



1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGTTCGGCAATTGAACGGGTGCCTA  
101 GAGAAGGTGGCGCGGGTAAACTGGGAAAGTATGTCGTGACTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC  
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCCGTTGAGTCCGCTTTCGCCGCTCCCGCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

BspLU111 (560)

**AgeI (552)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCAACATGTCCTTTGTGGGGAGAAGTCAAGGAGTAAAATGGG  
1 M S F V G E N S G V K M G  
601 CTCTGAGGACTGGGAAAAGATGAACCCAGTGTCTGTTAGAAGACCCGGCTGAAGCCCCCTGGAACCAGGCCAAGCTCCCGCCATGAATTTTGT  
13 S E D W E K D E P Q C C L E D P A V S P L E P G P S L P A M N F V  
701 CACACAAGTCCAAAGGTGAAGAACTTAAACCCGAAGAAATTCAGCATTTCATGACCAGGATCACAAAGTACTGGTCTGGACTCTGGGAATCTCATAGCAG  
47 H T S P K V K N L N P K K F S I H D Q D H K V L V L D S G N L I A  
801 TTCCAGATAAAAACATACAGCCAGAGATCTTCTTGCATTAGCCTCATCCTTGCAGCTCAGCCTCTGCGGAGAAAGGAAGTCCGATTCTCCTGGGGT  
80 V P D K N Y I R P E I F F A L A S S L S S A S A E K G S P I L L G V  
901 CTCTAAAGGGGAGTTTTGTCTACTGTGACAAGGATAAAGGACAAAGTCATCCATCCCTTTCAGTGAAGAAGGAGAAACTGATGAAGCTGGCTGCCAA  
113 S K G E F C L Y C D K D K G Q S H P S L Q L K K E K L M K L A A Q  
1001 AAGGAATCAGCAGCCGGCCCTTCATCTTTATAGGGCTCAGTGGGCTCCTGGAACATGCTGGAGTGGCGGCTCACCCGGATGGTTCATCTGCACCT  
147 K E S A R R P F I F Y R A Q V G S W N M L E S A A H P G W F I C T  
1101 CCTGCAATTGTAATGAGCCTGTTGGGGTACAGATAAATTTGAGAACAGGAAACACATTGAATTTTCAATTTCAACAGTTTCAAAGCTGAAATGAGCCC  
180 S C N C N E P V G V T D K F E N R K H I E F S F Q P V C K A E M S P

**NheI (1237)**

1201 CAGTGAGTTCAGCGATTAGGAACTGCCCATTTGAACGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAAACCACAACCTAGAATGCAG  
213 S E V S D •  
1301 TGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACATTGCATTCATT  
1401 TTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTT  
1501 TAACCTCAAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCT  
1601 CACCTTCTTCATGGAGTTAAGATATAGTGTATTTCCCAAGGTTTGAAGTACTCTTCATTCTTTATGTTTTAAATGCATGACCTCCACATTCCC  
1701 TTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTCATAATA  
1801 TCCCCAGTTTAGTGTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGA

141 • N R T Y K L

1901 GGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTTCATCTCAATGAGCACAAAGCAGTCAAGGAGCAGTCAAGATGAGCTCTCTGCACAT  
134 P I L E E I T T K V L K G N M E I L V F C D P A Y D S I L E R C M  
2001 GCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACA  
101 G C P S V V R I S R D V E D S Y P H R V A V I T D F D K Q G N S V  
2101 GCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCTGCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCAGTCTTGGTCTGATGG  
67 A S G I A I A E A C V T V R G I Y A E I H V A S I I E G T K T R I A  
2201 CCGCCCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTT  
34 A G V H H K N D E Y L M T I K E T A V E V L E L D Q Q S I N F T K  
2301 CATGGTGGCCCTCTATAGTGTGATTATACTATGCGGATATACTATGCGGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTG  
1 M

2401 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCTACCGCCATTTCGCTCAATGGGGCGGAGTTGTACGACATTTTGGAAAG  
2501 TCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGT  
2601 ACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCCATAAAGTCACTGACTGGGCATAATGCCA  
2701 GGCGGGCCATTTACCGTCAATGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGCGAGTTTACCGTAAATACTCCACC  
2801 CATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGC

BspLU111 (2941)

2901 CATTACCGTAAGTTATGTAACGCTGCGAGTTAAATAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCG  
3001 TTTTCCATAGGCTCCGCCCTGACGAGCATCACAATAACGACGCTCAAGTCAAGGAGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTC  
3101 CCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTCGGAAGCGTGGCGCTTCTCATAG

3201 CTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTAGCCCGACCGCTGCGCCTTATCCGGT  
3301 AACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTA  
3401 CAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGG  
3501 TAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCT  
3601 TTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAA  
3701 TAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTA  
3801 GCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA