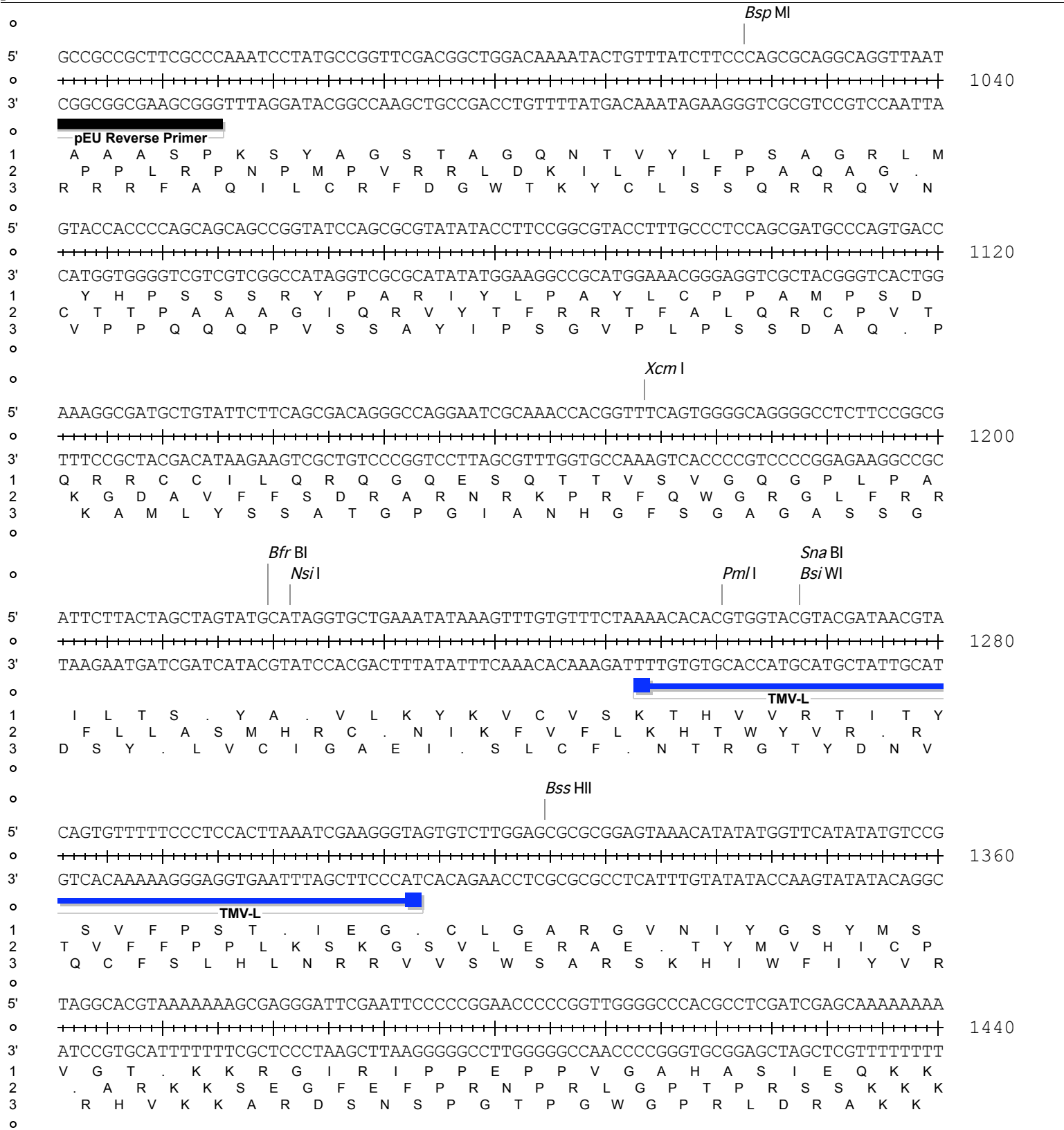


[illegible]

