

Gene: ASL - Sequence: NG_009288.1

Date : February 11, 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: 5000 | End: 5068 | Length: 68

```
. . . . .
ggcctgatgtcatagcctctacccctggcccgagtctccagtcccctgctgtctgtga

. . . . .
ccacagcacgaacgccagcgactaccctcctcaaccccagcccaggccccttccccgtc

. . . . .
gggggtcccccaaccctttccccgcccgttccccgccccggggcgcgttagcctccagc

. . . . .
tcagcgggaggtatccccgcccacggccaggattggaggatggaggcaacgcccaccccg

. . . . .
ccgggcggcctcctattggcgcgccgtcgccaggggtggggacaggaccggcggctgct

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

|-49
AGGCGGAGgtgagtgcgcggcgccggatgggcgggacgggcgtggaggacgccgagcac

. . . . .
cgtggcgcgctcacgtccgctccccaagggtcgctccctcaagcgcagtgccag

. . . . .
aactcggagccagcccggccgggggaccctgctggccaaggaggtcgtcagtcgggtct

. . . . .
tgtcttccagaccggaggaccgaagcttccggacgacgaggaaccgccaacatggcct

. . . . .
cggaggtgagtgggacctcggggactccggctcctcctagcctccaaaggagagagtgggg
```

. .
gcgccaga

Exon 2 | Start: 5250 | End: 5305 | Length: 55

.
tcctattggcgcggccgtcgccaggggtggggacaggaccggcggctgctgacgccatcc
.
cggccagaaaagccctggccagtggcgggcgcgacactatccgtgcggccaggcggaggt
.
gagtgcgcggcggccggatgggcgggacgggcgtggaggacccgagcacctggcgcgc
.
gctcacgtccgcgtccccaagggtgcgctccctcaagcgcagtgcccagaactcggagc
.
cagcccggcccggggaccctgctggccaaggaggtcgtcagtcgggtcttgtcttcag
.
|-39 |-29 |-19 |-9 |1 |11 .
ACCCGGAGGACCGAAGCTTCCGGACGACGAGGAACCGCCCAACATGGCCTCGGAGgtgag
M A S E
|1
.
tgggacctcggggactccggtcctcctagcctccaaaggagagagtgggggcgcagacc
.
tgcctcgggcccaccctgctgggaatcgccctccaggaagcaatTTTgaaaattacctagg
.
aagcctgcacccccagccctcccgggcgcatcatctggagcccagcagtcacctttacca
.
ggactcaccagtatccgcaggcagcccttgtggcaaaccaccaaccacactactaggg
.
gtagagtggctctgccctcacctcacagtgatgcctgcctggccaggaaaagtgg

Exon 3 | Start: 11014 | End: 11209 | Length: 195

```
. . . . .
ctgggaggcagagtttgca gctgagctgagatggcaccactgtactccagcctggccgaca

. . . . .
aagtgagactctgtctcaaaaaaaaaaaaaaagaacccaaacttttggtgttcagccatg

. . . . .
ttcccatgctcactcccagggtggtgactctgggaaggtctcagcctcctgtctgccca

. . . . .
gttagaatgatctgatgcccctgctaccatcagacttgataagtttcccaaagactcttt

. . . . .
gcaagaagcactgttctggagggtggaggagagactaattgttcttgctctcctggccag

      |21      |31      |41      |51      |61      |71
AGTGGGAAGCTTTGGGGTGGCCGTTTGTGGGTGCAGTGGACCCCATCATGGAGAAGTTC
S  G  K  L  W  G  G  R  F  V  G  A  V  D  P  I  M  E  K  F
      |11                      |21

      |81      |91      |101     |111     |121     |131
AACGCGTCCATTGCCTACGACCGGCACCTTTGGGAGGTGGATGTTCAAGGCAGCAAAGCC
N  A  S  I  A  Y  D  R  H  L  W  E  V  D  V  Q  G  S  K  A
      |31                      |41

      |141     |151     |161     |171     |181     |191
TACAGCAGGGGCTGGAGAAGGCAGGGCTCCTCACCAAGGCCGAGATGGACCAGATACTC
Y  S  R  G  L  E  K  A  G  L  L  T  K  A  E  M  D  Q  I  L
      |51                      |61

      |201
CATGGCCTAGACAAGgtacttgccgtggcccaagccccaccaaggccccttccctgtgg
H  G  L  D  K

. . . . .
ccccaggctcccaccaaaccctgagcaaacagtgcagtggtgcccatctgtggtttcac

. . . . .
attgaactaattatataactcaagtgtgttaactgtgtgccttgatgactgcctctctc
```

