

Gene: MYBPC3 - Sequence: NG_007667.1
Date : January 8, 2015

Exon 1 | Start: 1 | End: 80 | Length: 79

cttagggttatgggcccagcatgctcccaccgtacaatttgctgtaagagggaacacac
ggggccttgagtagccctgaggcttgccaaaggttggggaggcagaattgtgctgcgggg
ggtgaggggggaagggaaggagccagccagggaatgtggccctaccttctccctgga
gagacctcagctctctggaattcatctatatatttagcaggtggctggacaggaggcagata
agcagagcctggggaggggggaggtcccatatatagtggaaggacaggacccactca
|-49 |-39 |-29 |-19 |-9 |1
AGTCCCTCTTTGGGTGACCTGTGCCTGCTTCGTGCCTGGTGTGACGTCTCTCAGGATGCC
M P
|1

|11 |21
TGAGCCGGGGAAGAAGCCAGtagcttttaggactggggttgggtctaagtgtgggagcag
E P G K K P V

gggggtgtctacaattggggagcagggttaggaggagttcttgagggggttgacgagga
cgtggcctctgagccccaggacaggggcagccagtcctccagggtccttttttgattctc
ggtttctttttcccatccctctgatgagaggtgaaggtaaaccgaagtcagggaacgcag
agaggggacacagccaagacaggaagcaccggggtcaaccattctgagaatgcaaagg
gacccttccctgtccatt

Exon 2 | Start: 81 | End: 347 | Length: 266

tgtctccaagcagggaagtggacacatgcagaaaaagtcttggtgggaggtcaggacca
cagccctggctctcccgactgctagctgtgtgatcttgaggagccgcttagcttctctg

agcctcagtgctcctcctctgagaaatgaacagaataactgcaactacctcagagaactgg
 tagagtattacgtgaggggatgcatagaaagtgctagcacagtatttactgagaggggct
 gcaggggcggggtgcacgctccaaccaggggccgctgtagcctccacctggcccttcagt

 |31 |41 |51 |61 |71 |81
 TCTCAGCTTTTAGCAAGAAGCCACGGTCAGTGGAAGTGGCCGAGGCAGCCCTGCCGTGT
 S A F S K K P R S V E V A A G S P A V F
 |11 |21

 |91 |101 |111 |121 |131 |141
 TCGAGGCCGAGACAGAGCGGCAGGAGTGAAGGTGCGCTGGCAGCGCGAGGCAGTGACA
 E A E T E R A G V K V R W Q R G G S D I
 |31 |41

 |151 |161 |171 |181 |191 |201
 TCAGCGCCAGCAACAAGTACGGCCTGGCCACAGAGGGCACACGGCATACTGACAGTGC
 S A S N K Y G L A T E G T R H T L T V R
 |51 |61

 |211 |221 |231 |241 |251 |261
 GGAAGTGGGCCCTGCCGACCAGGGATCTTACGCAGTCATTGCTGGCTCCTCCAAGGTCA
 E V G P A D Q G S Y A V I A G S S K V K
 |71 |81

 |271 |281 |291
 AGTTCGACCTCAAGGTCATAGAGGCAGgtaagatcctgatcagccttccctgaggtttgg
 F D L K V I E A E
 |91

 gctgctgggggaggggcagcccagcgactctccatccatccagggaacaggaggtgcttt
 cacactttcttgccctttgctgtggctgtgcccccgccaggaacgccctttccccctttt
 ctgcacatgacctctctgagtacccccatgtgccatcctggcttggtccagccatgggggt
 aggtgggagagatgaacaagacacaaccccactctccccctgcagacctccctgggggaga
 tgacctgcacagacggccgggaagcc

Exon 3 | Start: 348 | End: 461 | Length: 113

gcagcccagctctgaggggctgctctaaggctggggcagagcagggatggacctggagctg
 ttcagggcagatgcagaggacatgggaactgatggcctgggacggggaggagaatgtgag
 aggcaggctggctctccagctcagcatgagctgcctctgaggggcccaggcagcgggagg
 acagccatggcagactttcctcatccacagcgggctcatgggtccaatgctcaggagaga
 gagggtggaggggtctctggttagtggctgcaccacgactcccacatctgatcccctccaga

	301		311		321		331		341		351
AGAAGGCAGAGCCC	ATGCTGGCCCC	TGCCCC	TGCCCC	TGCTGAGGCC	ACTGGAGCCC	CTG					
K	A	E	P	M	L	A	P	A	P	A	E
											A
											T
											G
											A
											P
											G

	361		371		381		391		401
GAGAAGCCCCGGCCCC	AGCCGCTGAGCTGGG	GAGAAAGTGCCCA	AGTCCCAA	AGgtgaga					
E	A	P	A	P	A	A	E	L	G
									E
									S
									A
									P
									S
									P
									K
									G

ggggctgggcagggaggggcaggatccgtgggtagggcgtgtccagggcaggtctcaaaa
 gcctttgctgggcccaggtgcggtggctcaggcctataatccccagtactttgggaggccg
 aggtgggcccgatcatgaggtcaggagattgagaccatcctggctaacaatgatgaaacccc
 atctctactaaaaatacaaaaaaattagccgggcgtggtggcgggcacctgcggtcccag
 ctaacttgggaggctgaggcaggagaatggtgtgaacctgggaggcggagcttg

Exon 4 | Start: 462 | End: 560 | Length: 98

gctcaggcctataatccccagtactttgggaggccgaggtgggcggatcatgaggtcagg
 agattgagaccatcctggctaacaatgatgaaaccccatctctactaaaaatacaaaaaa
 ttagccgggcgtggtggcgggcacctgcggtcccagctaacttgggaggctgaggcagga
 gaatggtgtgaacctgggaggcggagcttgacgtgagccgagattgtgcctctgcactcc
 agcctgggtgacagagcaagactccatctcaaacaacagaaaaagcctttgctcacagg

