

Gene: PMS1 - Sequence: NG_008648.1
Date : January 11, 2015

Exon 1 | Start: 1 | End: 509 | Length: 508

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. . . . .
gctggtgcggtactcatcctattccaaccagaaaaccttttcccagcaggtttgccgcgc

. . . . .
tgcccacgactggcaacaatgaccttacagaccgtgaagaggctgttggtctctgccctc

. . . . .
gccggtgcctccgaagacggcgaccgcagcggcccctcaggggagtcccccctgctaga

. . . . .
ccgacagcccagcgcctctgggccagagaaaactcagcaaaagccgcccgtgctaccacc

. . . . .
tcagcgcctcccccaaccgccccttccttctcgcgccgcacgtcacgtcaggaccctg

      |-519      |-509      |-499      |-489      |-479      |-469
GGCAAGACAACGAGGATTTGCGTAGGGGGCGAGCCTCTGAGGCCACTTGGCTCTTACGGC

      |-459      |-449      |-439      |-429      |-419      |-409
CACGCAGGGCGCCGCAGATGCAGCCGAGCCCGCTTTTCCCTCTCAGGACGACCCCTAGG

      |-399      |-389      |-379      |-369      |-359      |-349
CCGCCAGCAGTTCCCTACCGACGAAGGCGACTGTACAGCGTCCACCGCGTTCGTGCCAC

      |-339      |-329      |-319      |-309      |-299      |-289
TTACCCGCCGCCCACTCCGGGCCCGGCTCGCAGCAGGACCAGCCCGGCTGCTACGGC

      |-279      |-269      |-259      |-249      |-239      |-229
CGCGGATACAGCCCTCAGGCCCGGCGCTGCGCAGCTTGCGGAAGCTTTCCCGACAGAC

      |-219      |-209      |-199      |-189      |-179      |-169
TCGCTGCCAGCGGATTGGCTGCGAGCAGGCCAATCTCACGTTGCCCCGGGCGAGGCGG

      |-159      |-149      |-139      |-129      |-119      |-109
GACTCAGTGCCGCGCTCTCTGCACCCGCTCTGCCGCGCGGTGCGTGCTGGGTGCGGGTG

      |-99       |-89       |-79       |-69       |-59       |-49
CGGGTGCGGGGTTGGGCTGCGCATCGGGTGAGACGCTGGCTGCTTGCGGCTAGTGGATG

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      | -39      | -29      . . . . .
GTAATTGCCTGCCTCGCGCTAGCAGGAAGgtagtgtggtgtgactaacgggtatttatta

. . . . .
tatcctcgatggctcgagggcccgctcccctctactcgtcctggtccgggcgcgaacgct

. . . . .
atagggcagctaaggcgctccccgcggggcggaagcgaagccgggcttgccgggcgcgc

. . . . .
acacgtggaacgcgttttctgagcaggtctgggctccggggtgttctggcttggtctttg

. . . . .
ttgcgtcccattccccagacccttctgggtggaggacttaaaattgtttccaggcagc

. . . . .
agatttaacccatggcaactgtaactcat

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Exon 2 | Start: 510 | End: 661 | Length: 151

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. . . . .
gcacctgtaatcccagctactctggaggctggggcaggggtggctgaacctgggaggcag

. . . . .
agggttgagtgagtcgagatcacgccactgcactccagcctgggtgacagcgagatttca

. . . . .
tctccaaaaaaaaaaaaagaagaaatagaagacttaatatgtatgtgctaacagttgag

. . . . .
cgtagcatcacagtaagtctcagtgaagatgatctattttcatctgtcattattattgcca

. . . . .
tttgtcctgttggtcaggaatgcttaacaattcttacaagttgcatttttatcttctagc

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|-19      |-9      |1      |11      |21      |31
CTGCTCTGTAAAAGCGAAAATGAAACAATTGCCTGCGGCAACAGTTCGACTCCTTTCAA
      M K Q L P A A T V R L L S S
      |1                      |11

|41      |51      |61      |71      |81      |91

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GTTCTCAGATCATCACTTCGGTGGTCAGTGTGTGAAAAGAGCTTATTGAAAACTCCTTGG
 S Q I I T S V V S V V K E L I E N S L D
 |21 |31

|101 |111 |121 |131
 ATGCTGGTGCCACAAGCGTAGATGTTAAACTGgtgagtgtccttgagaacccaaatacct
 A G A T S V D V K L
 |41

