



1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATGCCACAGTCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA  
101 GAGAAGGTGGCGCGGGGTAAACTGGGAAAGTGATGTGCTGACTGGCTCCGCCTTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC  
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTCCTGACCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

BspLU111 (560)

AgeI (552)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCTACTCTGAGATCACCGGTCAACATGTACAGGATGCAACTCCTGCTTGCATTGCACTAAG  
131 M Y R M Q L L S C I A L S  
601 TCTTGCACTTGTACGAATTCGCCCCACAGCCACCGGACTTCCAGCCGGTGTCCACCTGGTTGCGCTCAACAGCCCCCTGCAGGCGGCATGCGGGGC  
131 L A L V T N S A H S H R D F Q P V L H L V A L N S P L S G G M R G  
701 ATCCGCGGGGCCGACTTCCAGTCTCCAGCAGGCGCGGGCCGTGGGGCTGGCGGGCACCTTCCGCGCCTTCTGTCTCGCGCTGCAGGACCTGTACA  
271 I R G A D F Q C F Q Q A R A V G L A G T F R A F L S S R L Q D L Y  
801 GCATCGTGCCTGCGGACCGCGAGCCGTGCCATCGTCAACCTCAAGGACGAGCTGCTTCCAGCTGGGAGGCTGTCTCAGGCTCTGAGGG  
601 S I V R R A D R A A V P I V N L K D E L L F P S W E A L F S G S E G  
901 TCCGCTGAAGCCCGGGCAGCATCTTCTCCTTTGACGGCAAGGACGCTCTGAGGACCCCCACCTGGCCCCAGAAGAGCGTGTGGCATGGCTCGGACCCC  
931 P L K P G A R I F S F D G K D V L R H P T W P Q K S V W H G S D P  
1001 AACGGGCGCAGGCTGACCGAGAGCTACTGTGAGACGTGGCGGACGGAGCTCCCTCGGCCACGGGCCAGGCTCCTCGCTGCTGGGGGCGAGGCTCCTGG  
1271 N G R R L T E S Y C E T W R T E A P S A T G Q A S S L L G G R L L

NheI (1177)

1101 GGCAGAGTGCCGCGAGCTGCCATCACGCTACATCGTCTGCTTGCATTGAGAACAGCTTCATGACTGCCTCAAAGTAGCTAGCTGGCCAGACATGATAAG  
1601 G Q S A A S C H H A Y I V L C I E N S F M T A S K •  
1201 ATACATTGATGAGTTTGGACAAACCACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATA

1301 AGCTGCAATAAACAAGTTAAACAACAACAAATGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTTGGGGAGGTTTTTAAAGCAAGTAAACCTCTACA  
1401 AATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCA  
1501 TCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACTGCTTTC  
1601 ATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTATGATAAATATTAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTT  
1701 TTATTAGGCAGAAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTTGGACAGC

1801 AAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAA  
141 • N R T Y K L P I L E E I T T K V L K G N M E I L V F  
1901 AGCAGTCAGGAGCATAGTCCAGATGAGCTCTGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCAGAGTAGGGGTGCCTGAC  
114 C D P A Y D S I L E R C M G C P S V V R I S R D V E D S Y P H R V  
2001 AGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATG  
81 A V I T D F D K Q G N S V A S G I A I A E A C V T V R G I Y A E I  
2101 TGGACAGCAGAGATGATCTCCAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCT  
47 H V A S I I E G T K T R I A A G V H H K N D E Y L M T I K E T A V E  
2201 CCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCAATGGTGGCCCTCTATAGTGAAGTCTTATGCTGAGTCTGATTATACTATGCCGATATACTATGCCGATGATT  
14 V L E L D Q Q S I N F T K M  
2301 AATTGTCAAACAGCGTGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCAT

2401 TTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATGACGTCAATGGGGTGGAGACTTGGAA  
2501 AATCCCCGTGAGTCAAACCGTATCCACGCCATTGATGTAAGTCCGCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAG  
2601 TAGGAAAGTCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCAATGACGTCAATAGGGGGGCTACTTGGCATATGATACACTTG  
2701 ATGTAAGTCCAAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGAAACATACGTCAATATTGAC

BspLU111 (2881)

2801 GTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGAGGTTAATTAAGAACATGTGAGCAAAAGGCCA  
2901 GCAAAAGGCCAGGAACCGTAAAAAGGCCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAATAATCGACGCTCAAGTCAAGTCAAGG  
3001 TGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCGTGGAAAGCTCCCTCGTGGCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGT  
3101 CCGCCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCAAGCTGGGCTGTGTGCA

3201 CGAACCCCGTTAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACT  
3301 GGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCT  
3401 GCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTGCAAGCA  
3501 GCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTG  
3601 GTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGGTTTTTTGTGGAATCGTAACTAAC  
3701 ATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA