511
ACATCATGGAGTCCAGCCCGGGCTCCAGCCCGCCCAACCTGACTCCAAAACCCCTCCGGC					
D I M E S S P G S S P P N L T P K P L R					
821			831		

2521	2531	2541	2551	2561	2571
GGCAGGTCACCGTGGCCCTGCCTCGGGCCTCCCCACAAGGAAGAAGCTGGAAAGGGCA					
R Q V T V A P A S G L P H K E E A G K G					
841			851		

2581	2591	2601	2611	2621	2631
GTGCCTTAGGGACCCCTGCTGCAGCTGAGCCAGTGACCCCCACCAGCAAAGCAGGCTCAG					
S A L G T P A A A E P V T P T S K A G S					
861			871		

2641	2651	2661	2671	2681	2691
GTGCACCAGGGGGCACCAGCAAGGGCCCCGCGAGGAGTCCAGAGTGAGGAGGCACAAGC					
G A P G G T S K G P A E E S R V R R H K					
881			891		

2701	2711	2721	2731	2741	2751
ACTCCTCTGAGTCGCCAGGGAGGGACAAGGGGAAATTGTCCAGGCTCAAACCTGCCCCGC					
H S S E S P G R D K G K L S R L K P A P					
901			911		

2761	2771	2781	2791	2801	2811
CGCCCCCACCAGCAGCCTCTGCAGGGAAGGCTGGAGGAAAGCCCTCGCAGAGCCCGAGCC					
P P P P A A S A G K A G G K P S Q S P S					
921			931		

2821	2831	2841	2851	2861	2871
AGGAGGCGCGCGGGAGGCAGTCCTGGGCGCAAAGACAAAAGCCACGAGTCTGGTTGATG					
Q	E	A	A	G	E
A	V	L	G	A	K
T	K	A	T	S	L
V	D				
941			951		
2881	2891	2901	2911	2921	2931
CTGTGAACAGTGACGCTGCCAAGCCCAGCCAGCCGGGAGAGGGCCTCAAAAAGCCCGTGC					
A	V	N	S	D	A
A	K	P	S	Q	P
G	E	G	L	K	K
P	V				
961			971		
2941	2951	2961	2971	2981	2991
TCCCGGCCACTCCAAAGCCACAGTCCGCCAAGCCGTCGGGGACCCCCATCAGCCCAGCCC					
L	P	A	T	P	K
P	Q	S	A	K	P
S	G	T	P	I	S
P	A				
981			991		
3001	3011	3021	3031	3041	3051
CCGTTCCCTCCACGTTGCCATCAGCATCCTCGGCCCTGGCAGGGGACCAGCCGTCTTCCA					
P	V	P	S	T	L
P	S	A	S	S	A
L	A	G	D	Q	P
S	S				
1001			1011		
3061	3071	3081	3091	3101	3111
CCGCCTTCATCCCTCTCATATCAACCCGAGTGTCTCTTCGGAACCCGCCAGCCTCCAG					
T	A	F	I	P	L
I	S	T	R	V	S
L	R	K	T	R	Q
P	P				
1021			1031		
3121	3131	3141	3151	3161	3171
AGCGGATCGCCAGCGCGCCATCACCAAGGGCGTGGTCCTGGACAGCACCGAGGCGTGT					
E	R	I	A	S	G
A	I	T	K	G	V
V	L	D	S	T	E
A	L				
1041			1051		
3181	3191	3201	3211	3221	3231
GCCTCGCCATCTCTAGGAACTCCGAGCAGATGCCAGCCACAGCGCAGTGCTGGAGGCCG					
C	L	A	I	S	R
N	S	E	Q	M	A
S	H	S	A	V	L
E	A				
1061			1071		
3241	3251	3261	3271	3281	3291
GCAAAAACCTCTACACGTTCTGCGTGAGCTATGTGGATTCCATCCAGCAAATGAGGAACA					
G	K	N	L	Y	T
F	C	V	S	Y	V
D	S	I	Q	Q	M
R	N				
1081			1091		
3301	3311	3321	3331	3341	3351
AGTTTGCTTCCGAGAGGCCATCAACAACTGGAGAATAATCTCCGGGAGCTTCAGATCT					
K	F	A	F	R	E
A	I	N	K	L	E
N	N	L	R	E	L
Q	I				
1101			1111		
3361	3371	3381	3391	3401	3411