GAGAATGCATATAGTAAAGACTTTTGAAACTCTCAAAGTTGATTTTCTTAGCAAGTTACCTGAAATGCTGAAAATGTTCCG  
 560  
 CTCTTAACGTATATCATTCTGAAACTTTGAGAGTTTCAACTAAAAGAATCGTTTCGATGGACTTTACGACTTTTACAAGC  
 GST  
 E N C I . . R L . N S Q S . F S . Q A T . N A E N V R  
 R I A Y S K D F E T L K V D F L S K L P E M L K M F  
 R E L H I V K T L K L S K L I F L A S Y L K C . K C S  
 SwaI BclI  
 AAGATCGTTTATGTCATAAAACATATTTAAATGGTGATCATGTAACCCATCCTGACTTCATGTTGTATGACGCTCTTGAT  
 640  
 TTCTAGCAAATACAGTATTTTGTATAAATTTACCACTAGTACATTGGGTAGGACTGAAGTACAACATACTGCGAGAACTA  
 GST  
 R S F M S . N I F K W . S C N P S . L H V V . R S .  
 E D R L C H K T Y L N G D H V T H P D F M L Y D A L D  
 K I V Y V I K H I . M V I M . P I L T S C C M T L L M  
 GTTGTTTTATACATGGACCCAATGTGCCTGGATGCGTTCCCAAATTAGTTTGTTTTAAAAAACGTATTGAAGCTATCCC  
 720  
 CAACAAAATATGTACCTGGGTACACGGACCTACGCAAGGGTTTAAATCAAACAAAATTTTTCGATAACTTCGATAGGG  
 GST  
 GST Fo...Primer  
 C C F I H G P N V P G C V P K I S L F . K T Y . S Y P  
 V V L Y M D P M C L D A F P K L V C F K K R I E A I P  
 L F Y T W T Q C A W M R S Q N . F V L K N V L K L S  
 ACAAATTGATAAGTACTTGAAATCCAGCAAGTATATAGCATGGCCTTTGCAGGGCTGGCAAGCCACGTTTGGTGGTGGCG  
 800  
 TGTTTAACTATTCATGAACCTTAGGTTCGTTTCATATATCGTACCGGAAACGTCCCGACCGTTTCGGTGCAAACCACCACCGC  
 GST  
 GST F...rimer  
 T N . V L E I Q Q V Y S M A F A G L A S H V W W W R  
 Q I D K Y L K S S K Y I A W P L Q G W Q A T F G G G  
 H K L I S T . N P A S I . H G L C R A G K P R L V V A  
 PspXI XmaI KpnI  
 AclI SmaI NotI  
 XhoI BamHI Acc 65I EagI SpeI  
 ACCATCCTCCAAAATCGGATCTGGAAGTTCTGTTCCAGGGGCCCTCGAGGATCCCGGGTACCGCGGCCGCACTAGTTTT  
 880  
 TGGTAGGAGGTTTTAGCCTAGACCTTCAAGACAAGGTCCCCGGGGAGCTCCTAGGGCCCATGGCGCCGGCGTGATCAAAA  
 GST 3C Cleavage  
 P S S K I G S G S S V P G A P R G S R V P R P H . F  
 D H P P K S D L E V L F Q G P L E D P G Y R G R T S F  
 T I L Q N R I W K F C S R G P S R I P G T A A A L V L  
 PshAI  
 GTATAGAATTTACGGCTAGCGCCGGATGCGACGCCGGTCGCGTCTTATCCGGCCTTCCTATATCAGGCTGTGTTTAAGAC  
 960  
 CATATCTTAAATGCCGATCGCGGCCTACGCTGCGGCCAGCGCAGAATAGGCCGGAAGGATATAGTCCGACACAAATTCG  
 pE...er  
 C I E F T A S A G C D A G R V L S G L P I S G C V . D  
 V . N L R L A P D A T P V A S Y P A F L Y Q A V F K T  
 Y R I Y G . R R M R R R S R L I R P S Y I R L C L R