411	421	431	441	451	461
-----	-----	-----	-----	-----	-----

GGTCAAGCTCAGCAGCTCTCAATGGTCCTACCCCTGGAGCCCCGATGACCCCATTGGCC
 S S S A A L N G P T P G A P D D P I G L
 |141 |151

|471 |481 |491 |501
 TCTTCGTGATGCGGCCACAGGATGGCGAGGTGACCGTGGgtgagtgtgagctgctgtgcc
 F V M R P Q D G E V T V G
 |161

cagcattgggggtgggaagggggggcagcaggacactcccaagccgggcctgtcgcccct
 gcctttgcaggtggcagcatcaccttctcagcccgctggccggcgccagcctcctgaag
 ccgcctgtggtcaagtggttcaagggcaaattgggtggacctgagcagcaaggtgggcccag
 cacctgcagctgcacgacagctacgaccgcccagcaaggtgggtccaccggggctcgtgg
 agacacggagagaggggacatggagagccctagaaggca

Exon 5 | Start: 561 | End: 709 | Length: 148

aacctgggaggcgagcttgagtgagccgagattgtgcctctgcactccagcctgggtg
 acagagcaagactccatctcaacaacagaaaaagcctttgctcacagggtcaagctca
 gcagctctcaatggctcctaccctggagccccgatgacccattggcctcttcgtgatg
 cggccacaggatggcgaggtgaccgtgggtgagtgtagctgctgtgccagcattgggg
 tgggaagggggggcagcaggacactcccaagccgggcctgtcgcccctgcctttgcagg

|511 |521 |531 |541 |551 |561
 GTGGCAGCATCACCTTCTCAGCCCGCGTGGCCGGCGCCAGCCTCCTGAAGCCGCTGTGG
 G S I T F S A R V A G A S L L K P P V V
 |171 |181

|571 |581 |591 |601 |611 |621
 TCAAGTGGTTCAAGGGCAAATGGGTGGACCTGAGCAGCAAGGTGGGCCAGCACCTGCAGC
 K W F K G K W V D L S S K V G Q H L Q L
 |191 |201

|631 |641 |651
 TGCACGACAGCTACGACCGGCCAGCAAGgtgggtccaccggggctcgtggagacacggag

H D S Y D R A S K
|211

agaggggacatggagagccctagaaggcacaaggcacacagagggcaccatgagaccag
aggcacacacgagctgcaagcaaggggtgtggggaatctgggaggcaggtggaggggcca
ggggccacagggagatcccggaggcctgggggccagggagtgcgatgaggctcatggga
gcactgtcggggacctgggagacttgggtggacatgatcacctcaagggggcacctaataa
ggtttggccgggggtgggggggtcgcccag

Exon 6 | Start: 710 | End: 827 | Length: 117

ctccacctcctgggttcaagcgattctccacctcagcctcccagtagctgaaactaga
gggtgtgcaccaccatacttggctaattttcgttatttttagtagagacggaatttcacca
cgttggccaggctggtctggagctcctggtcttatgtgatccgcccgcctcagcctccca
aagtggggattacaggcctgagccaccgcgccggccactcccagtcctctttaagggtg
cggagccttgtctcccgcccctgggtgtcccctgacgccccgtccctccatgcacacagg

661	671	681	691	701	711
GTCTATCTGTTTCGAGCTGCACATCACCGATGCCAGCCTGCCTTCACTGGCAGCTACCGC					
V Y L F E L H I T D A Q P A F T G S Y R					
221			231		

721	731	741	751	761	771
TGTGAGGTGTCCACCAAGGACAAATTTGACTGCTCCAATTCAATCTCACTGTCCACGgt					
C E V S T K D K F D C S N F N L T V H E					
241			251		

gagggggccctggtgtctgtcctgggctcgggctcccatgggtcctggtctcctacctc
cttttcccaactaaggaggatgcctcgtcccatccagacatgagtgctggccacgtgc
ccagtgtgcacacacaggggtgtgagagaaacccaaggcttgagggtaggcgtggggg
cttagggctgagtcgggtctcatctgggtgggactctgttttatcatcttggtgtcacg

gctcctggcccatggcctggcactgtctgaatgtttgggcgatgggtgaaggtgagtt

Exon 7 | Start: 828 | End: 876 | Length: 48

tgttttatcatcttgggtgtcacggctcctggcccatggcctggcactgtctgaatgtttg
ggcgatgggtgaaggtgagttgagagatgggtgggaattggggacaataaacgtccac
ctgcctggtaccttgaccctgggaaggctgggaagggtgagatcctggggcagatgccca
gcctcatgggggtcatgaatgggcaagtctgtgaataactcagaggccgccccagggcagg
gcttctcaaacggccccctctgaagcccccttccccatctctccaccctttgaaccaga

781	791	801	811	821											
AGGCCATGGGCACCGGAGACCTGGACCTCCTATCAGCCTTCCGCCGCAC	gtgagtgcca														
A	M	G	T	G	D	L	D	L	S	A	F	R	R	T	
261											271				

tcctcagggcctgggggaggccagtgctggagtctgaggcccttcagggtctcgactggg
ggtcagggctggggatgatttgcggggcggagctgaagtcagtgggggctgcaggggaga
gcaagcttcccaggcaggtgaggatactgagtctaacccccacaggagcctggctggagg
tggctggcggatcaggtaccctgccccaggccctacctgcaccatccgcagacccccag
gggtctgagacgggtgggagcccaatctggctagtgccctttctccct

