

Gene: ABL1 - Sequence: NG_012034.1
Transcript: NM_007313.2 - Protein: NP_009297.2
Date : March 1, 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: 5575 | Length: 574

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. . . . .
ccccaaagtggtccccgcgagcctctaatgcctgacttcttccaatgtcacctacggcc

. . . . .
cccttagtctcagctcagccaaaaactttaatgcaaaggaaaagtctggattggttcac

. . . . .
aggccttttaaaaagcggacttaaaagttgctggcaatgcattccttttcgtcagagtcg

. . . . .
agggcaaactcgctgaaatctgggtgacccgtgtccttttccggagagcaaagcagagaa

. . . . .
gcgagagcggccactagttcggcaggaaatttggttgaagatgaagaagctaagataggg

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

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

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

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

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

|-139      |-129      |-119      |-109      |-99       |-89
CTGTGATTGACTTCAATTGCTGACTTGTGGAGATGCAGCGAATGTGAAATCCCACGTATA
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|-79      |-69      |-59      |-49      |-39      |-29
TGCCATTTCCCTCTACGCTCGCTGACCGTTCTGGAAGATCTTGAACCCTCTTCTGGAAAG

|-19      |-9       |1        |11       |21       |31       |41
GGGTACCTATTATTACTTTATGGGGCAGCAGCCTGGAAAAGTACTTGGGGACCAAAGAAG
      M  G  Q  Q  P  G  K  V  L  G  D  Q  R  R
      |1                                |11

      |51      |61      |71      |81      |91      |101
GCCAAGCTTGCCTGCCCTGCATTTTATCAAAGGAGCAGGGAAGAAGGAATCATCGAGGCA
      P  S  L  P  A  L  H  F  I  K  G  A  G  K  K  E  S  S  R  H
      |21                                |31

      |111     |121     |131     .      .      .      .
TGGGGGTCCACACTGCAATGTTTTGTGGAACATGgtgagtgccttttcaaaatttctgct
      G  G  P  H  C  N  V  F  V  E  H  E
      |41

      .      .      .      .      .      .      .      .
catggttttcctcatgcattcatcttaggccttcaaggaactttgaacaacagtacttgc

      .      .      .      .      .      .      .      .
gacagttccttccaattccacttaataaatttggtactgtagttatctcttagtggaact

      .      .      .      .      .      .      .      .
ttctttgtataagaaaaagtacttcgtgacttcggctttattcaaaatctatttgagtt

      .      .      .      .      .      .      .      .
gcttatttccttgctgattcctctgctaattcactgttgaccttggacaagccactttac

      .      .      .      .      .      .
tgttccagggttttagtttcctgaggggctggact

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Exon 3 | Start: 145184 | End: 145357 | Length: 173

.
tggatagactgttttaatttgactaaagtcattgaatccatgaattttagaagctcaa
.
actattggggaacaataattaccaccttgagtgaaaatacttaatttccacaagattta
.
gtaaaggaagagtttttaaaaaccacctaatagataatagtatgtacagatgttaagaa
.
atgaaataggaatgtgtaatgttgaaacacaaatatttttgcttctgagaataaaacta
.
attttttctcccaattttctcttcctttttcttttttctgttccccctttctcttcag
|141 |151 |161 |171 |181 |191
AAGCCCTTCAGCGGCCAGTAGCATCTGACTTTGAGCCTCAGGGTCTGAGTGAAGCCGCTC
A L Q R P V A S D F E P Q G L S E A A R
|51 |61
|201 |211 |221 |231 |241 |251
GTTGGAACCTCAAGGAAAACCTTCTCGCTGGACCCAGTGAAAATGACCCCAACCTTTTCG
W N S K E N L L A G P S E N D P N L F V
|71 |81
|261 |271 |281 |291 |301 .
TTGCACTGTATGATTTTGTGGCCAGTGGAGATAACACTCTAAGCATAACTAAAGgtaaaa
A L Y D F V A S G D N T L S I T K G
|91 |101
.
gggttggtgggcagctagtggtggtgagagatagaaatctgggaattgcggtttgacc
.
taccaccctttgctcgttaaaggagcagctttgaaatctggactgcagggatatccaaaa
.
caacaactgcatgtttctaaggagtcgactctccttagaggagttctgtacaatagcc
.
ctgggcaaaaacagaacttgccctattttttatactgaaaaggacagctggacaaaatac
.
tgaacgcaatttttcccctaagaaaaagcattatttccctaaaatgtcttatat