.
 catcctttaatgaccctgtggcccatggctcatgggtaaagggtgtgctgggcctgag

 atgccccctcccagggtgcgcttcaggactcagctcctgggcaggacagtcagtcacc

 agggatagggtggga

Exon 4 | Start: 11579 | End: 11663 | Length: 84

.
 gcaaacagtgcagtggtgcccacatctgtggtttcacattgaactaattatataactcaagtg

 ctgtttaactgtgtgccttgatgactgcctctctccatcctttaatgaccctgtggccc

 acatggctcatgggtaaagggtgtgctgggcctgagatgccccctcccagggtgcgcttcc

 aggactcagctcctgggcaggacagtcagtcaccagggatagggtgggaccaaggcagg

 ggctctcttggtgctgatgcctgctcacctgaccccggcattgctgctaccactacag

|211	|221	|231	|241	|251	|261
GTGGCTGAGGAGTGGGCCAGGGCACCTTCAA	ACTGAACTCCAATGATGAGGACATCCAC				
V A E E W A Q G T F K L N S N D E D I H					
|71		|81			

|271	|281	|291	.	.	.	.	.	.
ACAGCCAATGAGCGCCGCTGAAGgtacgaccctggagccccaccgctttccttgctc								
T A N E R R L K								
|91								

.
 ccctctccaccttgcccagggccactttgagcattagcaccattctgtttacttcgccat

 tggcagacagcatgtgagacctcaggacatgagccaggcacccctggctcatgcctataat

.
 cctagcactttgggaggctgaggtgggaggattgcttgagaccaggagttcgagaccagc

 ctgggcaacataatgaggtcccacagctacaaaaattaaaaaagaaaagaaaaaagaa

 caggcctcagcagaaatggcgaga

Exon 5 | Start: 12091 | End: 12148 | Length: 57

.
 gccaggcacccctggctcatgcctataatcctagcactttgggaggctgaggtgggaggat

 tgcttgagaccaggagttcgagaccagcctgggcaacataatgaggtcccacagctacaa

 aaattaaaaaagaaaagaaaaaagaacaggcctcagcagaaatggcgagagatttggg

 gaggaccgggagccctgggggtatggaggtaggttggcagggctgatgaggaaaactgccc

 tgcctgggttgactcctctgggggtatagaccgtgaccctgggtctcccttcacctccag

	|301	|311	|321	|331	|341
	GAGCTCATTGGTGCAACGGCAGGGAAGCTGCACACGGGACGAGCCGGAATGACCAGgtg				
E	L	I	G	A	T
		A	G	K	L
			H	T	G
				R	S
				R	N
				D	Q
	|101			|111	