*Hin dIII*

5' AAAAAAGAAAAAAAAAAAAAAAAAAGCTTCCCGCGGCCAGCTTGGCGTAATCATGGTCATAGCTGTTTCCTGTGTGAA  
 1520  
 3' TTTTTTCTTTTTTTTTTTTTTTTTTTCGAAAGGGCGCCGGTTCGAACCGCATTAGTACCAGTATCGACAAAGGACACACTT  
 1 K K E K K K K K K L S R G Q L G V I M V I A V S C V K  
 2 K K K K K K K K S F P A A S L A . S W S . L F P V .  
 3 K K R K K K K K K A F P R P A W R N H G H S C F L C E  
 5' ATTGTTATCCGCTCACAATTCCACACAACATACGAGCCGGAAGCATAAAGTGTAAGCCTGGGGTGCCTAATGAGTGAGC  
 1600  
 3' TAACAATAGGCGAGTGTTAAGGTGTGTTGTATGCTCGGCCTTCGTATTTACATTTTCGGACCCACGGATTACTCACTCG  
 1 L L S A H N S T Q H T S R K H K V . S L G C L M S E  
 2 N C Y P L T I P H N I R A G S I K C K A W G A . . V S  
 3 I V I R S Q F H T T Y E P E A . S V K P G V P N E . A  
 Pvu II  
 5' TAACTCACATTAATTGCGTTGCGCTCACTGCCCCTTTCCAGTCGGGAAACCTGTCTGCCAGCTGCATTAATGAATCGG  
 1680  
 3' ATTGAGTGTAATTAACGCAACGCGAGTGACGGGCGAAAGGTCAGCCCTTTGGACAGCACGGTCGACGTAATTACTTAGCC  
 1 L T H I N C V A L T A R F P V G K P V V P A A L M N R  
 2 . L T L I A L R S L P A F Q S G N L S C Q L H . . I G  
 3 N S H . L R C A H C P L S S R E T C R A S C I N E S  
 Bsa XI' Bsa XI  
 5' CCAACGCGCGGGGAGAGGCGGTTTGCGTATTGGGCGCTCTTCCGCTTCCTCGCTCACTGACTCGCTGCGCTCGGTCGTTT  
 1760  
 3' GGTTGCGCGCCCCTCTCCGCCAAACGCATAACCCGCGAGAAGGCGAAGGAGCGAGTGACTGAGCGACGCGAGCCAGCAAG  
 1 P T R G E R R F A Y W A L F R F L A H . L A A L G R S  
 2 Q R A G R G G L R I G R S S A S S L T D S L R S V  
 3 A N A R G E A V C V L G A L P L P R S L T R C A R S F  
 5' GGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAAC  
 1840  
 3' CCGACGCCGCTCGCCATAGTCGAGTGAGTTTCCGCCATTATGCCAATAGGTGTCTTAGTCCCTATTGCGTCTTTCTTG  
 1 A A A S G I S S L K G G N T V I H R I R G . R R K E  
 2 R L R R A V S A H S K A V I R L S T E S G D N A G K N  
 3 G C G E R Y Q L T Q R R . Y G Y P Q N Q G I T Q E R T  
 5' ATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCC  
 1920  
 3' TAACTCGTTTTTCCGGTCGTTTCCGGTCCTTGGCATTTTTCCGGCGCAACGACCGCAAAAAGGTATCCGAGGCGGGGG  
 1 H V S K R P A K G Q E P . K G R V A G V F P . A P P P  
 2 M . A K G Q Q K A R N R K K A A L L A F F H R L R P P  
 3 C E Q K A S K R P G T V K R P R C W R F S I G S A P  
 5' TGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCC  
 2000  
 3' ACTGCTCGTAGTGTTTTAGCTGCGAGTTCAGTCTCCACCGCTTTGGGCTGTCCTGATATTTCTATGGTCCGCAAAGGGG  
 1 . R A S Q K S T L K S E V A K P D R T I K I P G V S P  
 2 D E H H K N R R S S Q R W R N P T G L . R Y Q A F P  
 3 L T S I T K I D A Q V R G G E T R Q D Y K D T R R F P  
 5' CTGGAAGCTCCCTCGTGCGCTCTCTGTTCGACCCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGC  
 2080  
 3' GACCTTCGAGGGAGCACGCGAGAGGACAAGGCTGGGACGGCGAATGGCTTATGGACAGGCGGAAAGAGGGGAAGCCCTTCG  
 1 W K L P R A L S C S D P A A Y R I P V R L S P F G K  
 2 P G S S L V R S P V P T L P L T G Y L S A F L P S G S  
 3 L E A P S C A L L F R P C R L P D T C P P F S L R E A