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

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. . . . .
ctaagaaaaagcattatttccctaaaatgtcttatattaggaacagagcacttgaataaa

. . . . .
cataattgatttataaaaaactgaggctatacacttacctatctgttcagtacaaacagga

. . . . .
agcttcaaagttaaactgaattctcatacacttataaatgcataatctttatgtggactt

. . . . .
gttaaaatgaaattggtatttaggaatttgagatttttagtagttacacaagaatcaat

. . . . .
gaaaaagaacgaagctggtttccaaagctgatatgtctgatttggttcctttcttctcag

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

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

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

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

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

. . . . .
gggacccttggcagggggcgctgatgggccagggcaggggaaccagaggtcctgctgtc
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· · · · ·
ggattgataaattattgcaagaaagctcaaccaagaagatgtttaaagaatctttcaggt
· · · · ·
gggagtcattccattagccttatgaagaccctttattgaggatccggttctgtgatattac
· · · · ·
aagttcctgggactggtatgattctcttattgtcttgctagagttttggtgtagcaagt
· · · · ·
tacttaaaataggaggaatatctgttgggttttgacacattttttacaataagat

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

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. . . . .
gaacgggaagcgagaactgggcacggaagatgagggagtgggagatttcaggcagagggga

. . . . .
gcagcagcaggtacagaggccctgaggccttttattgtgtctttttgcttgagcgagtaa

. . . . .
cttagagcacacgtagagaaaagacagcagaagtgatcttctaaacactctgtcctgtgtg

. . . . .
gagagctccttatgtgagattttgctgtgtagtgaattaaggctcagccaaactggctca

. . . . .
cgtgagctctttgagcttgccctgtctctgtgggctgaaggctgttcctgtttccttcag

      |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 S
                        |211                        |221

      |671      |681      |691      |701      |711      |721
ACGGTGGCCGACGGGCTCATCACCACGCTCCATTATCCAGCCCCAAAGCGCAACAAGCCC
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
ATGAAGCACAAAGCTGGGCGGGGGCCAGTACGGGGAGGTGTACGAGGGCGTGTGGAAGAAA
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

. . . . .
gggtacgtggggcaaggcgtctgctggcattaggcgatgcatctgcctggaagtctacct
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· · · · ·
cctgcctgctgtccgagggcttcattggcgccacggaattgacttttccgtcttatatca
· · · · ·
ttcctgtgtctttgtaggagtggaatcattctcatagtccgagtgtgtttccacatatgg
· · · · ·
tgagagctgacaagcatggaggggttttggtgtaaaaagattagtcatttggagaggttt
· · · · ·
tctcattttatggcaaggttcttttaagccgt