Exon 8 | Start: 877 | End: 906 | Length: 29

cgccccagggcagggttctcaaacggccccctctgaagcccccttccccatctctcca
ccctttgaaccagaggccatgggcaccggagacctggacctcctatcagccttccgccg
cacgtgagtggccatcctcagggcctgggggaggccagtgctggagtctgaggcccttca
gggtctcgactgggggtcagggtggggatgatttgcggggcggagctgaagtcagtggg
ggctgcaggggagagcaagcttcccaggcaggtgaggatactgagtctaacccccacagg

|831 |841 |851
 GAGCCTGGCTGGAGGTGGTCGCGGATCAGgtacccctgccccaggccctacctgcacca
 S L A G G G R R I S
 |281

Exon 9 | Start: 907 | End: 960 | Length: 53

|861 |871 |881 |891 |901
TGATAGCCATGAGGACACTGGGATTCTGGACTTCAGCTCACTGCTGAAAAAGAGgtgagt
D S H E D T G I L D F S S L L K K R
|291 |301

Exon 10 | Start: 961 | End: 963 | Length: 2

gcacctctctgagttgggtttccttgctctgtcgaggggatgatcccagtggtggaaggagtt
aaagggtctctgcagacattatgtcccgtaacagtcacctcacagtggtccccacggcc
actccacacttgaggctgcaaaagctccctccgtaaactccggggaccagaaggaacag
agagagggtccccagagctgcagggtctaccaggtcggcccaactgacttatgttctctc
tgccctctctctccctctccccggccctccattatggctgctgctgctgtggccaga

AGAgtaagaatcggggtctgggtgtttggggcgggcagggcgctggtgggtgcagagggg
D

attcccggtcccctctctgagaggctgtggtgagagactcagagcagggtgcggctcccca
cggacaggggtgagtcctctgtgccttgggcttctcctgccaccacctatctgtcagagc
ttaggagggataagaaaaagtaatgcacacaggaggtcctgccagagcctccggagcagc
atgggtgccccacaacacaggagtgcaagtgcggaaaataggaggaagtaaaggccca
tgg

Exon 11 | Start: 964 | End: 981 | Length: 17

tgggtgagagactcagagcagggtgcggctccccacggacaggggtgagtcctctgtgcctt
gggcttctcctgccaccacctatctgtcagagcttaggagggataagaaaaagtaatgc
acacaggaggtcctgccagagcctccggagcagcatgggtgccccacaacacaggagtg
caagtgcggaaaataggaggaagtaaaggcccatgggtggggtccaggtctttgagga
aggtggccatacctctcatgtgccacctaccctttctccccccccaccctggagcagc

|911 |921

CAGTTTCCGGACCCCGAGgtgagtgcccaacatagcacagcacccctcatcacccctaatt
S F R T P R

ctgccaggagcccctccagatccccagcccctcttcagctcccttggtggccccagtcctgc
ctggcctgggacccagagcagctccagctgccccaccagaagggaaggggcagagggaca
gggggtggctacagctccttggtcctggggcccaggaagccccgcccagggggctgcagtct
tgccccggccacagcctagactgcgggacacagggactcgaagctggaggcaccagcag
aggaggacgtgtgggaga

Exon 12 | Start: 982 | End: 1145 | Length: 163

tctccacccccaccctggagcagcagtttccggaccccagggtgagtgcccaacatag
cacagcacccctcatcacccctaattctgccaggagcccctccagatccccagcccctctt
cagctcccttggtggccccagtcctgcctggcctgggacccagagcagctccagctgcccc
ccagaagggaaggggcagagggacaggggtggctacagctccttggtcctggggcccagga
agccccgcccagggggctgcagtcttgccccggccacagcctagactgcgggacacagg

931	941	951	961	971	981
GGACTCGAAGCTGGAGGCACCAGCAGAGGAGGACGTGTGGGAGATCCTACGGCAGGCACC					
D S K L E A P A E E D V W E I L R Q A P					
311			321		

991	1001	1011	1021	1031	1041
CCCATCTGAGTACGAGCGCATCGCCTTCCAGTACGGCGTCACTGACCTGCGCGGCATGCT					
P S E Y E R I A F Q Y G V T D L R G M L					
331			341		

1051	1061	1071	1081
AAAGAGGCTCAAGGGCATGAGGCGCGATGAGAAGAAGAGCACAGgttagcccttcctcag			
K R L K G M R R D E K K S T A			
351		361	

aggggagaggagagggcacaggctagcccttcctacacaggagaggagagggcataggt

tagcccttccccacaggggagaggagaggggcacaggttagccccccacctcgtccacata
catggaaagagcgggagtcggttagcacagagactcacaggaaagaagagcccagggtta
acccttccttgtgtagaaaaagccaagaatgccaggttagcccttaccacagagatag
aagagaagagcaaaagttaggccaggacagccacaaggaaaagg

Exon 13 | Start: 1146 | End: 1278 | Length: 132

ccagctactcgggaggccgaggcaggagaatcacttgaacctgggaggcagaggttgacag
tgagccaagatggcgccattgcactccagcctggccaacagagcaagactctgtccaaaa
aacaacaaacagacaaacaaacaaaaagaaatagagacacagagaagtgaagc
ggggcggcacagaggggattggagggggggacctgggcccagccacagccacagtagct
tggcctgggggagcaggggtgcgggcgggtggggtggccggggctgaggggtgggtgctcagc

1091	1101	1111	1121	1131	1141
CCTTTCAGAAGAAGCTGGAGCCGCTACCAAGGTGAGCAAAGGCCACAAGATCCGGCTGA					
F	Q	K	K	L	E
		P	A	Y	Q
			V	S	K
				G	H
					K
					I
					R
					L
					T
		371			381

1151	1161	1171	1181	1191	1201
CCGTGGAAGTGGCTGACCATGACGCTGAGGTCAAATGGCTCAAGAATGGCCAGGAGATCC					
V	E	L	A	D	H
		D	A	E	V
			K	W	L
				K	N
				G	Q
					E
					I
					Q
		391			401

