



PvuI (7)
SgfI (6)
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
EcoNI (96)

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

HindIII (245)
PvuII (239)
Bsu36I (291)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
EcoNI (287)

301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGTCTTTGTTTCGTTT

KasI (535)
AgeI (552)
BspLU11I (560)
501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTCAACATGTGGCCCTGGTAGCGGCGCTGTTGCTGGGCTCGGC
1 M W P L V A A L L L G S A

EcoRI (646)
Tth111I (664)
601 GTGCTGCGGATCAGTCTCAGTACTATTTAATAAAAACAAAATCTGTAGAATTCAGTGTGTAATGACACTGTCGTCTCATTCCATGCTTTGTTACTAATATG
13 C C G S A Q L L F N K T K S V E F T F C N D T V V I P C F V T N M

SnaBI (724)
Bst1107I (721)
701 GAGGCACAAAACACTACTGAAGTATACGTAAGTGAAGTAAAGTAAAGGAGATATTTACACCTTTGATGGAGCTCTAAACAAGTCCACTGTCCCACTG
47 E A Q N T T E V Y V K W K F K G R D I Y T F D G A L N K S T V P T

801 ACTTTAGTAGTGCAAAAATTGAAGTCTCACAATACTAAAAGGAGATGCCTCTTTGAAGATGGATAAGAGTGTGCTGTCTCACACACAGGAACTACAC
80 D F S S A K I E V S Q L L K G D A S L K M D K S D A V S H T G N Y T

XmnI (982)
901 TTGTGAAGTAACAGAATTAACCAGAGAAGTGAACGATCATCGAGCTAAAATATCGTGTGTTTCATGGTTTTCTCCAAATGAAAATTTCTTATTGTT
113 C E V T E L T R E G E T I I E L K Y R V V S W F S P N E N I L I V

1001 ATTTTCCCAATTTTCTGCTACTCTGTTCTGGGACAGTTTGGTATTAACACTTAAATATAGATCCGGTGGTATGGATGAGAAAACAATTGCTTTAC
147 I F P I F A I L L F W G Q F G I K T L K Y R S G G M D E K T I A L

1101 TTGTTGCTGGACTAGTGATCACTGTCATTGTCATTGTTGGAGCATTCTTTTCGTCACAGGTGAATATTCATTAAGAATGCTACTGGCCTTGGTTTAAAT
180 L V A G L V I T V I V I V G A I L F V P G E Y S L K N A T G L G L I

AseI (1218)
1201 TGTGACTTCTACAGGGATTAATAATTACTTCACTACTATGTGTTTAGTACAGCGATTGGATTAACCTCCTTCGTCATTGCCATATTGTTTATTAGGTTG
213 V T S T G I L I L L H Y Y V F S T A I G L T S F V I A I L V I Q V

Tth111I (1325)
Bst1107I (1349)
1301 ATAGCCTATATCCTCGTGTGGTGGACTGAGTCTCTGTATTGCGGCGTGTATACCAATGCATGGCCCTCTTCTGATTTCAAGTGGTGGATCTTAGCTC
247 I A Y I L A V V G L S L C I A A C I P M H G P L L I S G L S I L A

BbsI (1449)
AvrII (1465)
1401 TAGCACAATTACTTGGACTAGTTTATATGAAATTTGTGGCTTCCAATCAGAAGACTATACAACCTCCTAGGAATAACTGAAGTGAAGTATGGACTCCGA
280 L A Q L L G L V Y M K F V A S N Q K T I Q P P R N N •

MscI (1506)
NheI (1500)
1501 GCTAGCTGGCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTA

HpaI (1638)
1601 TTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAGTTAAACAACAACATTCATTTCATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTT

EcoRI (1734)
1701 TTAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCT
1801 GAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTT

SapI (1916)
SwaI (1987)
1901 CCCAAGGTTTGAAGTACTGCTTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATC

EcoO109I (2048)
2001 ATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTGTAGTGGACTTAGGGAACAAAGGA

2101 ACCTTTAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTT
141 • N R T Y K L P I L E E I T T K V L K

BstXI (2277)
2201 GCCATTCTCTCAATGAGCACAAAGCAGTCAAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGACTGTCCACC
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

2301 TCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAAGCAGACAGTGA
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

StuI (2412)
2401 CCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCGAGTCTTGGTCTGATGGCCGCCCGACATGGTCTGTTGTCCTCATAGAGCAT
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

BbsI (2558)
XmnI (2554)
2501 GGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCCTATAGTGAGTCGTATTATACTAT
22 T I K E T A V E V L E L D Q Q S I N F T K M
AseI (2620)
2601 GCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAAACGAGCTCTGCTTATATAGACCTCC
2701 CACCGTACACGCCTACGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTTGATTACTAGTCAAAACAAACTCCCATTGA
2801 CGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGAC
SnaBI (2903)
2901 TAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCATAAAGTCAATGTAAGTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGC
NdeI (3008)
3001 GTACTTGGCATATGATACACTTGATGTAAGTGGGCGAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTA
PacI (3194)
PstI (3187)
SdaI (3186)
3101 TGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGGTCTGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCTGCAGGTTAAT
BspLU11I (3204)
3201 AAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACA
3301 AAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCGGAC
3401 CCTGCGGTTACCGGATACCTGTCCGCTTTCTCCCTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTCGTT
ApaLI (3518)
3501 CGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTGAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACT
3601 TATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGGTCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACAC
3701 TAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTTTGATCCGGCAAACAAACCACCGCTGGTAGC
3801 GGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACG
EagI (3954)
PacI (3934) SwaI (3943) NotI (3953)
3901 AAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGT
4001 TTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCA
4101 GAACATTTCTTATCGAA