



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA MfeI (82)

101 GAGAAAGTGGCGGGGTAACGGAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) PvuII (239) Bsu36I (291)
201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTACCGCGCCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
KasI (535) AgeI (552)
501 TCTGTTCTGGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTACCATTGGTCTCTTTGGCTCAGCTGCTCTGATCGCCCT 1 M V L L W L T L L L I A L

601 GCCCTGTCTCTGCAAACGAAGGAAGATCCAAACCCACCAATCACGAACCTAAGGATGAAAGCAAAGGCTCAGCAGTTGACCTGGGACCTTAACAGAAT Bsu36I (648)
13 P C L L Q T K E D P N P P I T N L R M K A K A Q Q L T W D L N R N

EcoRV (706)
701 GTGACCGATATCGAGTGTGTTAAAGACGCCGACTATTCTATGCCGGCAGTGAACAATAGCTATTGCCAGTTTGGAGCAATTTCTTATGTGAAGTGACCA 47 V T D I E C V K D A D Y S M P A V N N S Y C Q F G A I S L C E V T

BbrPI (834)
801 ACTACACCGTCCGAGTGGCCAACCCACCACTTCTCCACGTGGATCCTTCCCTGAGAACAGTGGGAAGCCTTGGGCAGGTGCGGAGAATCTGACCTGCTG MseI (815) XcmI (826) BamHI (839)
80 N Y T V R V A N P P F S T W I L F P E N S G K P W A G A E N L T C W

Bsp120I (947)
BspHI (903) PvuII (927) XmaI (942) SacII (953) Psp1406I (982)
901 GATTCATGACGTGGATTTCTTGAGCTGCAGCTGGGCGGTAGGCCCGGGGCCCCCGCGGACGTCCAGTACGACCTGTACTTGAACGTTGCCAA GCGTCAA 113 I H D V D F L S C S W A V G P G A P A D V Q Y D L Y L N V A K R Q

1001 CAGTACGAGTGTCTTCACTACAAAACGGATGCTCAGGGAACAGTATCGGGTGCCTTTCGATGACATCTCTGACTCTCCAGCGGTTCTCAAAGTTCCC 147 Q Y E C L H Y K T D A Q G T R I G C R F D D I S R L S S G S Q S S

1101 ACATCCTGGTGGGGGAGGAGCGCAGCCTTCCGTATCCCTGCACAGATAAGTTTGTGCTTTTTACAGATTGAGATATTAACCTCCACCCAACATGAC 180 H I L V R G R S A A F G I P C T D K F V V F S Q I E I L T P P N M T

1201 TGCAAAGTGAATAAGACACATTTCTTATGCACTGAAAAATGAGAAGTCATTTCAATCGCAAATTTGCGTATGAGCTTCAAGATACAAAAGAGAATGCAG 213 A K C N K T H S F M H W K M R S H F N R K F R Y E L Q I Q K R M Q

XmaI (1379) EcoRI (1396)
1301 CCTGTAATCACAGAACAGGTGAGAGACAGAACCTCCTCCAGCTACTCAATCCTGGAACGTACACAGTACAAAATAAGAGCCCGGAAAGAGTGTATGAAT 247 P V I T E Q V R D R T S F Q L L N P G T Y T V Q I R A R E R V Y E

Eco47III (1424) BbrPI (1460)
1401 TCTTGAGCGCTGGAGCACCCCCAGCGCTTCGAGTGCGACCAGGAGGAGGGCGCAAACACACAGTGCCTGGCGGACGTGCTGCTGATCGCGTGGGGAC 280 F L S A W S T P Q R F E C D Q E E G A N T R A W R T S L L I A L G T

1501 GCTGCTGGCCTGGTCTGTGCTTCTGATCTGCAAGAAGTATCTGGTATGCAGAGACTTTTCCCGCATCCCTCACATGAAAGACCCATCGGTGAC 313 L L A L V C V F L I C R R Y L V M Q R L F P R I P H M K D P I G D