1211	1221
AGATGAGCGGCAGgtgcagcctggggtggggaggggggctcgggtggaggtggggacccc	
M	S
G	S

catagccttgccctcctgcccctctccacatgcgtatctctgactcgggtgtggctctcagc
cccatctctctgggcctaatttcccatccttttgctcctgcgggtccctctctctctctc
cttttgtctcgggctcacttcctcccgtcgggaacacttcaacggccccttctgttctac
agcaagtaagttcccctctggatggcttggggtggggggcacagggtattatcatggggcg

cactgggcccga

Exon 14 | Start: 1279 | End: 1281 | Length: 2

tggaactggctgaccatgacgctgaggtcaaattggctcaagaatggccaggagatccaga
tgagcggcaggtgcagcctggggtggggaggggggctcgggtggaggtggggaccccat
agccttgcctcctgccccctccacatgcgtatctctgactcgggtgtggctctcagcccc
atctctctgggcctaatttcccatccttttgctcctgcccgtccctctctctctctcctt
ttgtctcgggctcacttcctcccgtcgggaacacttcaacggcccccttctgttctacagc

CAAgttaagttcccctctggatggcttggggtggggggcacagggtattatcatggggcgca
K

ctgggcccggagggtgtccgcagctttcctgccacttccctgcggccccaccaggtta
catctttgagtgccatcgggtgccaaagcgtaccctgaccatcagccagtgtcattggcgga
cgacgcagcctaccagtgcgtgggtgggtggcgagaagtgtagcacggagctctttgtgaa
agggtgggcctgggacctgaggatgtgggaacctggggaggagatggcctcaggggagcca
acc

Exon 15 | Start: 1282 | End: 1406 | Length: 124

catagccttgcctcctgccccctctccacatgcgtatctctgactcgggtgtggctctcagc
cccatctctctgggcctaatttcccatccttttgctcctgcccgtccctctctctctctc
cttttgtctcgggctcacttcctcccgtcgggaacacttcaacggcccccttctgttctac
agcaagtaagttcccctctggatggcttggggtggggggcacagggtattatcatggggcg
cactgggcccggagggtgtccgcagctttcctgccacttccctgcggccccaccaggt

|1291 |1301 |1311 |1321 |1331 |1341
GGACGACGCAGCCTACCAGTGCCTGGTGGGTGGCGAGAAGTGATGACACGGAGCTCTTTGT
D D A A Y Q C V V G G E K C S T E L F V
|431 |441

ccaaccctcatgctcacccctgcttgacagagcccccgtgctcatcacgcgccccttgg
aggaccagctggtgatggtggggcagcgggtggagtttgagtgtgaagtatcggaggagg
gggcgcaagtcaaattggtgagttccagaagcacggggcatgggtgttgggggcacatctgcc
cagaagaggccacagcacttgccacccacccacccggctaggctgaaggacggggtggag
ctgac

ggtaggggggcacagggtattatcatgggggcgactggggccggagggggtgtccgcagcttt
cctgccacttcctgcgggcccccaccagggtacatctttgagtccatcggtgccaagcgt
accctgaccatcagccagtgctcattggcgggacgacgcagcctaccagtgctggtgggg
ggcgagaagtgtagcacggagctctttgtgaaagggtgggcctgggacctgaggatgtggg
aacctgggggaggagatggcctcagggggagccaaccctcatgctcacctgcctggacaga

12

gggggagcaggcaaacctgggctcaaggcctctgtgaccttgggcctttgacagcctaaac
ctcatccttctcatctctaaaatgacgatgctgaggtgaccgctccagagggtactgaga
gggtcatacgggcctgggtgagcatcaccaccctcagacacttgaggttccttatgtgca
ctgcaccatcacaggcaaacatggcacacacaggcacacgtgttttc

Exon 18 | Start: 1680 | End: 1845 | Length: 165

acagcctaaacctcatccttctcatctctaaaatgacgatgctgaggtgaccgctccaga
gggtactgagagggtcatacgggcctgggtgagcatcaccaccctcagacacttgaggtt
ccttatgtgcactgcaccatcacaggcaaacatggcacacacaggcacacgtgttttcac
atgcccacatgcaccagacacgtgcgccaccagcgcccatggggccacacgcccctccaca
gggattcacgccacaccacacaccctcccagctcaatggctctgcccctgcccctgcaga

1631	1641	1651	1661	1671	1681
AAAAGAAGCTGGAGGTGTACCAGAGCATCGCAGACCTGATGGTGGGCGCAAAGGACCAGG					
K K L E V Y Q S	I A D L M V G A K D Q A				
	551				561

1691	1701	1711	1721	1731	1741
CGGTGTTCAAATGTGAGGTCTCAGATGAGAATGTTTCGGGGTGTGTGGCTGAAGAATGGGA					
V F K C E V S D E N V R G V W L K N G K					
	571				581

1751	1761	1771	1781
AGGAGCTGTGCCCCGACAGCCGCATAAAGGTGTCCACATCGGGCGgtgagtggtgcaggg			
E L V P D S R I K V S H I G R			
	591		

caggtggatgggacaggtgggagactgagatgggagacagagagagacacagggagaaacag
agagagagagataaagacaggtgggacagagaggcagatgcacagagacaggacagagact
gagacagagacccacagagaggagaaacagacagacccaaaaagacaaagagacagaaa
gacagaaatagttctatagagacagaaagatatgcacagggaggcacacacataggagag

ttcgtcagagacagagaagaacagagggacagagacaaagaggcag

Exon 19 | Start: 1846 | End: 1952 | Length: 106

gggctggccgtgctgggcccaagttcacagagattaatgagaccagccctgccagtc
tccaagggccagccaaggagatgctttgatgtagaaatcacttttacgctgcctacctc
tgaaggcacattaaaaagctggaaaattagataatatagaaaaaaaaaggcatttttaa
aatcagaataccaacaagccaggacaaggtgagggcctcctgggacctggctggggtat
ctggcaaggccagggtgtgtggccagtggggtcccctgagccactgctcccctgcagg

