

Gene: MSH6 - Sequence: NG_007111.1
 Transcript: NM_000179.2 - Protein: NP_000170.1
 Date : March 2, 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: 4936 | End: 5347 | Length: 411

```

. . . . . . . . . . . . . . . .
gcccgggcggtgcgcgcccccgctgttcccgttccgctccagagaggcagggctttccg

. . . . . . . . . . . . . . . .
agcctgctagccccgcggccgcaactaaccgccgggtcggagtgttccggcccgccagcc

. . . . . . . . . . . . . . . .
ccgcggcggtgaggggaaggggagctcagcagttccccgcgcgggggccaggcgctcggcggc

. . . . . . . . . . . . . . . .
agggcggggcccctcaccgccagcgtgccagccccgcccctaccaccagtggtgccagccc

. . . . . . . . . . . . . . . .
cgcccttccccacgtcgccgcgcgccccggggggcctggcgcgccaccgcccgcgcac

|-149      |-139      |-129      |-119      |-109      |-99
GGCGAGGCGCCTGTTGATTGGCCACTGGGGCCCGGGTTCCTCCGGCGGAGCGCGCCTCCC

|-89      |-79      |-69      |-59      |-49      |-39
CCCAGATTTCGCCAGCAGGAGCCGCGCGGTAGATGCGGTGCTTTTAGGAGCTCCGTCC

|-29      |-19      |-9      |1      |11      |21
GACAGAACGGTTGGGCCTTGCCGGCTGTCGGTATGTCGCGACAGAGCACCTGTACAGCT
                               M S R Q S T L Y S F
                               |1

|31      |41      |51      |61      |71      |81
TCTTCCCCAAGTCTCCGGCGCTGAGTGATGCCAACAAGGCCTCGGCCAGGGCCTCACGCG
F P K S P A L S D A N K A S A R A S R E
|11      |21

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| 91      |101      |111      |121      |131      |141
AAGGCGGCCGTGCCCGCTGCCCCGGGGCCTCTCCTTCCCCAGGCGGGGATGCGGCCT
  G  G  R  A  A  A  A  P  G  A  S  P  S  P  G  G  D  A  A  W
|31                      |41

|151      |161      |171      |181      |191      |201
GGAGCGAGGCTGGGCCTGGGCCCAGGCCCTTGGCGCGCTCCGCGTCACCGCCCAAGGCGA
  S  E  A  G  P  G  P  R  P  L  A  R  S  A  S  P  P  K  A  K
|51                      |61

|211      |221      |231      |241      |251      |
AGAACCTCAACGGAGGGCTGCGGAGATCGGTAGCGCCTGCTGCCCCACCAGgtagcggg
  N  L  N  G  G  L  R  R  S  V  A  P  A  A  P  T  S
|71                      |81

. . . . .
gtgggggtggggtcgaaggcgggggcatagcggcggggcgcttgaacccggcgagggga

. . . . .
ggctcgcacagggggttgggggggtgcacggcctggccctgggctcggaggaggcggggc

. . . . .
cgcagagttggcttgaatgagtgcaggggtcgagtctggagcatttgggggtgtagcttg

. . . . .
taaacagggtcggaggagagaggctgtgcaggaagagggtgcaggggagacgcggagag

. . . . .
ttcgggccttttggaggaggagacgcgtcccgccaggtgggggtgctgggc

```

ttcctgccatcagcattataccaaaattctgccatgggtttttaaactttgattctgagaa
.
agttttctcaccctaataacataactatatttgtgtttgtcttcatagttaaatatgcatt
.
atgatatcagcttgcatacatTTTTTaaatgacttgaatatctgactttaaaaaattattc
.
tagaattttctgtgcttcaatattaatgccagaagacttggaattgtttatttgtaggtaa
.
ctgcctttaaggaaacttgaccaaataattaactaagttatgtatttccttttggcaacag
.
|261 |271 |281 |291 |301 |311
TTGTGACTTCTCACCAGGAGATTTGGTTTGGGCCAAGATGGAGGGTTACCCCTGGTGGCC
C D F S P G D L V W A K M E G Y P W W P
|91 |101
|321 |331 |341 |351 |361 |371
TTGTCTGGTTTACAACCACCCCTTTGATGGAACATTTCATCCGCGAGAAAGGGAAATCAGT
C L V Y N H P F D G T F I R E K G K S V
|111 |121
|381 |391 |401 |411 |421 |431
CCGTGTTTCATGTACAGTTTTTTGATGACAGCCCAACAAGGGGCTGGGTAGCAAAAGGCT
R V H V Q F F D D S P T R G W V S K R L
|131 |141
|441 |451
TTTAAAGCCATATACAGgtaagaggtcactactgccatgtgtgtgtgtgtttgtgtgtgtgtgt
L K P Y T G
|151
.
tgtgtgtgtgtgagagaaacagacagacagggcagacttttttctatatgatgaaattaagtgt
.
tattttaccccagtaaattgcaaggggtggcagttgtgaaagcttctggcatggggaaggt