pEU-GST

5'

GTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGA

+

3'

CACCGCGAAAGAGTATCGAGTGCACATCCATAGAGTCAAGCCACATCCAGCAAGCGAGGTTTCGACCCGACACACGTGCT

1

R G A F S . L T L . V S Q F G V G R S L Q A G L C A R

2

V A L S H S S R C R Y L S S V . V V R S K L G C V H E

3

W R F L I A H A V G I S V R C R S F A P S W A V C T

o

5'

ACCCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGC

+

3'

TGGGGGGCAAGTCGGGCTGGCGACGCGGAATAGGCCATTGATAGCAGAACTCAGGTTGGGCCATTCTGTGCTGAATAGCG

1

T P R S A R P L R L I R . L S S . V Q P G K T R L I A

2

P P V Q P D R C A L S G N Y R L E S N P V R H D L S

3

N P P F S P T A A P Y P V T I V L S P T R . D T T Y R

o

o

A/wNI

5'

CACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCT

+

3'

GTGACCGTCGTCGGTGACCATTGTCTAATCGTCTCGCTCCATACATCCGCCACGATGTCTCAAGAACTTCACCACCGGA

1

T G S S H W . Q D . Q S E V C R R C Y R V L E V V A

2

P L A A A T G N R I S R A R Y V G G A T E F L K W W P

3

H W Q Q P L V T G L A E R G M . A V L Q S S . S G G L

o

5'

AACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAG

+

3'

TTGATGCCGATGTGATCTTCTGTCTAATAACCATAGACGCGAGACGACTTCGGTCAATGGAAGCCTTTTTCTCAACCATC

1

. L R L H . K D S I W Y L R S A E A S Y L R K K S W .

2

N Y G Y T R R K T V F G I C A L L K P V T F G K R V G S

3

T T A T L E G Q Y L V S A L C . S Q L P S E K E L V

o

5'

CTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAG

+

3'

GAGAACTAGGCCGTTTGTGTTGGTGCGACCATCGCCACCAAAAAACAAACGTTTCGTCGTCTAATGCGCGTCTTTTTTTC

1

L L I R Q T N H R W . R W F F C L Q A A D Y A Q K K R

2

S . S G K Q T T A G S G G F F V C K Q Q I T R R K K

3

A L D P A N K P P L V A V V F L F A S S R L R A E K K

o

5'

GATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTC

+

3'

CTAGAGTTCTTCTAGGAAACTAGAAAAGATGCCCCAGACTGCGAGTCACTTGTCTTTTGAGTGCAATTCCCTAAAACCAG

1

I S R R S F D L F Y G V . R S V E R K L T L R D F G

2

G S Q E D P L I F S T G S D A Q W N E N S R . G I L V

3

D L K K I L . S F L R G L T L S G T K T H V K G F W S

o

5'

ATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTAAATCAATCTAAAGTATATATGA

+

3'

TACTCTAATAGTTTTTCTAGAAAGTGATCTAGGAAAATTTAATTTTACTTCAAAATTTAGTTAGATTTTCATATATACT

1

H E I I K K D L H L D P F K L K M K F . I N L K Y I .