G C C C G G C G A C A G C A G G C A G T G G T C C A G C G G C C A C T C A G G A C T T C A G C A A G C T C C T C A G T T
 C P A T A G S G P A A T Q D F S K L L S
 |1121 |1131

|3421 |3431 |3441 |3451 |+11 |+21
 C G G T G A A G G A A T C A G T G A C A T A G T G C A G A G G T A G C A G C A G T C A G G G G T C A G G T G T C A G G
 S V K E I S D I V Q R *
 |1141 |1151

|+31 |+41 |+51 |+61 |+71 |+81
 C C C G T C G G A G C T G C C T G C A G C A C A T G C G G G C T C G C C C A T A C C C G T G A C A G T G G C T G A C A A

|+91 |+101 |+111 |+121 |+131 |+141
 G G G A C T A G T G A G T C A G C A C C T T G G C C C A G G A G C T C T G C G C C A G G C A G A G C T G A G G G C C C T

|+151 |+161 |+171 |+181 |+191 |+201
 G T G G A G T C C A G C T C T A C T A C C T A C G T T T G C A C C G C C T G C C C T C C G C A C C T T C C T C C T C C

|+211 |+221 |+231 |+241 |+251 |+261
 C C G C T C C G T C T C T G T C C T C G A A T T T A T C T G T G G A G T T C C T G C T C C G T G G A C T G C A G T C G

|+271 |+281 |+291 |+301 |+311 |+321
 G C A T G C C A G G A C C C G C C A G C C C C G T C C C A C C T A G T G C C C C A G A C T G A G C T C T C C A G G C C

|+331 |+341 |+351 |+361 |+371 |+381
 A A G T G G G A A C G G C T G A T G T G G A C T G T C T T T T C A T T T T T T C T C T C T G A G C C C C T C C T C

|+391 |+401 |+411 |+421 |+431 |+441
 C C C C G G C T G G G C C T C C T T C T T C C A C T T C T C C A A G A A T G G A A G C C T G A A C T G A G G C C T T G T

|+451 |+461 |+471 |+481 |+491 |+501
 G T G T C A G G C C C T C T G C C T G C A C T C C C T G G C C T T G C C C G T C G T G C T G A A G A C A T G T T C

|+511 |+521 |+531 |+541 |+551 |+561
 A A G A A C C G C A T T T C G G A A G G G C A T G C A C G G G C A T G C A C A C G G C T G G T C A C T C T G C C C T C

|+571 |+581 |+591 |+601 |+611 |+621
 T G C T G C T G C C C G G G T G G G G T G C A C T C G C C A T T C C T C A C G T G C A G G A C A G C T C T T G A T T

|+631 |+641 |+651 |+661 |+671 |+681
 T G G G T G G A A A C A G G G T G C T A A A G C C A A C C A G C C T T T G G G T C C T G G G C A G G T G G G A G C T G

|+691 |+701 |+711 |+721 |+731 |+741
 A A A A G G A T C G A G G C A T G G G G C A T G T C C T T T C C A T C T G T C C A C A T C C C C A G A G C C C A G C T C