.
 ttaagacaaagaaaaggtctggacacatgttttctccttaaactgttacctttatttta

 tttctttacaccaataaattattcttaggacattggaccctttgtcttaagagtaaacc

 ttaaaaataaattttaatttaaattaacattatagtaacactaaaggaaatataaaagaa

 aacatgttcttttaggtctccatcacctaagacatctaagtgttgtattttctacaaatat

 tggttattcatatttccttgttttagggattt

Exon 3 | Start: 662 | End: 844 | Length: 182

.
 aaacataaattattgtttattgtaaatacccatgataatgaaacagtgaaaagcaacctt

 aaagatcagcctaacctccttattcaacagttgaatctgtgtccagagaaaacaagggag

 ttgcctgttgaccataactagaaattagtagagctgaagaatttaaactcttatatcca

 taatgctatgcttccataaaagtaaataaatgtcaaaattctttcacttgtgtttctttc

 taagtgtgataacagtttaatatatttttacatattaaaagtgttttttgacattttatagg
 |141 |151 |161 |171 |181 |191

GAGAACTATGGATTTGATAAAATTGAGGTGCGAGATAACGGGGAGGGTATCAAGGCTGTT
 E N Y G F D K I E V R D N G E G I K A V
 |51 |61
 |201 |211 |221 |231 |241 |251
 GATGCACCTGTAATGGCAATGAAGTACTACACCTCAAAAATAAATAGTCATGAAGATCTT
 D A P V M A M K Y Y T S K I N S H E D L
 |71 |81
 |261 |271 |281 |291 |301 |311
 GAAAATTTGACAACCTTACGGTTTTTCGTGGAGAAGCCTTGGGGTCAATTTGTTGTATAGCT
 E N L T T Y G F R G E A L G S I C C I A
 |91 |101

GAGgtaaggtaattatattgggtatatttagtgatttcattatcactgaacattacagtta
 E

aaactaaccagttattgggtgaagtatgggttttaattatttttattatggtaaaatatac

ataacataagccgggcgaggtggctcacgcctgtaatcccagcactttgggaggctgagg

caggtggatcacctgaggtcaggagttcgagactagcctggccaacatggtgaaaccccg

tctctactaaaaatacaaaattagctgggtatgggtgcctcacgtctgtagtcccagctac

.
 ttg

Exon 4 | Start: 845 | End: 947 | Length: 102

acataagtcataataatgcataatacaaatggcatttcaggtatacttgtttgtgtacg

agtgttttaataaagtgaataactcaaacagtaatttgcaacataaaaaaataacaagc

.
 tggcctggtgcttatttgtgtaactctaaggaatattacaaaagaactgggtcacaaatgt

 ttattaggtaaaatacgctattgagtaaataatattatgcaataatcatttcaaactcttg

 ataatgaacccatcgcaatatctaaagtgttagttttattagatgtttttttccccagg
 |321 |331 |341 |351 |361 |371
 GTTTTAATTACAACAAGAACGGCTGCTGATAATTTTAGCACCCAGTATGTTTATAGATGGC
 V L I T T R T A A D N F S T Q Y V L D G
 |111 |121
 |381 |391 |401 |411 . . .
 AGTGGCCACATACTTTCTCAGAAACCTTCACATCTTGGTCAAGgtaagaaagtagctttg
 S G H I L S Q K P S H L G Q G
 |131