gatgtaacatggtctttagctggtttgtttgtggaatggaatTTTTATTtctgtcctt
gagtgacttacagcaatattatacccttaataagggtaaactaaactgtcccccatctt
gaagggtccaagagaaa

Exon 3 | Start: 17748 | End: 17917 | Length: 169

```
. . . . .
tagctgggactacaggcgcacaccaccacccttggttaatttttgtatttttttttttggg

. . . . .
agagatgggggtttcaccacattgccagggtggtcttgaattcctgacctcaagtagtcc

. . . . .
gcccacctaagcctcccaaatgctgggattacaggcgtgagccaccacacctggcatat

. . . . .
atatattttaagatagagatggggtttgctatgttgccagggtggtcttgaactgctgg

. . . . .
gattacaggcgtgagcctctgcacccggcccttattgtttataaatacatttctttctag

      |461      |471      |481      |491      |501      |511
GTTCAAAATCAAAGGAAGCCCAGAAGGGAGGTCATTTTACAGTGCAAAGCCTGAAATAC
  S  K  S  K  E  A  Q  K  G  G  H  F  Y  S  A  K  P  E  I  L
                        |161                                |171

      |521      |531      |541      |551      |561      |571
TGAGAGCAATGCAACGTGCAGATGAAGCCTTAAATAAAGACAAGATTAAGAGGCTTGAAT
  R  A  M  Q  R  A  D  E  A  L  N  K  D  K  I  K  R  L  E  L
                        |181                                |191

      |581      |591      |601      |611      |621      .
TGGCAGTTTGTGATGAGCCCTCAGAGCCAGAAGAGGAAGAAGAGATGGAGgtgggacacg
  A  V  C  D  E  P  S  E  P  E  E  E  E  E  M  E
                        |201

. . . . .
gcaagcattcagttgttatttatgttaggggtgatgggggaagaaagggggaggggtgtatt

. . . . .
aacaagataccttgttttatatatgtgtgtgtatatgtattattttattatacatacatg

. . . . .
catacttctgtagttccctggactgtaggataagttaggttacttagaatctcaacagct

. . . . .
agcatcggtttttacttaggttttcaagcctactggcagggtgaagcaagaggtagtaccat

. . . . .
tttggtgaagaagtagagagctagggacagtaaagatggagtaatatatat
```

Exon 4 | Start: 20465 | End: 23009 | Length: 2544

.
aaacgtgtttaatacacctacccccaccgaatattgtagcttgggcgtagcctaacctatc
.
tcagacgtgctcagaacacttaaagttagcctaagttgggcaagatcatctaacacaa
.
agcctattttataataaggaattgcctatctcatgtaattcatcgaatactgtactaaaa
.
atgaaaaacagtggctgcacgggtaccattataaagtcaaaaaatcataagttgaactgt
.
cttacattatggttttccaaattttgatttgtttttaaataactctttccttgcctggcag

|631 |641 |651 |661 |671 |681
GTAGGCACAACTTACGTAACAGATAAGAGTGAAGAAGATAATGAAATTGAGAGTGAAGAG
V G T T Y V T D K S E E D N E I E S E E
|211 |221

|691 |701 |711 |721 |731 |741
GAAGTACAGCCTAAGACACAAGGATCTAGGCGAAGTAGCCGCCAAATAAAAAAACGAAGG
E V Q P K T Q G S R R S S R Q I K K R R
|231 |241

|751 |761 |771 |781 |791 |801
GTCATATCAGATTCTGAGAGTGACATTGGTGGCTCTGATGTGGAATTTAAGCCAGACACT
V I S D S E S D I G G S D V E F K P D T
|251 |261

|811 |821 |831 |841 |851 |861
AAGGAGGAAGGAAGCAGTGATGAAATAAGCAGTGGAGTGGGGGATAGTGAGAGTGAAGGC
K E E G S S D E I S S G V G D S E S E G
|271 |281

|871 |881 |891 |901 |911 |921
CTGAACAGCCCTGTCAAAGTTGCTCGAAAGCGGAAGAGAATGGTGACTGGAAATGGCTCT
L N S P V K V A R K R K R M V T G N G S
|291 |301

