



1 GGATCTGCGATCGCTCCGGTGCCGTCAGTGGGCGAGCGCACATGCCACAGTCCCGGAGAAGTTGGGGGAGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGGTAAACTGGGAAAGTGATGCTGTACTGGCTCCGCCTTTTTCCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCTCCTGAAGTGGCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC
401 GGGCCTTTGTCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCGGGCTCTCCACGCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
AgeI (552)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACTCTGAGATCACCGGTACCATTGGGGACTCCTGGTCTGGAAGGAAAAGAACGCCGGT
1 M G T P G S G R K R T P V
601 AAAAGATCGATTTTCTGCAGAAGATGAAGCTTTGAGTAACATCGCCAGAGAGGCAGAAGCAAGGCTAGCAGCAAAGCGGGCCCGCCAGGCGAGAAGCAAGA
13 K D R F S A E D E A L S N I A R E A E A R L A A K R A A R A E A R
701 GACATCCGCATGCCGGAAGGAAACGACAGCAGAGAGAGTTGGATGAAAAATCTGACAAACAGTATGCTGAAAACACACAAGACCTTCATCTCGAAAT
47 D I R M R I E E Q R E Q R E L D E K S D K Q Y A E N Y T R P S S R N
801 CTGCTCCGCTACAACGCTTAAAGTGGGA~~A~~CTCATCCAGACGGGTAGTGGGACACCAGCAGCTTAATAGACCCAGACACCTCACTGAGTGAAGTGGC
80 S A S A T T P L S G N S S R R G S G D T S S L I D P D T S L S E L R

NcoI (938)

901 GGAGTCTTTGCTGAAGTAGAAGAGAAAATACAAGAAAGCCATGGTGTCCAATGCACAACACTAGACAATGAGAAGAAACAATCTGATCTACCAGGTGGACACC
113 E S L S E V E E K Y K K A M V S N A Q L D N E K N N L I Y Q V D T
1001 CTCAAGGATGTCAATGAAGAGCAGGAGGAGCAGATGGCAGAGTTTATAGAGAGAACGAAGAGAAGTCAAAGGAGTTAGAAAAGGCAGAAAACACATGTGCA
147 L K D V I E E Q E E Q M A E F Y R E N E E K S K E L E R Q K H M C
1101 GCGTGCTGCAGCATAAGATGGATGAACTCAAAGAAGGCCTTCGGCAGAGGACGAGCTCATCGAGAAACATGGCTTAGTTATAATCCAGACAGCACTCC
180 S V L Q H K M D E L K E G L R Q R D E L I E K H G L V I I P D S T P
1201 CAATGGTGTGTCATCATGAGCCTGTGTTGGAGCCATTACTGCTGTCTCAGGAAGCTGCTCAGTCTTGGAGTCAAGGAGAAAGGCCACTAGAT
213 N G D V H H E P V V G A I T A V S Q E A A Q V L E S A G E G P L D
1301 GTGAGGCTACGAAAGCTTGTGGAGAAAAGGACGAGCTTGTGACAGATTAGAAAACCTGAAGCTCCAGTTAGAGGAAGAAGGCAGAAAGTGTTCAGGA
247 V R L R K L A G E K D E L L S Q I R K L Q L K L Q L E E E R Q K C S R
1401 ATGATGGCATGTCCGGGACCTGGCAGGACTGCAGAACGGCTCAGACTTGCAGTTTCAGTTCGAGATGCAGAGAGATGCCAATAGACAAAATTAGTGAATACAA
280 N D G M S G D L A G L Q N G S D L Q F I E M Q R D A N R Q I S E Y K
1501 ATTCAAGCTTTGAAAGCAGAACAAGACATAGCTACCTTGAACAAGATCAGCCGGCTTGGAGGCGAGGTGCTGAGGTACAAAACCTGCTGCTGAGAAT
313 F K L S K A E Q D I A T L E Q S I S R L E G Q V L R Y K T A A E N
1601 GCAGAGAAAATTGAAGATGAGCTGAAAGCAGAAAGGAGGAAGTACAGCGAGAGCTACGGACGGCACAGGACAAGATAGAGGAGATGGAGATGACCAACA
347 A E K I E D E L K A E R R K L Q R E L R T A Q D K I E E M E M T N

AvrII (1794)

1701 GCCACCTGGCTAAGCGGCTAGAGAAGATGAAAGCCAACAGGACAGCCCTTCTAGCCCAGCAGTAGGAGGGGCCCTTCTACCTGGGTGCTGCTGCCTAGG
380 S H L A K R L E K M K A N R T A L L A Q Q •
1801 ACTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAAACCAACTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTA

1901 TTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGTTTT

2001 TTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCT

2101 GAGGGATGAATAAGGCATAGGCATCAGGGGCTGTGCCAATGTGCATTAGCTGTTTCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTT

2201 CCCAAGTTTGAAGTCTCTTCTTCTTTATGTTTTAAATGCAGTACCTCCACATTCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATC

2301 ATTGCAATGAAAATAAATGTTTTTTATAGGCAGAATCCAGATGCTCAAGGCCCTTATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGA

2401 ACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGACTTGGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTT

2501 GCCATTCATCTCAATGAGCACAAGCAGTCCAGGAGCAGTGCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACC
122 G N M E I L V F 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
2601 TCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAAGCACAGACAGTGA
88 E D S Y P H R V 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
2701 CCCTGCCAATGTAGGCCCTCAATGTGGACAGCAGAGATGATCTCCCGCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTGCTCATAGAGCAT
55 R G I Y A E I 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
2801 GGTGATCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGGTCTATTACTACT
22 T I K E T A V E V L E L D Q Q S I N F T K M
2901 GCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCTCTCCAGCTTATCTGACGGTTCCTAAACGAGCTGCTTATATAGACCTCC

3001 CACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCCATTGA

3101 CGTCAATGGGGTGGAGACTTGGAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGAC
3201 TAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAAGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGC
3301 GTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCTATTGGCGTTACTA
3401 TGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCCTGCAGGTTAATT
3501 AAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACA
3601 AAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGAC
3701 CCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTT
3801 CGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACT
3901 TATCGCCACTGGCAGCAGCCACTGGTAAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACAC
4001 TAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGC
4101 GGTGGTTTTTTTGTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGAACG
4201 AAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGT
4301 TTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCA
4401 GAACATTTCTCTATCGAA