|+751 |+761 |+771 |+781 |+791 |+801

TTGCTCTCTTGTGACGTGCACTGTGAATCCTGGCAAGAAAGCTTGAGTCTCAAGGGTGGC
 | +811 | +821 | +831 | +841 | +851 | +861
 AGGTCACTGTCACTGCCGACATCCCTCCCCAGCAGAATGGAGGCAGGGGACAAGGGAGG
 | +871 | +881 | +891 | +901 | +911 | +921
 CAGTGGCTAGTGGGGTGAACAGCTGGTGCCAAATAGCCCCAGACTGGGCCCAGGCAGGTC
 | +931 | +941 | +951 | +961 | +971 | +981
 TGCAAGGGCCCAGAGTGAACCGTCCTTTCACACATCTGGGTGCCCTGAAAGGGCCCTTCC
 | +991 | +1001 | +1011 | +1021 | +1031 | +1041
 CCTCCCCCACTCCTCTAAGACAAAGTAGATTCTTACAAGGCCCTTTCCTTTGGAACAAGA
 | +1051 | +1061 | +1071 | +1081 | +1091 | +1101
 CAGCCTTCACTTTTCTGAGTTCTTGAAGCATTTCAAAGCCCTGCCTCTGTGTAGCCGCC
 | +1111 | +1121 | +1131 | +1141 | +1151 | +1161
 TGAGAGAGAATAGAGCTGCCACTGGGCACCTGCGCACAGGTGGGAGGAAAGGGCCTGGCC
 | +1171 | +1181 | +1191 | +1201 | +1211 | +1221
 AGTCCTGGTCTCTGGCTGCACTCTTGAAGTGGGCGAATGTCTTATTTAATTACCGTGAGTG
 | +1231 | +1241 | +1251 | +1261 | +1271 | +1281
 ACATAGCCTCATGTTCTGTGGGGTGCATCAGGGAGGGTTAGGAAAACCACAAACGGAGCC
 | +1291 | +1301 | +1311 | +1321 | +1331 | +1341
 CCTGAAAGCCTCACGTATTTACAGAGCACGCCTGCCATCTTCTCCCCGAGGCTGCCCA
 | +1351 | +1361 | +1371 | +1381 | +1391 | +1401
 GGCCGGAGCCCAGATACGGGGGCTGTGACTCTGGGCAGGGACCCGGGGTCTCCTGGACCT
 | +1411 | +1421 | +1431 | +1441 | +1451 | +1461
 TGACAGAGCAGCTAACTCCGAGAGCAGTGGGCAGGTGGCCGCCCCTGAGGCTTCACGCCG
 | +1471 | +1481 | +1491 | +1501 | +1511 | +1521
 GGAGAAGCCACCTTCCCACCCCTTCATACCGCCTCGTGCCAGCAGCCTCGCACAGGCCCT
 | +1531 | +1541 | +1551 | +1561 | +1571 | +1581
 AGCTTTACGCTCATCACCTAACTTGTACTTTATTTTCTGATAGAAATGGTTTCCTCTG
 | +1591 | +1601 | +1611 | +1621 | +1631 | +1641
 GATCGTTTTATGCGGTTCTTACAGCACATCACCTCTTTGCCCCGACGGCTGTGACGCAG
 | +1651 | +1661 | +1671 | +1681 | +1691 | +1701
 CCGGAGGGAGGCACTAGTCACCGACAGCGCCTTGAAGACAGAGCAAAGCGCCCACCCAG

+1711	+1721	+1731	+1741	+1751	+1761
GTCCCCGACTGCCTGTCTCCATGAGGTACTGGTCCCTTCCTTTTGTTAACGTGATGTGC					
+1771	+1781	+1791	+1801	+1811	+1821
CACTATATTTTACACGTATCTCTTGGTATGCATCTTTTATAGACGCTCTTTTCTAAGTGG					
+1831	+1841	+1851	+1861	+1871	+1881
CGTGTGCATAGCGTCCTGCCCTGCCCCCTCGGGGGCCTGTGGTGGCTCCCCCTCTGCTTC					
+1891	+1901	+1911	+1921	+1931	+1941
TCGGGGTCCAGTGCAATTTGTTTCTGTATATGATTCTCTGTGGTTTTTTTTGAATCCAAA					
+1951	+1961	+1971	+1981	+1991	.
TCTGTCTCTGTAGTATTTTTTAAATAAATCAGTGTTTACATTAGAAAttcttggcagatt					
.
gcttcggcctgtgatcctgacctgtgttctgagcctgtgcggtggcggggccgggatgt					
.
agtgggttctggtttcccgacggggctggggcccggcatcaggtcttacagagcagaacg					
.
gtggcaggttgccccagctgcccagggcctctgcggcctgggtgcccacagccatcttt					
.
caggcacttgccctgctatgctcggaccctttctgtacccttggcgcttacctgctggca					
.
gcctggccccaccggcatcactgggagtgaggctgtgccaccatacaa					

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