931	941	951	961	971	981
CTTAAAAGGAAAAGCTCTAGGAAGGAAACGCCCTCAGCCACCAAACAAGCAACTAGCATT					
L	K	R	K	S	S
R	K	S	S	R	K
E	T	P	S	A	T
K	Q	A	T	S	I
311			321		
991	1001	1011	1021	1031	1041
TCATCAGAAACCAAGAATACTTTGAGAGCTTTCTCTGCCCCTCAAAATTCTGAATCCCAA					
S	S	E	T	K	N
T	L	R	A	F	S
A	P	Q	N	S	E
S	S	Q			
331			341		
1051	1061	1071	1081	1091	1101
GCCACGTTAGTGGAGGTGGTGATGACAGTAGTCGCCCTACTGTTTGGTATCATGAACT					
A	H	V	S	G	G
G	D	D	S	S	R
P	T	V	W	Y	H
E	T				
351			361		
1111	1121	1131	1141	1151	1161
TTAGAATGGCTTAAGGAGGAAAAGAGAAGAGATGAGCACAGGAGGAGGCCTGATCACCCC					
L	E	W	L	K	E
E	K	R	R	D	E
H	R	R	R	P	D
H	P				
371			381		
1171	1181	1191	1201	1211	1221
GATTTTGATGCATCTACACTCTATGTGCCTGAGGATTCCTCAATTCTTGACTCCTGGG					
D	F	D	A	S	T
L	Y	V	P	E	D
F	L	N	S	C	T
P	G				
391			401		
1231	1241	1251	1261	1271	1281
ATGAGGAAGTGGTGGCAGATTAAGTCTCAGAACTTTGATCTTGTCATCTGTTACAAGGTG					
M	R	K	W	W	Q
I	K	S	Q	N	F
D	L	V	I	C	Y
K	V				
411			421		
1291	1301	1311	1321	1331	1341
GGGAAATTTTATGAGCTGTACCACATGGATGCTCTTATTGGAGTCAGTGAACCTGGGGCTG					
G	K	F	Y	E	L
Y	H	M	D	A	L
I	G	V	S	E	L
G	L				
431			441		
1351	1361	1371	1381	1391	1401
GTATTCATGAAAGGCAACTGGGCCCATTTCTGGCTTTTCTGAAATTGCATTTGGCCGTTAT					
V	F	M	K	G	N
W	A	H	S	G	F
P	E	I	A	F	G
R	Y				
451			461		
1411	1421	1431	1441	1451	1461
TCAGATTCCCTGGTGCAGAAGGGCTATAAAGTAGCACGAGTGGAACAGACTGAGACTCCA					
S	D	S	L	V	Q
K	G	Y	K	V	A
R	V	E	Q	T	E
T	P				
471			481		