 tatacaaacattctttaccttttctgtcttaattggttggttaaaaaaaaaaagttactc

 ggtgaatacaaatatattgctttgggcttggtcctgataaaggctagttaacttccaagt

 aaacattcagcctttattctagccaccaatttcttaaatatttagaattgttctcaaaag

 gaactgtatgagagactggacacttccatggactagttactcctctgtaaaaactaagag

 tatttattttaccagtgttgattaccagtgtcatcttcatat

Exon 5 | Start: 948 | End: 1111 | Length: 163

.
 acagcagatttcttatgatactgcgttcttgtaagcccatgtttctacgcagtgatagaa

 gtaagattatacttcttttagaccacatagacgaggtcatacttcgtaggtcagtccttggt

.
 acaaatagaagagtctagcatggaatcagagtagtttgcaaagttgagcctttgggtttc

 tagaattggaggaggagaccttcagttatagaaggggttaattacaaattgtatacggat

 ttgaagatctgtgacgttccttccaaatctaaatgtgcttttctcttgctgccaacagg
 |421 |431 |441 |451 |461 |471
 GTACAACTGTAAGCTTTAAGATTATTTAAGAATCTACCTGTAAGAAAGCAGTTTACT
 T T V T A L R L F K N L P V R K Q F Y S
 |141 |151
 |481 |491 |501 |511 |521 |531
 CAACTGCAAAAAAATGTAAAGATGAAATAAAAAAGATCCAAGATCTCCTCATGAGCTTTG
 T A K K C K D E I K K I Q D L L M S F G
 |161 |171
 |541 |551 |561 |571 |581 . . .
 GTATCCTTAAACCTGACTTAAGGATTGTCTTTGTACATAACAAGgtaaacattatttat
 I L K P D L R I V F V H N K
 |181 |191

 ctttataagtttctgggtatatgatataataaacaatgtataactttataaatcagttaga

 tatgggctatgactaaatgtttgtgtgccctcacaaaatttatttggtgaaaacctaacc

 accatgtgatgttattagggcatggggcctttgaggagtgaattcatgctcttaaaata

 aaggagacctcagagggtgccttccttcttctgccatgtgaggaggccactacatagtc

 agaggcaccacctatgaaccagaaagtgggacctcactagatac

Exon 6 | Start: 1112 | End: 1228 | Length: 116

.

aggcatatgtgcttgctccatatggatttttatcttccaacaactctgagaaatcttgt

.

aaagaggagaaaaccaaggtaaaggaagttaaatagatggtacactgcaacatatacag

.

cttttaaaattcagaaccagagtttcttctgtcagacctcatagctcatgaatctcttct

.

aagtgatactgaaattttaagctgaggatgaatgcaaaatataggaataaaatactgact

.

tcttgagtttagtaaactctaaattgtattaaaagttatctatatcattttgtccctagg

.

591	601	611	621	631	641
GCAGTTATTGGCAGAAAAGCAGAGTATCAGATCACAAGATGGCTCTCATGTCAGTTCTG					
A V I W Q K	S R V S D H K M A L M S V L				
	201			211	

.

651	661	671	681	691
GGGACTGCTGTTATGAACAATATGGAATCCTTTCAGTACCACTCTGAAGAATCTCAGgta				
G T A V M N N M E S F Q Y H S E E S Q				
	221			231

.

tactgcaaaaacattctcagataattctgatttactcatgaagctgttcacatatttccc

.

tttgggggagttacagtggcaagaggttagtcttttaatattttaatcaaatatgtgtgt

.

aaggtaaaacagtcaatacagagcttatgttaaacctctttcccagccctgcttcctt

.

tttatcttttctgtttgttgcttacattgattttcaaaaaattatgttcaatttagaat

.

cttttctgtttactttctactataaaagaaaaatagttggctgggcatggtgactca

Exon 7 | Start: 1229 | End: 1351 | Length: 122

.