.
 ctttagccctccacccctgctccgtgttgtcccaaccttgaggagcccagggggcagt

 tagagttctgcagcggctcctggctcctcaggggaagcaacacatcggcctccctgagcacc

 atctcctccttgacaggtggtcacagacctcaggctgtggatgcggcagacctgctcca

 cgctctcgggcctcctctgggagctcattaggaccatggtggatcgggcagaggcgtgag

.
tcctacagggacaccagggggcagacagaggtgtgatggaagcctgaacaggagac

Exon 6 | Start: 12288 | End: 12386 | Length: 98

.
gggtatggaggttaggttggcagggctgatgaggaaaactgccctgcctgggttgactcct

.
ctgggggtatagaccgtgaccctgggtctcccttcacctccaggagctcattggtgcaac

.
ggcaggggaagctgcacacgggacggagccggaatgaccaggtgctttagcccctccaccc

.
cctgctccgtgttgtcccaaccttgaggagcccagggggcagttagagttctgcagcgt

.
cctggctcctcaggggaagcaacacatcggcctccctgagcaccatctcctccttgcacag

|351	|361	|371	|381	|391	|401
GTGGTCACAGACCTCAGGCTGTGGATGCGGCAGACCTGCTCCACGCTCTCGGGCCTCCTC					
V V T D L R L W M R Q T C S T L S G L L					
	|121			|131	

|411	|421	|431	|441	.	.	.	.
TGGGAGCTCATTAGGACCATGGTGGATCGGGCAGAGGCgtgagtcctacagggacacca							
W E L I R T M V D R A E A							
|141							

.
gggggcagacagaggtgtgatggaagcctgaacaggagacctagggggcaggggtgaaca

.
gcgtgggggtgccaggccctgggggacaggggcatcccagaactccaggatcgaggcaga

.
gcagccaggagtgggccatttcctgcaggccccaataactcccatgccagtctagctcagc

.
aggcagagaagactaacccttcgtggggctgggtgcggtggctcacgcctgtaatctcag

.
cactttgggaggccgaggtgggtggatcacctgaggtc

Exon 7 | Start: 15796 | End: 15874 | Length: 78

.
tattctggcccctgctcggagatgctgagtgacagaggctggacttgggggtgtttctggc

.
aaagcctcactgcaggaagccccacagctcaggcccagtccttggttcacacggtccac

.
ttccagcttcttttgccttaagactgatttgtccctgggagatcaccagatccctcatt

.
caggtggagtgctgcagcgtgacactttttccaggggtgaccaggcctgcagggttcca

.
gtgtcacaggcaggccttgcatgagcctccacccgagcttctgctcctcctctcccacag

 |451 |461 |471 |481 |491 |501
GGAACGTGATGTTCTTCTCCCGGGGTACACCCATTTGCAGAGGGCCCAGCCCATCCGCTG
E R D V L F P G Y T H L Q R A Q P I R W
 |151 |161

 |511 |521
GAGCCACTGGATTCTGAGgtgagccaggtgaggtgcaggggctgtgctagaggggaggac
S H W I L S
 |171

.
cccggctgccctgaccctcctgccctggcttcccacagccacgccgtggcactgaccg

.
agactctgagcggctgctggaggtgcggaagcggatcaatgtcctgcccctggggaggtg

.
ggtgaggctccagtgccccgagggcctggtgggggtggctgctgcatagccttagggatt

.
gacagagctgggaagtgcagagtgggacagaaaaccgccttatctgctcagcgggggact

. . . .
ctgcatggagccccagct

Exon 8 | Start: 15955 | End: 16033 | Length: 78

.
gagatcaccagatccctcattcaggtggagtgctgcagcgtgacactttttccaggggtg

.
acccaggcctgcagggttccagtgtcacaggcaggccttgcatgagcctccacccgagct

.
tctgctcctcctctcccacagggaacgtgatgttcttcccggggtacacccatttgca

.
gagggcccagcccatccgctggagccactggattctgaggtgagccaggtgaggtgcagg

.
ggctgtgctagaggggaggacccccggctgccctgaccctcctgcccctggcttcccacag

 |531 |541 |551 |561 |571 |581
CCACGCCGTGGCACTGACCCGAGACTCTGAGCGGCTGCTGGAGGTGCGGAAGCGGATCAA
H A V A L T R D S E R L L E V R K R I N
 |181 |191

 |591 |601
TGTCTGCCCCCTGGGGAGgtgggtgaggctccagtgccccgagggcctggtgggggtggc
V L P L G S
 |201