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

```
. . . . .
tggggaagcacatgtggcctgcctagcaggcaccagaagcaggttgtcggcacatgcaag

. . . . .
ccagctttgccctgttgctgggggagaattgaaaagtttgccccaaggggaaaattc

. . . . .
tttctgccatcaagttgctggtcagctgtcatggaacctgtctgcagcaatgtggctgtc

. . . . .
acaaaacgcagcccaggacgagtatgcgctgaagctccattttgcattaactagtcaagt

. . . . .
acttaccactgaaaagcacttcctgaaataatttcaccttcgtttttttccttctgcag

|881      |891      |901      |911      |921      |931
GAGGACACCATGGAGGTGGAAGAGTTCTTGAAAAGAAGCTGCAGTCATGAAAGAGATCAAA
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      . . . . .
CACCTAACCTGGTGCAGCTCCTTGgtgagtaagcccgggctctgaagagagggctctcg
H P N L V Q L L G
                        |321

. . . . .
cgccgcacccccagggtgacacaggcgctggggaagacgcacgggcggctcactgcacaa

. . . . .
aacctcgttggaatatttgctctgccgacgttcagccgagggtaaaatgaggcctgta

. . . . .
tgggatgggtgtgtgcgtgtgtgcacatatgcacatgtatgtatgagagggagaatgtga

. . . . .
ttattttaagtggatacctaaaagcagtc aaatgaaatctgaaattagtttctgaaact

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

.
caggggtaaactgacggtggtgaaggtcatttgaggtggggccaggtctgcgtctgaatt
.
ctgtggcagcctctccctgcgtaaattcaagttcactggcttgagaagaagaaaagagcc
.
tggccatgtccctcccacacgagcacagtctcaggatgcaggtgcttgggaccatgttgg
.
aagttgggcccaggactgaggagcagagtcagaatccttcagaaggctttttcttttagac
.
agttgtttgttcagttgggagcggagccacgtgttgaagtcctcgttgtcttgttggcag
|971 |981 |991 |1001 |1011 |1021
GGGTCTGCACCCGGGAGCCCCGTTCTATATCATCACTGAGTTCATGACCTACGGGAACC
V C T R E P P F Y I I T E F M T Y G N L
|331 |341
|1031 |1041 |1051 |1061 |1071 |1081
TCCTGGACTACCTGAGGGAGTGCAACCGGCAGGAGGTGAACGCCGTGGTGCTGTGTACA
L D Y L R E C N R Q E V N A V V L L Y M
|351 |361
|1091 |1101 |1111 |1121 |1131 |1141
TGGCCACTCAGATCTCGTCAGCCATGGAGTACCTGGAGAAGAAAAACTTCATCCACAGgt
A T Q I S S A M E Y L E K K N F I H R
|371 |381
.
aggggcctggccaggcagcctgcgccatggagtcacagggcgtggagccgggcagccttt
.
tacaaaaagccccagcctaggaggtctcagggcgagcttctaacctcagtgtggcaac
.
acattggaccttgaacaaaggcaaactaggctcctggcaaagccagctttgggcatg
.
catccagggtctaaattcagccaggcctagactctggaccagtggagcagctaataccccgg
.
agtaaggaatatatttcatttttgaaccatttttgggctaagtggaatatataatgaagtt

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

.
gccattattatcgtcttcattttacggatgaggttaactgagtcccagggttaattaacttg

.
ctccagggtcatgaggccaggagagcccgctcccagcaccagcctctcccatgttgggatc

.
tcagggtgtgtttgctgagaggctggcactgtgttaattgccgtgggcattaatacaaac

.
ttccagggcattggactcaatctttccattgtcagcattgcacctttgctcagcagtggt

.
ggatttgtgaagtggaaggttgccaggagctctcatgggtgaacattttcctttcttag

 |1151 |1161 |1171 |1181 |1191 |1201
AGATCTTGCTGCCCCGAACTGCCTGGTAGGGGAGAACCACCTTGGTGAAGGTAGCTGATT
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
CATCAAATGGACTGCACCCGAGAGCCTGGCCTACAACAAGTTCTCCATCAAGTCCGACGT
I K W T A P E S L A Y N K F S I K S D V
 |431 |441

.
CTGGGgtaagggctgctgctgcactgaagtggctccttcctgactacaggagggtttttt
W A

.
ctgcctctttcttgctcttcctttcttttcttcctttctttttgttttttgagacgga

.
gtctcactctgtcaccaggtggagtgagtgcaatcttggctcattgcagcctct

.
ccotcccgggttcaagcgattctcctgtctcagcatcttgagtagctgggattataggca

cccgcaccacacccagctaatttttggtatttttagtagagatggggtttcaccatgtt

ggcca

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

```
. . . . .
taatttttgtatttttagtagagatggggtttcgccatggtggccaggggtggtcttgaat

. . . . .
tcctgacctcaaataatcctcccacttcagcctcccaaagtgctgggattacaggcgtga

. . . . .
gccaccgcaccagccttgtcctggtcttctgatgataaagagcctggtaaaatgtcaga

. . . . .
gcctgggctgctgctggggccatcccttctgaggtctgctgcaaaggtaactgattttaa

. . . . .
atgtagtgtagtgaaatgctacacatcttgaaacagcctttctctttcggttttctttcag

      |1331      |1341      |1351      |1361      |1371      |1381
CATTGGAGTATTGCTTTGGGAAATTGCTACCTATGGCATGTCCCCTTACCCGGAATTG
  F  G  V  L  L  W  E  I  A  T  Y  G  M  S  P  Y  P  G  I  D
                        |451                                |461