1601 AGCTTCAAAAACGACAAGCTGGTGGTCTGGGAGCGGGCAAAGCCGGCCTGGAGGAGTGTCTGGTGACTGAAGTACAGGTCGTGCAGAAAACCTTGAGACT 347 S F Q N D K L V V W E A G K A G L E E C L V T E V Q V V Q K T •

MseI (1715) NheI (1709)
1701 GGGTTACAGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTT

HpaI (1847) MfeI (1858)
1801 GTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTATTTATGTTTCAGGTTTCAGGGGAGGTGTG

EcoRI (1943)
1901 GGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAA

2001 TCCTTTTCTGAGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAGATATA

SspI (2182) SvaI (2196)
2101 GTGTATTTTCCAAAGTTTGAACCTAGCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAAATAATTT

2201 AAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTGTAGTGTGGACTTAGGG

2301 AACAAAGGAACCTTAAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTGAGTTCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTT 141 • N R T Y K L P I L E E I T T K

SacI (2457) **BstXI (2486)**
2401 GACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGAT 125 V L K 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

2501 CTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCCGCGGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCAC 91 R D V 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

2601 AGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTGTCCTC
58 V T V 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
StuI (2621) BspHI (2771)

2701 ATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGAGTCGTA
25 Y L M T I K E T A V E V L E L D Q Q S I N F T K M
XmnI (2763) SacI (2886)

2801 TTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACATAAACGAGCTCTGCTTATA
AseI (2829)

2901 TAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAAA
SpeI (2984)

3000 CTCCCATGACGTCATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAA
SnaBI (3112)

3100 TAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTC
NdeI (3217)

3200 AATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCATGGAAAGTCCCTATT
SdaI (3395)

3300 GGCCTTACTATGGGAACATACGTCATTATTGACGTCATGGGGGGGGTCTGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTG
PacI (3403) BspLU11I (3413)

3400 C A G G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G A A A A G G C C A G G A A C C G T A A A A A G G C C G G T T G C T G G C G T T T T T C C A T A G G C T C C G C C C C C T G A
3499 C G A G C A T C A A A A A T C G A C G C T C A A G T C A G A G G T G G C G A A C C C G A C A G G A C T A T A A G A T A C C A G G C G T T T C C C C T G G A A G C T C C C T C G T G C G C T C T
3599 C C T G T T C C G A C C C T G C C G T T A C C G G A T A C C T G T C C G C T T T T C C C T T C G G G A A G C G T G G C G C T T T T C A T A G C T C A C G C T G T A G G T A T C T C A G T T C G G

3699 T G T A G G T C G T T C G C T C C A A G C T G G G C T G T G T G C A C G A A C C C C C G T T C A G C C C G A C C G C T G C G C T T A T C C G G T A A C T A T C G T C T T G A G T C C A A C C C G T T
3799 A A G A C A C G A C T T A T C G C C A C T G G C A G C A G C C A C T G G T A A C A G G A T T A G C A G A G C G A G G T A T G T A G G C G G T G C T A C A G A G T T C T T G A A G T G G T G G C C T A A C
3899 T A C G G C T A C A C T A G A A G A A C A G T A T T T G G T A T C T G C G C T C T G T G A A G C C A G T T A C C T T C G G A A A A A G A G T T G G T A G C T T T G A T C C G G C A A A C A A C C A
3999 C C G C T G G T A G C G G T G G T T T T T T G T T T G C A A G C A G C A G A T T A C G C G C A G A A A A A A A G G A T C T C A A G A A G A T C C T T T G A T C T T T T C T A C G G G T C T G A C G C

4099 T C A G T G G A A C G A A A A C T C A C G T T A A G G G A T T T T G G T C A T G G C T A G T T A A T T A A C A T T T A A A T C A G C G G C C G C A A T A A A A T A T C T T A T T T T C A T T A C A T C
PacI (4143) SwaI (4152) EagI (4163) NotI (4162)

4199 T G T G T G T G G T T T T T T G T G T G A A T C G T A A C T A A C A T A C G C T C T C C A T C A A A A C A A A A C G A A A C A A A A C A A A C T A G C A A A A T A G G C T G T C C C C A G T G C A A G
4299 T G C A G G T G C C A G A A C A T T T C T C T A T C G A A