|1791 |1801 |1811 |1821 |1831 |1841
GGTCCACAAACTGACCATTGACGACGTACACCTGCCGACGAGGCTGACTACAGCTTTGT
V H K L T I D D V T P A D E A D Y S F V
|601 |611

|1851 |1861 |1871 |1881 |1891
GCCCCAGGGCTTCGCCTGCAACCTGTACAGCCAAGCTCCACTTTCATGGgtgagcctgctcc
P E G F A C N L S A K L H F M E
|621 |631

agggtagggtgggtcggggcagtggggcccaggagcccctgtcactgggcccctgcctttgc
ccccgtgctacttggctcttccttctcttgagaggtaagattgacttcgtaccaggga
gggtaagtcttggggcccctgagtccttggttctgctcactttcccgcaaccacccaagc
aggcctcccctccactcacagagggaagagcaaggatcaaaagtgggggtcctggggccc
agcttcagctttgccactcatgaccatgggtcaattataatctctgt

Exon 20 | Start: 1953 | End: 1982 | Length: 29

gggcctcctgggacacctggctggggtatctggcaaggccaggggtgtgtggccagtggg
gtccctgagccactgctccctgcagggtccacaaactgaccattgacgacgtcacacc

|1901 |1911 |1921
 AGGTCAAGATTGACTTCGTACCCAGGCAGGgtaagctcttggggccctgagctcttggttc
 V K I D F V P R Q E
 |641

Exon 21 | Start: 1983 | End: 2122 | Length: 139

|1931 |1941 |1951 |1961 |1971 |1981
AACCTCCCAAGATCCACCTGGACTGCCAGGCGCATACCAGACACCATTGTGTTGTAG
P P K I H L D C P G R I P D T I V V V A
 |651 |661

|1991 |2001 |2011 |2021 |2031 |2041
CTGGAAATAAGCTACGTCTGGACGTCCTATCTCTGGGGACCCTGCTCCCACTGTGATCT
 G N K L R L D V P I S G D P A P T V I W
 |671 |681

aggaagccctcatgactgggctgctccctggctcccttcacctaagctgaccttgacct
tgaccttgctccctctcaa

Exon 23 | Start: 2204 | End: 2363 | Length: 159

gggtcttgctcctgcctggcactgttggttcttctgaaggctggggtcttgaggggtcct
catgatagctcatctgagaggacaggtggttgccccaggtcccgtgacaaagctagaacc
cgagcccctgccctcagtcggtgccacagagatgatttgaactagatgctgacgtggat
gcagtcttccacaggtgtgttcccccatggacccccgggacatctggctgttggcgg
aggctgcaagggcctctgggggtctgacttgatctcaccccaactctgcacccccccagc

2151	2161	2171	2181	2191	2201
CTGCTGTGTGAGACCGAGGGCCGGTCCGCGTGGAGACCACCAAGGACCGCAGCATCTTC					
L L C E T E G R V R V E T T K D R S I F					
	721			731	

2211	2221	2231	2241	2251	2261
ACGGTCGAGGGGGCAGAGAAGGAAGATGAGGGCGTCTACACGGTCACAGTGAAGAACCCT					
T V E G A E K E D E G V Y T V T V K N P					
	741			751	

2271	2281	2291	2301
GTGGGCGAGGACCAGGTCAACCTCACAGTCAAGGTCATCGgtgaggccggccgggtcca			
V G E D Q V N L T V K V I D			
	761		

agctggagaacacagaggggcagccccaaggagggcccatccgttcgctcattcagccac
tcgacaaacatcacgggcatgctccctgagccgagcggcaacaggacaggtttttctgcc
caaaaggagccccgctctgggggagatggaggcagatgcatccagcagatttcctgcgac
actgctgtacatgagccatgtccagagtgccgtgggagcactgagcagagagccatccct
gtgcctgggggtgatgcctttaggaggctgagaagatggt

Exon 24 | Start: 2364 | End: 2468 | Length: 104

caggacaggggtgaatatgggcagtgagaagccttaaagggttgacggagggtggcgac
atgatcagaaatgcatcctgttgagaccagcctggacaacacagtgagactccatatca
ctaaaaaaaaaaaaaaaaaaggaaaagaagaaagaatgcattctagaaagatctcttt
ggatctgggggtggtgggggcagcctgtggcggttagttggagtgggaaggggacgagca
acgttactcaaggccctgagcggggcagggtgatgtgggtccatcccaccccatccaga

2311	2321	2331	2341	2351	2361
ACGTGCCAGACGCACCTGCGGCCCCAAGATCAGCAACGTGGGAGAGGACTCCTGCACAG					
V P D A P A A P K I S N V G E D S C T V					
771			781		

2371	2381	2391	2401	2411
TACAGTGGGAGCCGCTGCCTACGATGGCGGGCAGCCCATCCTGGgtgagtgcgaaggga				
Q W E P P A Y D G G Q P I L G				
791			801	

ccggatggagggtgtgagggcgccaaacagatccgagggaagggtggtgtggggatgcctgg
gttccagaccagagctgccacctcccctgagccaggctacatcctggagcgcaagaagaa
gaagagctaccggtggatgcggctgaacttcgacctgattcaggagctgagtcatgaagc
gcggcgcatgatcagggcggtgtgtacgagatgcgctctacgcggtcaacgcatcgg
catgtccaggcccagccctgcctcccagcccttcatgcctatcgg