2011	2021	2031	2041	2051	2061
GGGTTGACACCAGGAGAGAAAAAGTGAATTGGCCCTCTCTGCTCTAGGTGGTTGTGTCTTC					
G L T P G E K S E L A L S A L G G C V F					
671			681		
2071	2081	2091	2101	2111	2121
TACCTCAAAAAATGCCTTATTGATCAGGAGCTTTTATCAATGGCTAATTTTGAAGAATAT					
Y L K K C L I D Q E L L S M A N F E E Y					
691			701		
2131	2141	2151	2161	2171	2181
ATTCCCTTGGATTCTGACACAGTCAGCACTACAAGATCTGGTGCTATCTTCACCAAAGCC					
I P L D S D T V S T T R S G A I F T K A					
711			721		
2191	2201	2211	2221	2231	2241
TATCAACGAATGGTGCTAGATGCAGTGACATTAAACAACCTGGAGATTTTTCTGAATGGA					
Y Q R M V L D A V T L N N L E I F L N G					
731			741		
2251	2261	2271	2281	2291	2301
ACAAATGGTTCTACTGAAGGAACCCTACTAGAGAGGGTTGATACTTGCCATACTCCTTTT					
T N G S T E G T L L E R V D T C H T P F					
751			761		
2311	2321	2331	2341	2351	2361
GGTAAGCGGCTCCTAAAGCAATGGCTTTGTGCCCCACTCTGTAACCATTATGCTATTAAT					
G K R L L K Q W L C A P L C N H Y A I N					
771			781		
2371	2381	2391	2401	2411	2421
GATCGTCTAGATGCCATAGAAGACCTCATGGTTGTGCCTGACAAAATCTCCGAAGTTGTA					
D R L D A I E D L M V V P D K I S E V V					
791			801		
2431	2441	2451	2461	2471	2481
GAGCTTCTAAAGAAGCTTCCAGATCTTGAGAGGCTACTCAGTAAAATTCATAATGTTGGG					
E L L K K L P D L E R L L S K I H N V G					
811			821		
2491	2501	2511	2521	2531	2541
TCTCCCCTGAAGAGTCAGAACCACCCAGACAGCAGGGCTATAATGTATGAAGAACTACA					
S P L K S Q N H P D S R A I M Y E E T T					
831			841		


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|3091      |3101      |3111      |3121      |3131      |3141
AAGGACTGCATGCGGCGACTGTTCTATAACTTTGATAAAAATTACAAGGACTGGCAGTCT
K  D  C  M  R  R  L  F  Y  N  F  D  K  N  Y  K  D  W  Q  S
|1031                                |1041

|3151      |3161      |3171      .      .      .      .      .      .
GCTGTAGAGTGTATCGCAGTGTGGgtaagactttgaacaagcttgttctcaggcctttga
A  V  E  C  I  A  V  L  D
|1051

.      .      .      .      .      .      .      .      .      .
taagtagtgctgtttgccagctgtatattatccctaaaaataagtaataaggtatatatg

.      .      .      .      .      .      .      .      .      .
gtacatattttgacatgcatatacatatttgcatcctgactaggctgccacagcaattt

.      .      .      .      .      .      .      .      .      .
aagttacttgaaactcgcttttatcttagtagccctttggcctttcttcagttttttttt

.      .      .      .      .      .      .      .      .      .
tttttttttttttttttgagacatggtcttgctctgttgcccaggctagaatatggtgaca

.      .      .      .      .
caaccatggctactgcagcctcgac

```

Exon 5 | Start: 25274 | End: 25539 | Length: 265

.
gttggtcaggctggtcctgaactgctgacctcgtgaactctgccgcctaggcctcctga

.
agtgctgggattacaggcgtgagccaccgtgcctggcctctgctctatcttttagctttc

.
ccttggcacttctatggtccagatgtagagggtaagtattttgatgggggagatcgttg

.
gactgtaattgaaagttatgtcttataatgaaatgtgttatataaagaagacctataaaa

.
cacttaggctgataaaacccccaaacgatgaagcctcactttttaccctctcttttaacag

 |3181 |3191 |3201 |3211 |3221 |3231
ATGTTTACTGTGCCTGGCTAACTATAGTCGAGGGGGTGATGGTCCTATGTGTCGCCAG
 V L L C L A N Y S R G G D G P M C R P V
 |1061 |1071

 |3241 |3251 |3261 |3271 |3281 |3291
TAATTCTGTTGCCGGAAGATACCCCCCTTCTTAGAGCTTAAAGGATCACGCCATCCTT
 I L L P E D T P P F L E L K G S R H P C
 |1081 |1091

 |3301 |3311 |3321 |3331 |3341 |3351
GCATTACGAAGACTTTTTTGGAGATGATTTTATTCCTAATGACATTCTAATAGGCTGTG
 I T K T F F G D D F I P N D I L I G C E
 |1101 |1111

 |3361 |3371 |3381 |3391 |3401 |3411
AGGAAGAGGAGCAGGAAAATGGCAAAGCCTATTGTGTGCTTGTTACTGGACCAAATATGG
 E E E Q E N G K A Y C V L V T G P N M G
 |1121 |1131

 |3421 |3431
GGGCAAGTCTACGCTTATGAGACAGgtaactgattcttaaagttttgttatcagaaagt
 G K S T L M R Q
 |1141

.
catttgtagacattaggaataacatacttaggtgatcattttccaaacacagttacataaa

.
agtcagccagtgacttaataggaagcaaagggaaattactccctgtgttataaaaattgag

.
aattatatttagctgaaacatcgatgcttaatgttaaggggaatatgttaaaaagggg

.
aaggaggtcagtcattcaggtcatgaggccctttgacttgaattcatttcctcagaaggt

.
aggtatattcatagtgaacaaaaata

Exon 6 | Start: 26764 | End: 26881 | Length: 117