.
tgctgcatagccttagggattgacagagctgggaagtgcagagtgggacagaaaaccgcc

.
ttatctgctcagcgggggactctgcatggagccccagctctcgctaaggtgacgaccaag

.
ccattgaatgtgtctgagcagggccagagccctccagcaaggctcctggcaagcccagcc

.
tgctgccctcagcctgacatgtgggaacatgtgtcaggagacaagtgtcctgcacccagg

gtgacttagtgcttgggg

Exon 9 | Start: 16545 | End: 16598 | Length: 53

aagcccagcctgctgccctcagcctgacatgtgggaacatgtgtcaggagacaagtgtcc

tgcaaccagggtgacttagtgcttggggacaagtgtttgtggacacttggggacaagta

ttctgtaccaagagactgggccaggggaaggctaagcgccaggtggttgccctggca

accaggacttggttctctgtgtgtgcgttcgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt

gtgtgtgtgtcagggctgcctgccaggagccctggtcaccatgaatccctgtccctgcag

|611 |621 |631 |641 |651 .
 TGGGGCCATTGCAGGCAATCCCCTGGGTGTGGACCGAGAGCTGCTCCGAGCAGgtgagac
 G A I A G N P L G V D R E L L R A E
 |211

gtcctgccccctcctccccagggagaatcacctcagcacccgccaagacctgcagacaca

cctgaaaccagagggcaggggcctgtggctcctggtgaaaccttcattcattgcctatgg

gcactgaggtcatcaagttcaggggtcactcatggcagggatgcctggtactgagagact

cagggctcctgcctccctcctgggactgtgcaaaagatccctccccccagctgttgcccc

accctgatcaggggagggggctgggcaacctagttaggggagagggggccact

Exon 10 | Start: 16940 | End: 17003 | Length: 63

```
. . . . .
gcacccgccaagacctgcagacacacctgaaaccagagggcaggggcctgtggctcctgg

. . . . .
tgaaaccttcattcattgcctatgggcactgaggtcatcaagttcaggggtcactcatgg

. . . . .
cagggatgcctggtactgagagactcagggtcctgcctccctcctgggactgtgcaaaa

. . . . .
gatccctccccccagctgttgccccaccctgatcaggggagggggctgggcaacctagtt

. . . . .
gggggagagggggccactccctgtcctccagcttagccctgcttccctccacccccccag

      |661      |671      |681      |691      |701      |711
AACTCAACTTTGGGGCCATCACTCTCAACAGCATGGATGCCACTAGTGAGCGGGACTTTG
  L  N  F  G  A  I  T  L  N  S  M  D  A  T  S  E  R  D  F  V
      |221                        |231

. . . . .
TGGgtgagtcctggggagccagtcacctgtgcctcactttagtccttcagcccag
A

. . . . .
cttctctccagtttctccacacctccacggacaggctgggtgtggtgatattgtacac

. . . . .
tgaagtataaaccttaaatgggtaaagtgggtggggcatgggtggttcacatgcccagca

. . . . .
ctggccaacatggtgaaaccccatctctactaagaatacaaaatttagctgggtgtgtgg

. . . . .
tggcaggtgcctgtaatcccagctactcaggagttctgaggccagagaatcacttgaacc

.
cag
```

Exon 11 | Start: 18018 | End: 18133 | Length: 115

```
. . . . .
ataaattgtatgtgagtataactcagtaaagctggtttattttaaacaacaacaataac
. . . . .
aaaaaacacgctaggtgcaatggcttacgtttgtaatcctagcactttgggaggccaaag
. . . . .
cagaaggattgcttgagcccacaagtttcagaacagcttgggcgacatagcacgacccca
. . . . .
tctttgcgaaaatgaaaatttagccgggtccccccaccgcctaacctcctcctgcccc
. . . . .
tgtatggtcaggctgggtggggatgggagaggcctggtgactgggaaccttttctcccag
|721      |731      |741      |751      |761      |771
CCGAGTTCCTGTTCTGGGCTTCGCTGTGCATGACCCATCTCAGCAGGATGGCCGAGGACC
E F L F W A S L C M T H L S R M A E D L
|241                                |251
|781      |791      |801      |811      |821      |831      .
TCATCCTCTACTGCACCAAGGAATTCAGCTTCGTGCAGCTCTCAGATGCCTACAGgtaag
I L Y C T K E F S F V Q L S D A Y S
|261                                |271
. . . . .
ccctgaactgccacctccatctgccgctgccggcctctgtatcccccgccgccgcgagac
. . . . .
gtggctgccttcctccccgtcccacccctccgccagacctggccattgcggcgctggacc
. . . . .
agccaagggtccagcccccttcagcgccagcacctctgtcccagcacgggaagcagcctg
. . . . .
atgccccagaagaaaaaccccgacagtttggagctgatccggagcaaggctgggcgtgtg
. . . . .
tttgggcgggtgagcaaggcagggggaggggcggggcctctgggctgatggtggg
```