2

M R L S K R I F T . I L L N . K . S F K S I . S I Y E

3

. D Y Q K G S S P R S F . I K N E V L N Q S K V Y M

o

5'

GTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAG

+

3'

CATTTGAACCAGACTGTCAATGGTTACGAATTAGTCACTCCGTGGATAGAGTCGCTAGACAGATAAAGCAAGTAGGTATC

o

o

1

V N L V . Q L P M L N Q . G T Y L S D L S I S F I H S

2

. T W S D S Y Q C L I S E A P I S A I C L F R S S I

3

S K L G L T V T N A . S V R H L S Q R S V Y F V H P .

o

2160

2240

2320

2400

2480

2560

2640

2720

AMP

		AhdI		BsaI	
0					
5'	TTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGA				
0	+++++				2800
3'	AACGGACTGAGGGGCAGCACATCTATTGATGCTATGCCCTCCCGAATGGTAGACCGGGGTCACGACGTTACTATGGCGCT				
0		AMP			
1	C L T P R R V D N Y D T G G L T I W P Q C C N D T A				
2	V A . L P V V . I T T I R E G L P S G P S A A M I P R				
3	L P D S P S C R . L R Y G R A Y H L A P V L Q . Y R E				
0					
5'	GACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTCTGCAAC				
0	+++++				2880
3'	CTGGGTGCGAGTGGCCGAGGTCTAAATAGTCGTTATTTGGTCGGTCGGCCTTCCCGGCTCGCGTCTTCACCAGGACGTTG				
0		AMP			
1	R P T L T G S R F I S N K P A S R K G R A Q K W S C N				
2	D P R S P A P D L S A I N Q P A G R A E R R S G P A T				
3	T H A H R L Q I Y Q Q . T S Q P E G P S A E V V L Q				
0					
0				FspI	
5'	TTTATCCGCTCCATCCAGTCTATTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACG				
0	+++++				2960
3'	AAATAGGCGGAGGTAGGTCAGATAATTAACAACGGCCCTTCGATCTCATTCATCAAGCGGTCAATTATCAAACGCGTTGC				
0		AMP			
1	F I R L H P V Y . L L P G S . S K . F A S . . F A Q R				
2	L S A S I Q S I N C C R E A R V S S S P V N S L R N				
3	L Y P P P S S L L I V A G K L E . V V R Q L I V C A T				
0					
5'	TTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCA				
0	+++++				3040
3'	AACAACGGTAACGATGTCCGTAGCACACAGTGCAGCAGCAAACCATAACCGAAGTAAGTCGAGGCCAAGGGTTGCTAGT				
0		AMP			
1	C C H C Y R H R G V T L V V W Y G F I Q L R F P T I				
2	V V A I A T G I V V S R S S F G M A S F S S G S Q R S				
3	L L P L L Q A S W C H A R R L V W L H S A P V P N D Q				
0					
5'	AGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTGAGAAGTAAGTT				
0	+++++				3120
3'	TCCGCTCAATGTACTAGGGGGTACAACACGTTTTTTTCGCCAATCGAGGAAGCCAGGAGGCTAGCAACAGTCTTCATTCAA				
0		AMP			
1	K A S Y M I P H V V Q K S G . L L R S S D R C Q K . V				
2	R R V T . S P M L C K K A V S S F G P P I V V R S K L				
3	G E L H D P P C C A K K R L A P S V L R S L S E V S				
0					
5'	GGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTGTCATGCCATCCGTAAGATGCTTTTCTG				
0	+++++				3200
3'	CCGGCGTCACAATAGTGAGTACCAATACCGTCGTGACGTATTAAGAGAATGACAGTACGGTAGGCATTCTACGAAAAGAC				
0		AMP			
1	G R S V I T H G Y G S T A . F S Y C H A I R K M L F C				
2	A A V L S L M V M A A L H N S L T V M P S V R C F S				
3	W P Q C Y H S W L W Q H C I I L L L S C H P . D A F L				
0					
5'	TGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGG				
0	+++++				3280
3'	ACTGACCACTCATGAGTTGGTTTCAGTAAGACTCTTATCACATACGCCGCTGGCTCAACGAGAACGGGCCGAGTTATGCC				
0		AMP			
1	D W . V L N Q V I L R I V Y A A T E L L L P G V N T				
2	V T G E Y S T K S F . E . C M R R P S C S C P A S I R				
3	. L V S T Q P S H S E N S V C G D R V A L A R R Q Y G				
0					