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

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

. . . . .
agtatatgtgggcattccaggaaattcaactgtgcaggagtgtgtacacaaagttgaaag

. . . . .
tttttccatgagctctctccattccagttcttcagatgcagctaattgtagccatttgcta

. . . . .
cctattgacctttatttacagataaatagtatgtgcgtgacttgtcttttaagcaaaaa

. . . . .
tggtattgatagataccaaacctgggtgtattcctaaatacagattcctgggccctgctt

. . . . .
tcacagacattctgctatagtagctaagctcat
```

tagtaattttctacacctaactagagcgggactgggaaaaatatatttgtaaatagcagttc

.

ttgctgtcactgtctctctggggttttacaatccatattcctgccagcatctaacgtctt

.

ttcaaattcttaatgtctataacaggacatgatgacattcatcgttttgacttgttgcag

.

caaaagatggttagcaggattggaatgttgctttcattctagacttttccttgagaactg

.

ctagccccgtattgctagccagatctcatggatgatctgacttgggtttcatctgtccag

.

|1481 |1491 |1501 |1511 |1521 |1531

GTTGGCAGTGGGAATCCCTCTGACCGGCCCTCCTTTGCTGAAATCCACCAAGCCTTTGAAA

W Q W N P S D R P S F A E I H Q A F E T

|501 |511

.

|1541 |1551 |1561

CAATGTTCCAGGAATCCAGTATCTCAGACGgtaaagtacccatcccggggtacctgcagt

M F Q E S S I S D E

|521

.

ggggtgaaagggcagccatgtgggactgcagcctgggtcattcggttcacttcctgggtga

.

aagttcacagaccagcctgtcctgagaccagaaagctgggcagaggtgtggagtattgtg

.

ctttcttgtctgctgcagccctgcagagttctaagaaatgctaagggctgtttctccggt

.

atccacgtgcctttttctttagttgtatgcagatgagcactgttaccttacaaagaaagag

.

aaccaccacaccaagccaacaccagtactg

Exon 11 | Start: 171620 | End: 171784 | Length: 164

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. . . . .
cagccatgtgggactgcagcctgggtcattcggttcacttcctggtgaaagttcacagac

. . . . .
cagcctgtcctgagaccagaaagctgggcagaggtgtggagtattgtgctttcttgtctg

. . . . .
ctgcagccctgcagagttctaagaaatgctaagggtgtttctccggtatccacgtgcct

. . . . .
tttctttagttgtatgcagatgagcactgttaccttacaaagaaagagaaccaccacacc

. . . . .
aagccaacaccagtactgatggctgctggatttttgtttctgtccctgtatgattcttag

|1571      |1581      |1591      |1601      |1611      |1621
AAGTGGAAAAGGAGCTGGGGAAACAAGGCGTCCGTGGGGCTGTGAGTACCTTGCTGCAGG
  V  E  K  E  L  G  K  Q  G  V  R  G  A  V  S  T  L  L  Q  A
                        |531                        |541

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

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

. . . . .
ccccaacccccactgctcttccttccttgccagaggctacattcaggccatcataggcc

. . . . .
aacgggaagctgtgaatggagcccgcacagaagggcagccatggcctttgtcaatggttc

. . . . .
agcttcggaaggaggaaggttctcctctccccacctgcctcctatcccctccctctgaga

. . . . .
gtccccgaggagcataggctccagcagtgagttcagtcctgtaggcagaggtgcttctga

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

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. . . . .
gggtcaaaacctgtggctctcctgccagccagctagccgagaggcctatgaggagctctg

. . . . .
ggaataaggggctgtgtcccacagtggggaagggaacaatgggccattatgcacaggagat

. . . . .
aagaagggatgacctttgacaattttttgtttgtttgtttgtttgtttgtttgagatggagt

. . . . .
ctcactctgtctcctgggctggagtgcagcagtggcactctgcctcccgggttcaagcga

. . . . .
ttctcctctgtcagcctctagagttgtctggagttgtcagctcttccccttgcgtttcag

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

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

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

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

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

      |2041      |2051      |2061      |2071      |2081      |2091