Exon 25 | Start: 2469 | End: 2657 | Length: 188

agttggagtgggaaggggacgagcaacgttactcaaggccctgagcggggcagggtgat
gtgggtccatcccaccccatccagacgtgccagacgcacctgcggccccaagatcagca
acgtgggagaggactcctgcacagtacagtgggagccgcctgcctacgatggcgggcagc
ccatcctgggtgagtgcaagggcaccggatggagggtgtgagggcgccaaacagatccgag

ggaaggtggtgtggggatgcctgggttccagaccagagctgccacctcccctgagccagg

2421	2431	2441	2451	2461	2471
GCTACATCCTGGAGCGCAAGAAGAAGAAGAGCTACCGGTGGATGCGGCTGAACTTCGACC					
Y I L E R K K K S Y R W M R L N F D L					
	811			821	

2481	2491	2501	2511	2521	2531
TGATTGAGGAGCTGAGTCATGAAGCGCGGCATGATCGAGGGCGTGGTGTACGAGATGC					
I Q E L S H E A R R M I E G V V Y E M R					
	831			841	

2541	2551	2561	2571	2581	2591
GCGTCTACGCGGTCAACGCCATCGGCATGTCCAGGCCAGCCCTGCCTCCAGCCCTTCA					
V Y A V N A I G M S R P S P A S Q P F M					
	851			861	

2601
TGCCTATCGGgtgagcctgcctggcctggctcctgcccccgccccctcccagttaaaaac
P I G

ctccaataatagcaggtgctctgcaggcagccatgctagacactcacatccacagtctcc
 tttcatcctcgactggggatactcagccgcattttacagatgaggaaacaggctccaagc
 agttaaatgacctgcttgagatctcccagctggttgggggtggagctgactctcacactac
 gccgaccctagttcacgtttcaagcctctctttccatgtctacaaaatgggaataatga
 cactgccta

Exon 26 | Start: 2658 | End: 2792 | Length: 134

tcaccatgttgccaggctggtcctgaactcctgacctcaggtgatcctccacctcggc
 ctcccaaagtgtgggattacaggcgtgagccaccgtgcctggctgctgttgctgtttgt
 ttttaagccaatctacagacatgtcttgtaacagggacaaaatattccttaaagtggcca
 aaagccagctgaacaggaagtgccccctatgtgaccagtgggcagttcagagtctagggc

atggatctccagcttccccaggcttgctcagaccctctctgacctctcctctgcccagg

2611	2621	2631	2641	2651	2661
GTCCCCCAGCGAACCCACCCACCTGGCAGTAGAGGACGTCTCTGACACCACGGTCTCCC					
P	P	S	E	P	T
H	L	A	V	E	D
V	S	D	T	T	V
S	L				
871			881		

2671	2681	2691	2701	2711	2721
TCAAGTGGCGGCCCCCAGAGCGCGTGGGAGCAGGAGGCCTGGATGGCTACAGCGTGGAGT					
K	W	R	P	P	E
R	V	G	A	G	G
L	D	G	Y	S	V
E	Y				
891			901		

2731
ACTGCCCAGAGGGCTgtgagtggtccccgcccccaacccccctccccaaaggaagaacatg
C P E G C
911

ctcaccttgccattgagcagattcacctgtagtcaagtttttaggccacttttgccga
aagttgaggacaccagagaaatatctgtcctgttttcagaagtaaaaaagcttgccctag
tgaaaaacaaatgcagagtaaagctgactgtaacacttctttgagcagtgcgaaatcagc
aactacattttaaaaaacatatttaaggccaggcgcatggccttacgcctgtaatcccagc
actttgggaggccaa

Exon 27 | Start: 2793 | End: 2960 | Length: 167

ctaaaaatacaaaattagccgggtgtggtggtgggcacctgtgatccagctacgcggga
ggctgaggcaggagaaatcacttgaactcgggaggcagaagttgcggtgagccaagatcat
gccattgcactccagcctgggagacaagagcgaaactccatctcaaaaataaataaacia
ataaaaaatttaaaaaaacatatttaaatcctgggagattcctatcagaggagtgggcagtg
ggagtggggtgtcagtggtgacacagcctgtggccttgccctccccctccccacccccagg

2741	2751	2761	2771	2781	2791
GCTCAGAGTGGGTGGCTGCCCTGCAGGGGCTGACAGAGCACACATCGATACTGGTGAAGG					
S	E	W	V	A	A
L	Q	G	L	T	E
H	T	S	I	L	V
K	D				
921				931	

|2861 |2871 |2881 |2891 |2901
 GAGCCCCTGTTACCACCACGGAGCCGGTGACAGTGCAGGAGATCCTGCgtgagtgccct
 A P V T T T E P V T V Q E I L Q
 |961

Exon 28 | Start: 2961 | End: 3049 | Length: 88

|2911 |2921 |2931 |2941 |2951 |2961
 AACGGCCACGGCTTCAGCTGCCCAGGCACCTGCGCCAGACCATTGAGAAGAAGGTCGGGG
 R P R L Q L P R H L R Q T I Q K K V G E
 |2971 |2981

22

ggagagaggctatagtgtgttgttcccatccagtggactgatgtctcagggtggcctga
tctgaggtaccagaggctggggtggcggccggcccttgagtgatccaggttcagggtta
agcttttccctcccctcagggaagccccggcctcagggtgacctggaccaagagggggcag
cccctggcaggcgaggaggtgagcatccgcaacagccccacagacaccatcctgttcatc
cgggccgctcgccgctgcattcaggcac

Exon 29 | Start: 3050 | End: 3245 | Length: 195

tgtggcgggccctcacttagctaccactctataccacagaacggccacggcttcagct
gccaggcacctgcccagaccattcagaagaaggctcggggagcctgtgaaccttctcat
ccctttccaggtgggactggcccccttccctgtccccaggggagagaggctatagtgtg
ttgttcccatccagtggactgatgtctcagggtggcctgatctgaggtaccagaggctg
gggtggcggccggcccttgagtgatccaggttcagggttaagcttttccctcccctcagg