```
. . . . .
agtagttttaagagctcctaggtgattctattctggccagcgttgagaatcactagggt

. . . . .
agtgggttggtgaagcaggctctgatgttttaaggccaggtagggccctatgcctcttgt

. . . . .
ctctcttagcctcaactttctccatggttagcaaatggatttcagaaacagaaccaacgtac

. . . . .
atgtgattgtgaaagttgttttagagtgcttagctcttacgtaagggttcataagaaaga

. . . . .
caaaagtttatgaaactgttactaccagtcataaaagaccttttcctccctcattcacag

|3441      |3451      |3461      |3471      |3481      |3491
GCTGGCTTATTAGCTGTAATGGCCCAGATGGGTTGTTACGTCCCTGCTGAAGTGTGCAGG
A G L L A V M A Q M G C Y V P A E V C R
|1151                                |1161

|3501      |3511      |3521      |3531      |3541      |3551
CTCACACCAATTGATAGAGTGTTTACTAGACTTGGTGCCTCAGACAGAATAATGTCAGgt
L T P I D R V F T R L G A S D R I M S G
|1171                                |1181

. . . . .
gagttttttgtttccacttaagttctcattcagtcatttagatgtgataaaagatattt

. . . . .
gcttcttgatatgagccttttaaatctaataatttgatttttctggtgttactttaaaaa

. . . . .
catcactttttaagaactgcatagtcctctctctcttttttttttttttgagatggagttt

. . . . .
ccctcttggtgcccaagctggagtgcaatggcacgatcttggctcactgcaacctctgct

. . . . .
tccaggttcaagtgattctcctgcctcagcctctcgagtagctgggattacaggcgca
```

Exon 7 | Start: 27472 | End: 27561 | Length: 89

```
. . . . .
tacaggcgcacatgccatcacgcccagctaattttttgtatttttagtagaagcggggtttc

. . . . .
accatgtaggctggtctcttaactcctgacctcaggtgatctgcttgcctcggcctccc

. . . . .
aaagtgctgggattacaggcgtgagccaccgtgcccggccaataattgcatagtctctta

. . . . .
atgagatttaaatctttataccaatatgtgtagctcatgatagctatataacctagaaga

. . . . .
tgaatttatgtaatatgatttgcaaaatgagtattcatttgatgtttttttttttaag

      |3561      |3571      |3581      |3591      |3601      |3611
GTGAAAGTACATTTTGTGGAATTAAGTGAACTGCCAGCATACTCATGCATGCAACAG
  E  S  T  F  F  V  E  L  S  E  T  A  S  I  L  M  H  A  T  A
                |1191                                |1201

      |3621      |3631      |3641      . . . . .
CACATTCTCTGGTGCTTGTGGATGAATTAGgtaagacattaaacttctcatttgaagact
  H  S  L  V  L  V  D  E  L  G
                |1211

. . . . .
atctatcttaaaaacatttgtacaaataactatttttatagaagattatctgaagtacat

. . . . .
ttaaacaatatgaatgttttttagagcacgcactcaccattgtggcacagaccgatagttg

. . . . .
gagataaaaggatgatattgtgaaagggtttttgattaccattaattattaggccttacac

. . . . .
tgttttagttgtaataaaacatttgtatactacggggatgagaacactaataggaggact

. . . . .
caggaagtttatgaccttgagcgatactgt
```

Exon 8 | Start: 28058 | End: 28212 | Length: 154
 BE AWARE: Flanking intron is shared with the following exon