aatgctctatgtcctatgacagttaaatatctgaaagtataaccattcatgaagatttta
.
taaatgccaatTTTTccttagagttgccaaacaaaagaggcagacagcaccagtgttagca
.
tgctttactatTTTtatttaaagttaatacttaagacatgattatcaggaagtatatggct
.
TTTTtagaccttaagatgaaaatctgtTTTTtaTTTTTatacTTTTcaaagtggtata
.
tatagccagacccgtggaactacattgttgacattgcatattctgtaattattatataga
.
|701 |711 |721 |731 |741 |751
ATTATCTCAGTGGATTCTTCCAAAGTGTGATGCAGACCACTCTTTCAGTACTTTCA
I Y L S G F L P K C D A D H S F T S L S
|241 |251
.
|761 |771 |781 |791 |801 |811
ACACCAGAAAGAAGTTTCATCTTCATAAACAGTCGACCAGTACATCAAAAAGATATCTTA
T P E R S F I F I N S R P V H Q K D I L
|261 |271
.
|821
AAGgtagtagtcttttagaaaaaaaattatttgaattggaaatttgacattgtaaca
K
.
aggactgctccaagaatttgctctaaaataaaaaaagaaatacaatgtcatttatta
.
aacattatgcatgatagaaagacatatgatgtctcttattcttcctggcaattctgga
.
ctgcattatcatccccatttatagtgaggaaacaaatgttcaatgtttctcttaggccac
.
atagccaggaaattagagagtagtagtttttttgTTTTgttttgttcttttgagat
.
gga

Exon 8 | Start: 1352 | End: 1495 | Length: 143

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. . . . .
caagtatctgggattacatgttcctgccactatgcccgctaatttttgtacttttttagt

. . . . .
agagatgggggtttcatcatgttggccaggctggtccttgaactcctgacctcaagtgatcc

. . . . .
ccccaccttggcctcccaaagtgtgggatcccaggcatgagccactgtgccgggtcatg

. . . . .
ataatgcttttcctaataagcagttgcatctactcaatttctcagttgaatttgctgggt

. . . . .
tttattgtactttttaattacatatattttttcttttatttattacatgtatttctagt

      |831      |841      |851      |861      |871      |881
TTAATCCGACATCATTACAATCTGAAATGCCTAAAGGAATCTACTCGTTTGTATCCTGTT
L I R H H Y N L K C L K E S T R L Y P V
      |281                        |291

      |891      |901      |911      |921      |931      |941
TTCTTTCTGAAAATCGATGTTTCCTACAGCTGATGTTGATGTAAATTTAACACCAGATAAA
F F L K I D V P T A D V D V N L T P D K
      |301                        |311

      |951      |961      . . . . .
AGCCAAGTATTATTACAAAATAAGgtaactcttttcagataattttttcttatgctattt
S Q V L L Q N K
      |321