CAAAGCCCAGCAATGGGGCTGGGGTCCCAATGGAGCCCTCCGGGAGTCCGGGGGGCTCAG
  K  P  S  N  G  A  G  V  P  N  G  A  L  R  E  S  G  G  S  G
      |681                        |691
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2101	2111	2121	2131	2141	2151														
GCTTCCGGTCTCCCCACCTGTGGAAGAAGTCCAGCACGCTGACCAGCAGCCGCCTAGCCA																			
F	R	S	P	H	L	W	K	K	S	S	T	L	T	S	S	R	L	A	T
701						711													
2161	2171	2181	2191	2201	2211														
CCGGCGAGGAGGAGGGCGGTGGCAGCTCCAGCAAGCGCTTCCTGCGCTCTTGCTCCGCCT																			
G	E	E	E	G	G	G	S	S	S	K	R	F	L	R	S	C	S	A	S
721						731													
2221	2231	2241	2251	2261	2271														
CCTGCGTTCCCCATGGGGCCAAGGACACGGAGTGGAGGTCAGTCACGCTGCCTCGGGACT																			
C	V	P	H	G	A	K	D	T	E	W	R	S	V	T	L	P	R	D	L
741						751													
2281	2291	2301	2311	2321	2331														
TGCAGTCCACGGGAAGACAGTTTGACTCGTCCACATTTGGAGGGCACAAAAGTGAGAAGC																			
Q	S	T	G	R	Q	F	D	S	S	T	F	G	G	H	K	S	E	K	P
761						771													
2341	2351	2361	2371	2381	2391														
CGGCTCTGCCTCGGAAGAGGGCAGGGGAGAACAGGTCTGACCAGGTGACCCGAGGCACAG																			
A	L	P	R	K	R	A	G	E	N	R	S	D	Q	V	T	R	G	T	V
781						791													
2401	2411	2421	2431	2441	2451														
TAACGCCCTCCCCCAGGCTGGTGAAAAAGAATGAGGAAGCTGCTGATGAGGTCTTCAAAG																			
T	P	P	P	R	L	V	K	K	N	E	E	A	A	D	E	V	F	K	D
801						811													
2461	2471	2481	2491	2501	2511														
ACATCATGGAGTCCAGCCCAGGCTCCAGCCCAGGCTCCAGTCCAAAACCCCTCCGGC																			
I	M	E	S	S	P	G	S	S	P	P	N	L	T	P	K	P	L	R	R
821						831													
2521	2531	2541	2551	2561	2571														
GGCAGGTCACCGTGGCCCTGCCTCGGGCCTCCCCACAAGGAAGAAGCTGGAAAGGGCA																			
Q	V	T	V	A	P	A	S	G	L	P	H	K	E	E	A	G	K	G	S
841						851													
2581	2591	2601	2611	2621	2631														
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A	L	G	T	P	A	A	A	E	P	V	T	P	T	S	K	A	G	S	G
861						871													

GCCTCGCCATCTCTAGGAACTCCGAGCAGATGGCCAGCCACAGCGCAGTGCTGGAGGCCG
 L A I S R N S E Q M A S H S A V L E A G
 |1061 |1071

 |3241 |3251 |3261 |3271 |3281 |3291
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 K N L Y T F C V S Y V D S I Q Q M R N K
 |1081 |1091

 |3301 |3311 |3321 |3331 |3341 |3351
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 F A F R E A I N K L E N N L R E L Q I C
 |1101 |1111

 |3361 |3371 |3381 |3391 |3401 |3411
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 P A T A G S G P A A T Q D F S K L L S S
 |1121 |1131

 |3421 |3431 |3441 |*1 |*11 |*21
 CGGTGAAGGAAATCAGTGACATAGTGCAGAGGTAGCAGCAGTCAGGGGTCAGGTGTCAGG
 V K E I S D I V Q R *
 |1141 |1151

 |*31 |*41 |*51 |*61 |*71 |*81
 CCCGTCGGAGCTGCCTGCAGCACATGCGGGCTCGCCCATACCCGTGACAGTGGCTGACAA

 |*91 |*101 |*111 |*121 |*131 |*141
 GGGACTAGTGAGTCAGCACCTTGGCCAGGAGCTCTGCGCCAGGCAGAGCTGAGGGCCCT

 |*151 |*161 |*171 |*181 |*191 |*201
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 |*211 |*221 |*231 |*241 |*251 |*261
 CCGCTCCGTCTCTGTCTCGAATTTTATCTGTGGAGTTCCTGCTCCGTGGACTGCAGTCG

 |*271 |*281 |*291 |*301 |*311 |*321
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 |*331 |*341 |*351 |*361 |*371 |*381
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Reader: Version: 1, Version Date: 11/02/2015
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Control: Version: 1, Version Date: 11/02/2015