3001	3011	3021	3031	3041	3051
GGCAAGCCCGGCCTCAGGTGACCTGGACCAAAGAGGGGAGCCCTGGCAGGCGAGGAG					
G K P R P Q V T W T K E G Q P L A G E E					
1001			1011		

3061	3071	3081	3091	3101	3111
GTGAGCATCCGCAACAGCCCCACAGACACCATCCTGTTTCATCCGGGCCGCTCGCCGCGTG					
V S I R N S P T D T I L F I R A A R R V					
1021			1031		

3121	3131	3141	3151	3161	3171
CATTGAGCACTTACCAGGTGACGGTGCGCATTGAGAACATGGAGGACAAGGCCACGCTG					
H S G T Y Q V T V R I E N M E D K A T L					
1041			1051		

3181
GTGCTGCAGGTTGTTGgtgcgtggccaaggcctccttgagcccccttgtttcccttcctt
V L Q V V D
1061

gggctgggctgctggggccaagggtggggccaggggacccaaccacagctcacattttc

cagtccactgccccagcaggcctggccctggttggcaggggtggggtggtccctggagcc
 agtgacccccctgctcactgtcaggaggcgtggtgacccaactgggtctgtctcccgaga
 caagccaagtcctccccaggatctccgggtgactgacgcctggggtcttaatgtggctct
 ggagtggaagccacc

Exon 30 | Start: 3246 | End: 3385 | Length: 139

cattcaggcacttaccaggtgacggtgcgcattgagaacatggaggacaaggccacgctg
 gtgctgcagggttgttgggtgcgtggccaaggcctccttgagcccccttgtttcccttcct
 gggctgggctgctggggccaagggtggggccaggggaccaaccacagctcacattttc
 cagtccactgccccagcaggcctggccctggttggcaggggtggggtggtccctggagcc
 agtgacccccctgctcactgtcaggaggcgtggtgacccaactgggtctgtctcccgaga

3191	3201	3211	3221	3231	3241
ACAAGCCAAGTCTCTCC	CAGGATCTCCGGGTG	ACTGACGCCTGGGGT	CTTAATGTGGCTC		
K P S P P Q	D L R V T D A W G L N V A L				
	1071				1081

3251	3261	3271	3281	3291	3301
TGGAGTGGAAGCCACCC	CAGGATGTCCGCAAC	ACGGAGCTCTGGGGGT	TACACAGTGCAGA		
E W K P P Q	D V G N T E L W G Y T V Q K				
	1091				1101

3311	3321
AAGCCGACAAGAAGACCATG	gtgagcccagggtctggggtccccacgtgcaccctgccta
A D K K T M	

ggcccggcagaccagggcgcagctacccttcactgtcctcaccgtggacccccctcacct
 ccctctgctgatctgaatccctccatagtaggggtggagatgccaaagggcaccagga
 ggctctcgcatcaggaaggcctggcccagagatgcctccccctccctccctgccccag
 gagtgggttcaccgtcttgagcattaccgccgcaccactgcgtgggtgccagagctcatc

attggcaatggctactactt

Exon 31 | Start: 3386 | End: 3545 | Length: 159

ggagtggaagccacccaggatgtcggcaacacggagctctgggggtacacagtgcagaa
agccgacaagaagaccatggtgagcccagggtctgggggtccccacgtgcaccctgcctag
gcccggcagaccaggccgcagctacccttcactgtcctcacgtggaccctcacctc
cctctgctgatctgaatccctccatagtaggggtggagatgccaagggcacccaggagag
gctctcggcatcaggaagggcctggcccagagatgcctcccctccctccctgccccagg

3331	3341	3351	3361	3371	3381
GAGTGGTTCACCGTCTTGGAGCATTACCGCCGACCCACTGCGTGGTGCCAGAGCTCATC					
E W F T V L E H Y R R T H C V V P E L I					
1111			1121		

3391	3401	3411	3421	3431	3441
ATTGGCAATGGCTACTACTTCCGCGTCTTCAGCCAGAATATGGTTGGCTTTAGTGACAGA					
I G N G Y Y F R V F S Q N M V G F S D R					
1131			1141		

3451	3461	3471	3481
GCGGCCACCAAGGAGCCCGTCTTTATCCCAGACCAGgtgctgtaccctcattcttc			
A A T T K E P V F I P R P G			
1151		1161	

caaccaggggctggggcagggaggctgtgggaacaggagaggggcctagctttgtgtgg
ccctctcgtaccaagtccgtgtaccaacaggcatcacctatgagccaccaactataag
gccctggacttctccgaggccccaagcttcacccagcccctgggtgaaccgctcgggtcatc
gcgggctacactgctatgctctgctgtgtgtccgggtagccccaaggtagggaacttt
aggcgctggtccaggccgaccaggaggcagggctcacagg

Exon 32 | Start: 3546 | End: 3682 | Length: 136

gatgcctccccctccctccctgcccccaggagtggttcacgctcttgagcattaccgccg
 caccactgcgtggtgccagagctcatcattggcaatggctactacttccgcgtcttcag
 ccagaatatggttggttttagtgacagagcggccaccaccaaggagcccgtctttatccc
 cagaccaggtgctgtaccctcattcttccaaccaggggctggggcagggaggctgtggga
 acagggagaggggcctagctttgtgtggccctctcggtaccaagtcctgtcaccaacagg

3491	3501	3511	3521	3531	3541
GCATCACCTATGAGCCACCAACTATAAGGCCCTGGACTTCTCCGAGGCCCAAGCTTCA					
I	T	Y	E	P	P
		N	Y	K	A
			L	D	F
				S	E
				A	P
					S
					F
					T
		1171			1181

3551	3561	3571	3581	3591	3601
CCCAGCCCCTGGTGAACCGCTCGGTCATCGCGGGCTACACTGCTATGCTCTGCTGTGCTG					
Q	P	L	V	N	R
		S	V	I	A
			G	Y	T
				A	M
				L	C
					C
					A
					V
		1191			1201