5' GATAATACCGCGCCACATAGCAGAACCTTTAAAAGTGCTCATCATTTGGAAAACGTTCTTCGGGGCGAAAACTCTCAAGGAT  
3' CTATTATGGCGCGGTGTATCGTCTTGAAATTTTCACGAGTAGTAACCTTTTGCAAGAAGCCCCGCTTTTGAGAGTTCCTA  
AMP  
1 G . Y R A T . Q N F K S A H W K T F F G A K T L K D  
2 D N T A P H S R T L K V L I I G K R S S G R K L S R I  
3 I I P R H I A E L . K C S S L E N V L R G E N S Q G  
5' CTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACCTGATCTTCAGCATCTTTTACTTTCACCAGCG  
3' GAATGGCGACAACCTCTAGGTCAAGCTACATTGGGTGAGCACGTGGGTGACTAGAAGTCGTAGAAAATGAAAGTGGTCGC  
AMP  
1 L T A V E I Q F D V T H S C T Q L I F S I F Y F H Q R  
2 L P L L R S S S M . P T R A P N . S S A S F T F T S  
3 S Y R C . D P V R C N P L V H P T D L Q H L L L S P A  
5' TTTCTGGGTGAGCAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATA  
3' AAAGACCCACTCGTTTTTGTCTTCCGTTTTACGGCGTTTTTTTCCCTTATTCCCGCTGTGCCCTTACAACCTTATGAGTAT  
AMP  
1 F W V S K N R K A K C R K K G N K G D T E M L N T H  
2 V S G . A K T G R Q N A A K K G I R A T R K C . I L I  
3 F L G E Q K Q E G K M P Q K R E . G R H G N V E Y S Y  
Ssp I  
5' CTCTTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAA  
3' GAGAAGGAAAAAGTTATAATAACTTCGTAAATAGTCCCAATAACAGAGTACTCGCCTATGTATAAACTTACATAAATCTT  
1 T L P F S I L L K H L S G L L S H E R I H I . M Y L E  
2 L F L F Q Y Y . S I Y Q G Y C L M S G Y I F E C I . K  
3 S S F F N I I E A F I R V I V S . A D T Y L N V F R  
Zra I  
Aat II  
5' AAATAAACAAATAGGGGTTCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACAT  
3' TTTATTTGTTTATCCCCAAGGCGCGTGTAAAGGGGCTTTTTCACGGTGGACTGCAGATTCTTTGGTAATAATAGTACTGTA  
1 K . T N R G S A H I S P K S A T . R L R N H Y I Y H D I  
2 N K Q I G V P R T F P R K V P P D V . E T I I I M T  
3 K I N K . G F R A H F P E K C H L T S K K P L L S . H  
5' TAACCTATAAAAATAGGCGTATCACGAGGCCCTTTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACCTCTGACACATG  
3' ATTGGATATTTTTATCCGCATAGTGCTCCGGGAAAGCAGAGCGCGCAAAGCCACTACTGCCACTTTTGGGAGACTGTGTAC  
1 N L . K . A Y H E A L S S R A F R . . R . K P L T H  
2 L T Y K N R I T R P F R L A R F G D D G E N L . H M  
3 . P I K I G V S R G P F V S R V S V M T V K T S D T C  
Pfo I  
5' CAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGT  
3' GTCGAGGGCCTCTGCCAGTGTGCAACAGACATTTCGCCTACGGCCCTCGTCTGTTTCGGGCAGTCCCGCGCAGTCGCCCACA  
1 A A P G D G H S L S V S G C R E Q T S P S G R V S G C  
2 Q L P E T V T A C L . A D A G S R Q A R Q G A S A G V  
3 S S R R R S Q L V C K R M P G A D K P V R A R Q R V