Exon 12 | Start: 18302 | End: 18387 | Length: 85

```
. . . . .
gaaccttttctcccagccgagttcctgttctgggcttcgctgtgcatgacccatctcagc
. . . . .
aggatggccgaggacctcatcctctactgcaccaaggaattcagcttcgtgcagctctca
. . . . .
gatgcctacaggtaagccctgaactgccacctccatctgccgctgccggcctctgtatcc
. . . . .
cccgccgcccgcgagctggctgccttcctccccgtcccaccctccgccagacctggcc
. . . . .
attgcggcgctggaccagccaagggtccagccccttcagcgccagcacctctgtccccag
      |841      |851      |861      |871      |881      |891
CACGGGAAGCAGCCTGATGCCCCAGAAGAAAAACCCGACAGTTTGGAGCTGATCCGGAG
  T  G  S  S  L  M  P  Q  K  K  N  P  D  S  L  E  L  I  R  S
      |281                        |291

      |901      |911      . . . . .
CAAGGCTGGCGTGTGTTGGGCGGgtgagcaaggcagggggaggggcggggcctctggg
  K  A  G  R  V  F  G  R
      |301

. . . . .
ctgatgggtgggtggccaggggggcaggatcccgggtccagcccctgtgcctccctcttcc
. . . . .
cgcagtgtgccgggctcctgatgacctcaagggaacttcccagcacctacaacaagact
. . . . .
tacaggtgcgaggccgggggaggcctggctagtacgtgccagttctcagggtcttggcac
. . . . .
actcaggcagggccccaccccgggattgccatacatcctcccatcctgtgcacacagctc
. . . . .
catccgtggctgcccttgaactctc
```

Exon 13 | Start: 18487 | End: 18547 | Length: 60

```
. . . . .
cgcccgcggtgacgtggctgccttcctccccgtcccacccctccgccagacctggccattgc
. . . . .
ggcgctggaccagccaagggtccagccccttcagcgccagcacctctgtccccagcacgg
. . . . .
gaagcagcctgatgccccagaagaaaaacccgacagtttggagctgatccggagcaagg
. . . . .
ctgggcgtgtgtttgggcgggtgagcaaggcagggggaggggcggggcctctgggctgat
. . . . .
ggtgggtggccaggggggcaggatcccgggtccagcccctgtgcctccctcttcccgag
|921      |931      |941      |951      |961      |971
TGTGCCGGGCTCCTGATGACCCTCAAGGGACTTCCCAGCACCTACAACAAAGACTTACAG
C  A  G  L  L  M  T  L  K  G  L  P  S  T  Y  N  K  D  L  Q
      |311                      |321

. . . . .
gtgcgagggccgggggaggcctggctagtacgtgccagttctcagggtcttggcacactca
. . . . .
ggcagggccccaccccgggattgccatacatcctcccatcctgtgcacacagctccatcc
. . . . .
gtggctgcccttgaactctctgcccttcctttgttggggatttgagtgttcttcccatgg
. . . . .
aaggcagtggggatgcctcagtgggggggtggggctgtggggaccctgggtgccaggggg
. . . . .
ctgctaggccctcacctcctgccatgtgcctcccaggaggacaaggaagctgtgtttgaa
```