```

. . . . .
attaggccttacactgtttagttgtaataaaacatttggtatactacggggatgagaaca
. . . . .
ctaataaggaggactcaggaagtttatgaccttgagcgatactgtattttctttaaaagaa
. . . . .
acctcactcccatgggctgctaagcagactcgtgtagctaaacaaggcctatttataga
. . . . .
atgcttttagacgtggatgtactaaccgatgttgcttttctgtcctagcatttttgtttt
. . . . .
aattccttttttgttttaattcctttgagttacttccttatgcatattttactttaacag
      |3651      |3661      |3671      |3681      |3691      |3701
GAAGAGGTACTGCAACATTTGATGGGACGGCAATAGCAAATGCAGTTGTTAAAGAACTTG
  R  G  T  A  T  F  D  G  T  A  I  A  N  A  V  V  K  E  L  A
                |1221                                |1231

      |3711      |3721      |3731      |3741      |3751      |3761
CTGAGACTATAAAATGTCGTACATTATTTCAACTCACTACCATTTCATTAGTAGAAGATT
  E  T  I  K  C  R  T  L  F  S  T  H  Y  H  S  L  V  E  D  Y
                |1241                                |1251

      |3771      |3781      |3791      |3801.      .      .      .
ATTCTCAAAATGTTGCTGTGCGCTAGGACATATGgtatgtgcaaattgtttttttccac
  S  Q  N  V  A  V  R  L  G  H  M
                |1261

. . . .
aaattcgggttttttgagaggg

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Exon 9 | Start: 28306 | End: 28505 | Length: 199
 BE AWARE: Flanking intron is shared with the previous exon

```

. . . . . |3811
cacttctcttgctagcacatgtatcgctaataatttttctttcttaagGCATGCATGGTAG
                                     A C M V E
                                     |1271

      |3821      |3831      |3841      |3851      |3861      |3871
AAAATGAATGTGAAGACCCCAGCCAGGAGACTATTACGTTTCCTCTATAAATTCATTAAGG
  N E C E D P S Q E T I T F L Y K F I K G
                        |1281                        |1291

      |3881      |3891      |3901      |3911      |3921      |3931
GAGCTTGTCCCTAAAAGCTATGGCTTTAATGCAGCAAGGCTTGCTAATCTCCAGAGGAAG
  A C P K S Y G F N A A R L A N L P E E V
                        |1301                        |1311

      |3941      |3951      |3961      |3971      |3981      |3991
TTATTCAAAAGGGACATAGAAAAGCAAGAGAATTTGAGAAGATGAATCAGTCACTACGAT
  I Q K G H R K A R E F E K M N Q S L R L
                        |1321                        |1331

      |4001.      . . . . .
TATTTTCGgtaactaactaactataatggaattataactaactgaccttaagtttcaaaga
  F R

. . . . .
aacagtaaaaggggaagggatgatgcactatgaaaaacaaaaaaactttttttttttttt

. . . . .
tttttaattttaagggaagtttgcttgctagtgaagggtcaactgtagatgctgaagct

. . . . .
gtccataaattgctgactttgattaaggaattatagactgactacattggaagctttgag

. . . . .
ttgacttctgacaaaggtggtaaattcagacaacattatgatctaataaaactttattttt

. . .
taaaaat

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Exon 10 | Start: 28633 | End: 28807 | Length: 174
 BE AWARE: Flanking intron is shared with the previous exon

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. . . . .
aggggaagggatgatgcactatgaaaaacaaaaaactttttttttttttttttaatt

. |4011 |4021 |4031 |4041 |4051
ttaagGGAAGTTTGCCTGGCTAGTGAAAGGTCAACTGTAGATGCTGAAGCTGTCCATAAA
  E V C L A S E R S T V D A E A V H K
                        |1341 |1351

|4061 |4071 |4081 |*11 |*21 |*31
TTGCTGACTTTGATTAAGGAATTATAGACTGACTACATTGGAAGCTTTGAGTTGACTTCT
L L T L I K E L *
                        |1361

|*41 |*51 |*61 |*71 |*81 |*91
GACAAAGGTGGTAAATTCAGACAACATTATGATCTAATAAACTTTATTTTTTAAAAATGA

. . . . .
ccatttttccattttctttctaggaataaacccttttaattcttatctaccttctaca

. . . . .
taatggttattgaatactccacaatatattaagtctagatggttatggtacatgcatacac

. . . . .
tttcaggctgttttatacccactgtcaccaatacacataaatgggggaggaaaagctatg

. . . . .
aaactgtatagggctgtatatatacttgtctcagcttaatgcaggaaattggtttaattt

. . . . .
ccagcagttttgtctaaactgttcaaaaaaaaactatgaacagagttcaaatacaggact

```

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