. . . . .
ataaacatatattactgttttcataaaaaagatttgtttatatttatcttttttattat

. . . . .
ttaaaatcttgtctattatttttcataatttcccctaacatttgtaatttgtagtatttttag

. . . . .
gaatctgttttaattgctcttgaaaatctgatgacgacttggttatggaccattacctagt

. . . . .
acaaattcttatgaaaataataaaacagatgtttccgcagctgacatcgttcttagtaaa
```

.
acagcagaaacagatgtgcttttt

Exon 9 | Start: 1496 | End: 2385 | Length: 889

.
taatccgacatcattacaatctgaaatgcctaaaggaatctactcgtttgatcctgttt

.
tctttctgaaaatcgatgttcctacagctgatgttgatgtaaatttaacaccagataaaa

.
gccaaagtattattacaaaataaggttaactcttttcagataattttttcttatgctattta

.
taaacatatattactgttttcataataaaaagatttgtttatatttatcttttttattatt

.
taaaatcttgtctattatttttcataatttcccctaacatttgtaatttgatatttttagg

 |971 |981 |991 |1001 |1011 |1021
GAATCTGTTTAAATTGCTCTTGAAAATCTGATGACGACTTGTTATGGACCATTACCTAGT
E S V L I A L E N L M T T C Y G P L P S
 |331 |341

 |1031 |1041 |1051 |1061 |1071 |1081
ACAAATTCTTATGAAAATAATAAACAGATGTTTCCGCAGCTGACATCGTTCTTAGTAAA
T N S Y E N N K T D V S A A D I V L S K
 |351 |361

 |1091 |1101 |1111 |1121 |1131 |1141
ACAGCAGAAACAGATGTGCTTTTTAATAAAGTGAATCATCTGGAAGAATTATTCAAAT
T A E T D V L F N K V E S S G K N Y S N
 |371 |381

 |1151 |1161 |1171 |1181 |1191 |1201
GTTGATACTTCAGTCATTCCATTCCAAAATGATATGCATAATGATGAATCTGGAAAAAAC
V D T S V I P F Q N D M H N D E S G K N
 |391 |401

 |1211 |1221 |1231 |1241 |1251 |1261
ACTGATGATTGTTTAAATCACCAGATAAGTATTGGTGACTTTGGTTATGGTCATTGTAGT

T D D C L N H Q I S I G D F G Y G H C S
|411 |421

|1271 |1281 |1291 |1301 |1311 |1321
AGTGA AATTCTAACATTGATAAAACACTAAGAATGCATTTCAGGACATTTCAATGAGT
S E I S N I D K N T K N A F Q D I S M S
|431 |441

|1331 |1341 |1351 |1361 |1371 |1381
AATGTATCATGGGAGAACTCTCAGACGGAATATAGTAAACTTGTTTTATAAGTTCCGTT
N V S W E N S Q T E Y S K T C F I S S V
|451 |461

|1391 |1401 |1411 |1421 |1431 |1441
AAGCACCCAGTCAGAAAATGGCAATAAAGACCATATAGATGAGAGTGGGGAAAATGAG
K H T Q S E N G N K D H I D E S G E N E
|471 |481

|1451 |1461 |1471 |1481 |1491 |1501
GAAGAAGCAGGTCTTGAAACTCTTCGGAAATTTCTGCAGATGAGTGGAGCAGGGGAAAT
E E A G L E N S S E I S A D E W S R G N
|491 |501

|1511 |1521 |1531 |1541 |1551 |1561
ATACTTAAAAATTTCAGTGGGAGAGAATATTGAACCTGTGAAAATTTTAGTGCCTGAAAAA
I L K N S V G E N I E P V K I L V P E K
|511 |521

|1571 |1581 |1591 |1601 |1611 |1621
AGTTTACCATGTAAAGTAAGTAATAATAATTATCCAATCCCTGAACAAATGAATCTTAAT
S L P C K V S N N N Y P I P E Q M N L N
|531 |541

|1631 |1641 |1651 |1661 |1671 |1681
GAAGATTTCATGTAACAAAAAATCAAATGTAATAGATAATAAATCTGGAAAAGTTACAGCT
E D S C N K K S N V I D N K S G K V T A
|551 |561

|1691 |1701 |1711 |1721 |1731 |1741
TATGATTTACTTAGCAATCGAGTAATCAAGAAACCCATGTCAGCAAGTGTCTTTTTTGT
Y D L L S N R V I K K P M S A S A L F V
|571 |581

|1751 |1761 |1771 |1781 |1791 |1801
CAAGATCATCGTCCTCAGTTTCTCATAGAAAACTTAAGACTAGTTTAGAGGATGCAACA