Exon 14 | Start: 18823 | End: 18907 | Length: 84

.
 agcacctacaacaaagacttacaggtgcgaggccgggggaggcctggctagtacgtgccca

 gttctcagggtcttggcacactcaggcagggccccaccccggttgcatacatcctcc

 catcctgtgcacacagctccatccgtggctgcccttgaactctctgcccttcctttgttg

 ggggtattgagtgttcttcccatggaaggcagtggggatgcctcagtgggggggtggggct

 gtggggaccctgggtgccagggggctgctaggccctcacctcctgccatgtgcctcccag
 |981 |991 |1001 |1011 |1021 |1031
 GAGGACAAGGAAGCTGTGTTTGAAGTGTCAGACACTATGAGTGCCGTGCTCCAGGTGGCC
 E D K E A V F E V S D T M S A V L Q V A
 |331 |341
 |1041 |1051 |1061
 ACTGGCGTCATCTCTACGCTGCAGGcaagacatcacccccctgcttctcctcccctaggt
 T G V I S T L Q
 |351

 cccaggcactgggggtgggcatgcggggagggtggccttgggaggaggtgaggtggggctg

 gaggacctggggcaggggaaggagaggtgtgctcgctcctgctcctggggaacagggaag

 gacagaaactgctgccatgcagtgggaagtagatgagactcagggggcctggggcctgtca

 aatggcctgaccagaactctttaaaaaaagaaaatctaaacaaaaggccaggtgcagtgg

 ctcatgcctggaatctcacacttt

Exon 15 | Start: 21217 | End: 21298 | Length: 81

.
 gaccctgtctcctaaaacagaaaacaaatcctccaggaacatctgatgcatgctgaagat

 aaggactctttgaaaacataaaggccagtaaaacatacaggccagtaagtgttcatagca

 catgtaaatattatcgataattatgagaagatggttcaagttgagagtgagacagagccg

 agtgggtaagagagtatctgccaaggcagggatgtcctggcagaggggcaggctcctggg

 cctggcagcttcagatcccagggtccccagggtcaccactcgcccacctgtgccccag

 |1071 |1081 |1091 |1101 |1111 |1121
 ATTCACCAAGAGAACATGGGACAGGCTCTCAGCCCCGACATGCTGGCCACTGACCTTGCC
 I H Q E N M G Q A L S P D M L A T D L A
 |361 |371

 |1131 |1141
 TATTACCTGGTCCGCAAAGGGgtaagtgtgtagcagccagggggagggtgaggagatggg
 Y Y L V R K G
 |381

 gtgcccccccagagggtgggggagctcaggaatgggtgcaagcggcccagcctgtgtggc

 tcaccctgtaatccagcactttgggaagccgaggtgggcgggtcacttgaggccagga

 gttcgagaccagcctggtcaacatggtgaaacccgtctcttttgatgtaaaaatacaac

 aattagctgggtgtggtggcacactcctgtaatcccagttactcgggaggctgaggcagg

 agaattgattgaactgggagg

Exon 16 | Start: 21768 | End: 21875 | Length: 107

.
 gcctggtcaacatggtgaaaccccgctctcttttgatgtaaaaatacaacaattagctggg

 tgtggtggcacactcctgtaatcccagttactcgggaggctgaggcaggagaattgattg

 aactgggagggtggagtttgcggtgaggtgagatcgcgccactgcactccagcctgggcaa

 cagagcgagactttgtgtcaaaaagaaaaaaaaaaaaaaggaagggggtgcaggcaat

 ggaggcagatcaggcatggagaaacctgcctcagcgccatcttcctccctggcaccag
 |1151 |1161 |1171 |1181 |1191 |1201
 ATGCCATTCCGCCAGGCCACGAGGCCTCCGGGAAAGCTGTGTTTCATGGCCGAGACCAAG
 M P F R Q A H E A S G K A V F M A E T K
 |391 |401
 |1211 |1221 |1231 |1241 . .
 GGGGTCGCCCTCAACCAGCTGTCACTGCAGGAGCTGCAGACCATCAGgtacggcccatcc
 G V A L N Q L S L Q E L Q T I S
 |411