3611	3621
TCCGGGGTAGCCCCAAGgtagggaactttaggcgctggtccaggccgaccaggaggcagg	
R	G
	S
	P
	K

gctcacaggccccgacgttgagcagtcctctccccagcctgtctcccctgctttctctcc
 accttgggggtgtatggaccgggttcctccccctgggcagggccatggtactcactcttgg
 ttccatgtttgtttccagccttgggcatagtcagggactctcgtgggacccccgagtag
 aaacacagatgtgtctccctgggtccctgccaggtcccctctcagcctggatggcttccc
 tccctctctttaccta

Exon 33 | Start: 3683 | End: 3869 | Length: 186

ctttaggcgctggtccaggccgaccaggaggcagggctcacaggccccgacgttgagcag
 tcctctccccagcctgtctcccctgctttctctccaccttgggggtgtatggaccgggttc

ctccccctgggcagggccatggtactcactcttggttccatgtttgtttccagccttggg
catagt cagg gactctcgtgggacccccgagtagaaacacagatgtgtctccctgggtc
cctgccaggtcccctctcagcctggatggcttccctccctctctttaccttatttatagc

3631	3641	3651	3661	3671	3681
CCCAAGATTTCCTGGTTCAAGAATGGCCTGGACCTGGGAGAAGACGCCCGCTTCCGCATG					
P K I S W F K N G L D L G E D A R F R M					
1211			1221		

3691	3701	3711	3721	3731	3741
TTCAGCAAGCAGGAGTGTGACTCTGGAGATTAGAAAGCCCTGCCCCTTTGACGGGGGC					
F S K Q G V L T L E I R K P C P F D G G					
1231			1241		

3751	3761	3771	3781	3791	3801
ATCTATGTCTGCAGGGCCACCAACTTACAGGGCGAGGCACGGTGTGAGTGCCGCCTGGAG					
I Y V C R A T N L Q G E A R C E C R L E					
1251			1261		

3811
GTGCGAGgtgaggagccctcggggccagggcctgggagatgggaagagcgggcggcagtg
V R V
1271

gggaccctgggctttgctccgttgtcctcggccaagcacctgccctggctgcaagggcac
ggaccctgccacgcccagatgggcaatagcttccagaaggctgggaggacacagtacat
ggcctcctcttctgcagtgacctcagtgaccaggctggctcctggggatggccaggtatgt
accacccgacaccagggcacaaagtcagtggctgagccctggcccttggtcctggggcag
ccatcag

Exon 34 | Start: 3870 | End: 3906 | Length: 36

ttgactctggagattagaaagccctgcccctttgacggggcatctatgtctgcagggcc
accaacttacaggcgaggcacggtgtgagtgccgcctggaggtgaggtgaggagccc
tcggggccagggcctgggagatgggaagagcgggcggcagtggggaccctgggctttgct

ccgttgctcctcggccaagcacctgccctggctgcaagggcacggaccctgccacgcccag
atgggcaatagcttcagaaggctgggaggacacagtgacatggcctcctcttctgcagt
|3821 | +11 | +21
TGCTCAGTGACCAGGCTGGCTCCTGGGGATGGCCAGgtatgtaccacccgacaccagg
P Q *

gcacaagtcagtggtgagccctggcccttggtcctggggcagccatcagtaaattgggag
gctgtaggggccctccattcactcgtagataacctgtgttcaggtacaaccggatgcc
agccccgtgccaggagcctggagggaagttggggaaacccctccctactgttgatgtat
gtgtgacaagtgtgtctcctgtgtcgcgatgggggatcagcagggcagttgtcgggcagt
cctgagtggggtgttgacagactgggtccacagggtc

Exon 35 | Start: 3907 | End: 4217 | Length: 310

accctgggctttgctccgttgctcctcggccaagcacctgccctggctgcaagggcacgga
ccctgccacgcccagatgggcaatagcttcagaaggctgggaggacacagtgacatggc
ctcctcttctgcagtgacctcagtgaccaggctggctcctggggatggccaggtatgtacc
acccgacaccagggcacaagtcagtggtgagccctggcccttggtcctggggcagcca
tcagtaaattgggaggctgtaggggccctccattcactcgtagataacctgtgttcagg
|+31 | +41 | +51 | +61 | +71 | +81
GTACAACCGGATGCCAGCCCCGTGCCAGGAGCCTGGAGGGAAGTTGGGGAAACCCCTCCC
|+91 | +101 | +111 | +121 | +131 | +141
TACTGTTGGATGTATGTGTGACAAGTGTGTCTCCTGTGCTGCGATGGGGGATCAGCAGGG
|+151 | +161 | +171 | +181 | +191 | +201
CAGTTGTCGGGCAGTCCTGAGTGGGTGTTGCACAGACTGGTCCACAGGGCTCCTGAAGGA
|+211 | +221 | +231 | +241 | +251 | +261
AGCCCCTGGATCTTTGGGGTAAAAGGAGGGTGGCCTCAAGAAACAATGTCTGGGGACAGG

|+271 |+281 |+291 |+301 |+311 |+321
CCTTTCTGGCCTGCTATGTCTTCCAATGTTTATTGGGCAATAAAAGATAAGTGCAGTCA

|+331
CAGAGAACTCActcttctcaatttcggtgtgcctgttttcataaaaatgcacaggggatg
gccaggtgcggtggctcatgcctgttatcccagcactttgggaggcggaggcgggccgat
cacctgaggtcaggagatcaagaccagcctggccaacatggtgaaacccgtctctacta
aaaatacaaaaattagctgggcaaggtggcgcgcctataatcccagctatgtgaaggct
gaggcaggagaatcacctgaaccaggaggtagagtttgaggtgggccgagatcatgcca
ctgcacttcag