Q D H R P Q F L I E N P K T S L E D A T

|591 |601
 |1811 |1821 |1831 |1841 |1851 . .
 CTACAAATTGAAGAACTGTGGAAGACATTGAGTGAAGAGGAAAACTGAAgtaagtttcc
 L Q I E E L W K T L S E E E K L K
 |611

.
 agagcttgcacgtgacttgaatgttcagctatttccattctatatgactcactgtttaa

 aagaattttttccacttcttatttatggaaaagcagatcagaaaatacctttggccttga

 tagagtaccttttttggaacacttttttttctgctaatttaggtttttgttggggcg

 ggggcttgattattttgtttttttttgtttaagccttaactgctttctgatattatta

 aatttttgctaaagttttccattcatcttctcaatttcaaaccacat

Exon 10 | Start: 2386 | End: 2871 | Length: 485

.
 gtgtttcgccattttggccaggctagtcttgaactgctgacctcaggtgatctgccaacc

 tcagcctcctaaaatgctgggattacaggtgtgaaccaccactatgcccgccaataatt

 gatttttatattttgttcagtgttgtcatagttatatgcaggagagttagtctaataca

 tgttcctttgtcattactatatctggaacaccagtactttattttataaaatttacttc

 agatgggttaatatatttctgattatgatctcattagttctattttatttctattcttaga
 |1861 |1871 |1881 |1891 |1901 |1911
 ATATGAAGAGAAGGCTACTAAAGACTTGGAACGATACAATAGTCAAATGAAGAGAGCCAT
 Y E E K A T K D L E R Y N S Q M K R A I

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|621                                |631

|1921      |1931      |1941      |1951      |1961      |1971
TGAACAGGAGTCACAAATGTCTACTAAAAGATGGCAGAAAAAAGATAAAACCCACCAGCGC
E Q E S Q M S L K D G R K K I K P T S A
|641                                |651

|1981      |1991      |2001      |2011      |2021      |2031
ATGGAATTTGGCCCAGAAGCACAAAGTTAAAAACCTCATTATCTAATCAACCAAAACTTGA
W N L A Q K H K L K T S L S N Q P K L D
|661                                |671

|2041      |2051      |2061      |2071      |2081      |2091
TGAACTCCTTCAGTCCCAAATTGAAAAAGAAGGAGTCAAAATATTAAAAATGGTACAGAT
E L L Q S Q I E K R R S Q N I K M V Q I
|681                                |691

|2101      |2111      |2121      |2131      |2141      |2151
CCCCTTTTCTATGAAAACTTAAAAATAAATTTTAAGAAACAAAACAAAGTTGACTTAGA
P F S M K N L K I N F K K Q N K V D L E
|701                                |711

|2161      |2171      |2181      |2191      |2201      |2211
AGAGAAGGATGAACCTTGCTTGATCCACAATCTCAGGTTTCCTGATGCATGGCTAATGAC
E K D E P C L I H N L R F P D A W L M T
|721                                |731

|2221      |2231      |2241      |2251      |2261      |2271
ATCCAAAACAGAGGTAATGTTATTAAATCCATATAGAGTAGAAGAAGCCCTGCTATTAA
S K T E V M L L N P Y R V E E A L L F K
|741                                |751

|2281      |2291      |2301      |2311      |2321      |2331
AAGACTTCTTGAGAATCATAAACTTCCTGCAGAGCCACTGGAAGCCAAATTATGTTAAC
R L L E N H K L P A E P L E K P I M L T
|761                                |771

|2341 . . . . .
AGAGAGgtatgatgatacaataactttttaagagtaaaaatatttattataatagttcata
E S
|781

. . . . .
ctagattaaaatcgaaggtagaagggttggaatgtttcctagtaaggattagtggtatatt
. . . . .