 ccttccccatgctgcctcctaggaagtgagcctgggtgcctggagcccagggtggcctgg

 cgccctggcccacctcttcctctctcccagccccctgttctcgggcgacgtgatctgcg

 tgtgggactacgggcacagtgtggagcagtatggtgccctgggcggcactgcgcgctcca

 gcgtcgactggcagatccgccaggtgcgggcgctactgcaggcacagcaggcctaggtcc

 tcccacacctgccccctaataaagtgggcgcgagaggaggctgctgt

Exon 17 | Start: 21979 | End: 22555 | Length: 576

.
 aaaaaaaaaggaaggggtgcaggcaatggaggcagatcagggcacggagaaacctgcc

 tcagcgccatcttctccctggcaccagatgccattccgccaggcccacgaggcctccg

 ggaaagctgtgttcatggccgagaccaaggggtcgccctcaaccagctgtcactgcagg

 agctgcagaccatcaggtacggccatccccttccccatgctgcctcctaggaagtgagc

 ctgggtgcctggagcccagggtggcctggcgccctggcccacctcttctctctccccg
 |1251 |1261 |1271 |1281 |1291 |1301
 CCCCCTGTTCTCGGGCGACGTGATCTGCGTGTGGGACTACGGGCACAGTGTGGAGCAGTA
 P L F S G D V I C V W D Y G H S V E Q Y
 |421 |431
 |1311 |1321 |1331 |1341 |1351 |1361
 TGGTGCCCTGGGCGGCACTGCGCGCTCCAGCGTCGACTGGCAGATCCGCCAGGTGCGGGC
 G A L G G T A R S S V D W Q I R Q V R A
 |441 |451
 |1371 |1381 |1391|+1 |+11 |+21 |+31
 GCTACTGCAGGCACAGCAGGCCTAGGTCCTCCACACCTGCCCCCTAATAAAGTGGGCGC
 L L Q A Q Q A *
 |461
 |+41 |+51 |+61 |+71 |+81 |+91
 GAGAGGAGGCTGCTGTGTGTTTCCTGCCCCAGCCTGGCTCCCTCGTTGCTGGGCTTTCGG
 |+101 |+111 |+121 |+131 |+141 |+151
 GGCTGGCCAGTGGGGACAGTCAGGGACTGGAGAGGCAGGGCAGGGTGGCCTGTAATCCCA
 |+161 |+171 |+181 |+191 |+201 |+211
 GCACTTTGGAAGGGCAAGGTGCGAGGATGCTTGAGGCCAGGAGTTTGACACAGCCTGGGC
 |+221 |+231 |+241 |+251 |+261 |+271
 AACACAGGGAGACCCCATCTCTACTCAATAATAAAACAAATAGCCTGGCGTGGTGGCCC
 |+281 |+291 |+301 |+311 |+321 |+331
 ATGCATATAGTCCCAGCTACTTGTAAGGCTGAGGTGAGAGGACACTTGTGCCCAGGAGTG
 |+341 |+351 |+361 |+371 |+381 |+391

GAGGCTGCAGTGAGCTATGATCACGCCACTGCATTCCAGCCTGGATAACAGAGTGAGAAC

 |+401 |+411 |+421 |+431. . .
CTATCTCTAAAAATAAATAAATAAACGAAAAATAAAtggaagcggagaaaactgggcaag

. .
ggcaatgagagtcgtagacgggaagggaagaggggctcccatcatagcctctgctctgt

. .
ccaggcccatccccttcagacagggtatcacagtgcctcctaggccaggagcgatggc

. .
tcacgcctgtaatcctagcattttgggaggcctgggcaacaggaagactccaactacat

. .
attaaaaaaacatgaatgaaagcaaaaacaaaacaactagccaaactgggcgcggtggc

. .
tcacacctgtaatcccagcactgtaggaggctgagg