5' TGGCGGGTGTCTGGGGCTGGCTTAACATATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATATCGACGCTCTCCCTT 3920  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' ACCGCCACAGCCCCGACCGAATTGATACGCCGTAGTCTCGTCTAACATGACTCTCACGTGGTATAGCTGCGAGAGGGAA  
1 W R V S G L A . L C G I R A D C T E S A P Y R R S P L  
2 G G C R G W L N Y A A S E Q I V L R V H H I D A L P  
3 L A G V G A G L T M R H Q S R L Y . E C T I S T L S L  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
5' ATGCGACTCCTGCATTAGGAAGCAGCCCAGTAGTAGGTTGAGGCCGTTGAGCACCGCCGCCGAAGGAATGGTGCATGCA 4000  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' TACGCTGAGGACGTAATCCTTCGTCTGGGTCATCATCCAACCTCCGGCAACTCGTGGCGGCGCGCTTCCTTACCACGTACGT  
1 C D S C I R K Q P S S R L R P L S T A A A R N G A C  
2 Y A T P A L G S S P V V G . G R . A P P P Q G M V H A  
3 M R L L H . E A A Q . . V E A V E H R R R K E W C M Q  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
5' AGGAGATGGCGCCCAACAGTCCCCCGGCCACGGGGCCTGCCACCATACCCACGCCGAAACAAGCGCTCATGAGCCCGAAG 4080  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' TCCTCTACCGCGGGTTGTCAGGGGGCCGGTGCCCCGGACGGTGGTATGGGTGCGGCTTTGTTTCGCGAGTACTCGGGCTTC  
1 K E M A P N S P P A T G P A T I P T P K Q A L M S P K  
2 R R W R P T V P R P R G L P T Y P R R N K R S . A R S  
3 G D G A Q Q S P G H G A C H H T H A E T S A H E P E  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
5' TGGCGAGCCCGATCTTCCCCATCGGTGATGTCGGCGATATAGGCGCCAGCAACCGCACCTGTGGCGCCGGTGATGCCGGC 4160  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' ACCGCTCGGGCTAGAAGGGGTAGCCACTACAGCCGCTATATCCGCGGTCGTGTCGGTGGACACCGCGGCCACTACGGCCG  
1 W R A R S S P S V M S A I . A P A T A P V A P V M P A  
2 G E P D L P H R . C R R Y R R Q Q P H L W R R . C R  
3 V A S P I F P I G D V G D I G A S N R T C G A G D A G  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
5' CACGATGCGTCCGGCGTAGAGGATCTGGCTAGCGATGACCCCTGCTGATTGGTTTCGCTGACCATTTCCGGGGTGCGGAACG 4240  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' GTGCTACGCAGGCCGCATCTCCTAGACCGATCGCTACTGGGACGACTAACCAAGCGACTGGTAAAGGCCCCACGCCTTGC  
1 T M R P A . R I W L A M T L L I G S L T I S G V R N  
2 P R C V R R R G S G . R . P C . L V R . P F P G C G T  
3 H D A S G V E D L A S D D P A D W F A D H F R G A E R  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
5' GCGTTACCAGAACTCAGAAGGTTTCGTCCAACCAACCGACTCTGACGGCAGTTTACGAGAGAGATGATAGGGTCTGCTT 4320  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' CGCAATGGTCTTTGAGTCTTCCAAGCAGGTTGGTTTGGCTGAGACTGCCGTCAAATGCTCTCTCTACTATCCCAGACGAA  
1 G V T R N S E G S S N Q T D S D G S L R E R . . G L L  
2 A L P E T Q K V R P T K P T L T A V Y E R D D R V C F  
3 R Y Q K L R R F V Q P N R L . R Q F T R E M I G S A  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
5' CAGTAAGCCAGATGCTACACAATTAGGCTTGTACATATTG 4360  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' GTCATTGCGTCTACGATGTGTTAATCCGAACATGTATAAC  
1 Q . A R C Y T I R L V H I  
2 S K P D A T Q L G L Y I L  
3 S V S Q M L H N . A C T Y .