```

atttatTTTaatcTTTTaaacatttgatttctaggccgggcgcagtggtcatgcctgta

 atcccagcactttgggaggccaaggtgggtggatcacgaggtcaggagtttgagaccagc

 ctggccaacatagtgaaacctgtctctactaaaaatacaaaagtttagccgggtgtgatg
 . . .
 gcacgc

Exon 11 | Start: 2872 | End: 3002 | Length: 130

.
 aaaatggaattatttataaagttttcatttgtattagagagagccatttttaaatttca

 cattcaatttgtaacattctagaagacagattatcttcttctgtatactgtgtgcagta

 ggtattttaataaaaatattaacagaaatgtaaaacagtgatttctcatagggtacttata

 cctttgtattttgggttaatgatgataacacttgtcaaagggccctaggattaactttttc

 ccgtaaacccccttattttgtgtttttaataagttaaagggccataatttctttttcagt

2351	2361	2371	2381	2391	2401
TCTTTTAAATGGATCTCATTATTTAGACGTTTATATAAAATGACAGCAGATGACCAAAG					
L	F	N	G	S	H
Y	L	D	V	L	Y
K	M	T	A	D	Q
R					
		791			801

2411	2421	2431	2441	2451	2461
ATACAGTGGATCAACTTACCTGTCTGATCCTCGTCTTACAGCGAATGGTTTCAAGATAAA					
Y	S	G	S	T	Y
L	S	D	P	R	L
T	A	N	G	F	K
I	K				
		811			821

2471
ATTGATACCAGgtatgatagtgtggtttaatatTTTctgatgtggaaaaattagtcttgt							
L	I	P	G				

.
 tccaagagttacatttgggtttcatgatttacagatatggtggtatattttgtctcact

 ataagtacagtgtcagctatgttaaaacatttttttcaaaacatcacctctgcctgaaac

 aagtaagtttggcatctctttcagccaatgctttgcatttgcattttcataactaatca

 aatagttttattgtaattttgtcatcctttgacacaatatcaaactgcctgctttgtt

 taaattattaa

Exon 12 | Start: 3003 | End: 3163 | Length: 160

.
 gggactccattttctctccaaagcaagaaatgatctaacaatttaaggaacagaaacag

 caataactgggattaagttaaattatataaagcacatgtggtgtcagtgagcacttatga

 cttaatgtgagaccctatgggaaattactatttgttctccaactaaggaacaaaactttg

 tcctgactgtattaaatttgaatgagggttcactaaatgttttaacagcaatttttgttt

 ttaatggacatgttctggaatatgaacttaactatgtgtttttatttttttctttcagg

2481	2491	2501	2511	2521	2531
GAGTTTCAATTACTGAAAATTACTTGGAAATAGAAGGAATGGCTAATTGTCTCCCATTCT					
V	S	I	T	E	N
Y	L	E	I	E	G
M	A	N	C	L	P
F	Y				
831			841		

2541	2551	2561	2571	2581	2591
ATGGAGTAGCAGATTTAAAAGAAATTCTTAATGCTATATTTAAACAGAAATGCAAAGGAAG					
G	V	A	D	L	K
E	I	L	N	A	I
L	N	R	N	A	K
E	V				
851			861		

2701	2711	2721	2731	2741	2751
GACATTATCTACAGAATGAAGCACCAGTTTGGAAATGAAATTAAAGAGTGTGTTTCATGGT					
D I I Y R M K H Q F G N E I K E C V H G					
901					911
2761	2771	2781	2791	+1	+11
CGCCCATTTTTCATCATTTAACCTATCTTCCAGAACTACATGATTAAATATGTTTAAG					
R P F F H H L T Y L P E T T *					
921					931
+21	+31	+41	+51	+61	+71
AAGATTAGTTACCATTGAAATTGGTTCGTGCATAAACAGCATGAGTCTGGTTTTAAATT					
+81	+91	+101	+111	+121	+131
ATCTTTGTATTATGTGTCACATGGTTATTTTTTAAATGAGGATTCAGTACTGACTTGTTTTAA					
+141	+151	+161	+171	+181	+191
TATTGAAAAAAGTTCACGTATTGTAGAAAACGTAAATAAACTAATATAGACTATTCAtt					
.					
tgattctcaagaaccaaccatcatcataattatgagttgtaggctcaaaattggaaaata					
.					
ggtagtatTTTTgggtggttatttactaggtcctctgtgcagggagaaatcaaacatcac					
.					
acatactggcatatctgacaaacagtggtcaatatttttaaagtacaatggagagtcaga					
.					
gtgggagaaaatgagaaaacgaagtttagaggagaagaagaaaccagaaatccttccttta					
.					
acttcaatttaggggtaacagattagatggtgctgtctctttatttatatggtaatta					