



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGACAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

MfeI (82) EcoNI (96)

101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Bsu36I (291)
Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC

PvuII (239) EcoNI (287)

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
NaeI (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

KasI (535) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTCATCATGAGGCTCCGCAATGGAAGTGTAGCCACTGCTTTAGC

AgeI (552) 1 M R L R N G T V A T A L A

BspHI (560)

Bst1107I (630) 601 ATTTATCACTTCTTCTTACTTTGCTTGGTATACTACATGGCAAAATGGGAAAGAAAACTGATTGCTTATCAACGAGAATTCCTTGTCTTAAAGAA

13 F I T S F L T L S W Y T T W Q N G K E K L I A Y Q R E F L A L K E

BstBI (704) 701 CGTCTTGAATAGCTGAACACAGAAATCTCACAGCGCTCTTCTGAATTAATACGATTGTGCAACAGTTCAGCGTGTAGGAGCAGAAACAAATGGAAGTA

47 R L R I A E H R I S Q R S S E L N T I V Q Q F K R V G A E T N G S

Eco47III (731)

HpaI (849) 801 AGGATGCGTTGAATAAGTTTTAGATAATACCTAAAGCTGTTAAAGGAGTTAAACAAGCAAAAAATCTTCAAGTGCAGTATTTATTATCATTGCCC

80 K D A L N K F S D N T L K L L K E L T S K K S L Q V P S I Y Y H L P

BsrGI (936) 901 TCATTTATTGAAAAATGAAGGAAGTCTTCAACCTGCTGTACAGATTGGCAACGGGAAGACAGGAGTTTCAATAGTCATGGCATTCCCACAGTGAAGAGA

113 H L L K N E G S L Q P A V Q I G N G R T G V S I V M G I P T V K R

1001 GAAGTAAATCTTACCTCATAGAAACTTTCATTCCCTTATTGATAACCTGTATCCTGAAGAGAAGTTGGACTGTATTAGTAGTCTTCATAGGAGAGA

147 E V K S Y L I E T L H S L I D N L Y P E E K L D C V I V V F I G E

BsrGI (1113) 1101 CAGATATTGATTATGTACATGGTGTGTAGCCAACCTGGAGAAGAATTTCTAAAGAAATCAGTTCTGGCTTGGTGAAGTCATATCACCCCTGAAAG

180 T D I D Y V H G V V A N L E K E F S K E I S S G L V E V I S P P E S

1201 CTATTACTGACTTGACAAACCTAAAGGAGACATTTGGAGACTCCAAAGAAAGAGTAAGATGGAGAACAAGCAAAACCTAGATTACTGTTTTCTAATG

213 Y Y P D L T N L K E T F G D S K E R V R W R T K Q N L D Y C F L M

1301 ATGTATGCTCAAGAAAAGGCGATATATTACATTAGCTTGAAGATGATATTATTGTCAAACAAAATTTTAAATACCATAAAAAATTTTGCACCTCAAC

247 M Y A Q E K G I Y Y I Q L E D D I I V K Q N Y F N T I K N F A L Q

XbaI (1422) 1401 TTTCTTCTGAGGAATGGATGATTCTAGAGTTTCCAGCTGGGCTTCATTGGTAAAATGTTTCAAGCGCCGGATCTTACTCTGATTGTAGAATTCATATT

280 L S S E E W M I L E F S Q L G F I G K M F Q A P D L T L I V E F I F

1501 CATGTTTTACAAGGAGAAACCCATTGATTGGCTCCTGGACCATATTCTCTGGGTGAAAGTCTGCAACCCTGAAAAAGATGCAAAACATTGTGATAGACAG

313 M F Y K E K P I D W L L D H I L W V K V C N P E K D A K H C D R Q

BspLU11I (1641)
BstXI (1638) 1601 AAAGCAAATCTGCGAATTCGCTTCCAGACCTCCCTTTTCCAACATGTTGGTCTGCACTCATCACTATCAGGAAAAATCAAAAACTCACGGATAAAGATT

347 K A N L R I R F R P S L F Q H V G L H S S L S G K I Q K L T D K D

1701 ATATGAAACCATTACTTCTTAAATCCATGTAACCCACCTGCGGAGGTATCTACTTCTTGAAGGTCTACCAAGGGCATAACCTGGAGAAAACTTACAT

380 Y M K P L L L K I H V N P P A E V S T S L K V Y Q G H T L E K T Y M

1801 GGGAGAGGATTTCTTCTGGGCTATCACACCGATAGCTGGAGACTACATCTGTTAAATTTGATAAACAGTCAATGTAGAAAGTTATTTGTTCCATAGC

413 G E D F F W A I T P I A G D Y I L F K F D K P V N V E S Y L F H S

XcmI (1905) 1901 GGCAACCAAGAATCCTGGAGATATTCTGCTAAACACAACCTGTGGAAGTTTTGCCTTTTAAAGAGTGAAGTTTGGAAATAAGCAAGAAACCAAGACA

447 G N Q E H P G D I L L N T T V E V L P F K S E G L E I S K E T K D

BamHI (2064) 2001 AACGATTAGAAGATGGCTATTTTCAAGATAGGAAAATTTGAGAATGGTGTGCGAGAAGGATGGTGGATCCAAGTCTCAATCCCATTTCAGCCTTTCGACT

480 K R L E D G Y F R I G K F E N G V A E G M V D P S L N P I S A F R L

MscI (2184)
NheI (2178) 2101 TTCAGTTATTCAGAATCTGCTGTTTGGGCCATTCTTAATGAGATTCATATTAAGGCAACCAACTGATCATCTGAGCTAGCTGGCCAGACATGATAA

513 S V I Q N S A V W A I L N E I H I K K A T N •

2201 GATACATTGATGAGTTTGGCAAAACCAACTAGAATGCAAGTGAAGAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTAT

HpaI (2316) 2301 AAGCTGCAATAAACAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTAC

MfeI (2327)

2401 AAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCTCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGC

2501 ATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTAAGATATAGTGATTTTCCAAGGTTTGAAGTACTGCTCTT

2601 CATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTATGAAAAATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTT
SspI (2651) SwaI (2665)

2701 TTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAG
EcoO109I (2726)

2801 CAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGGATGAGTTCCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACA
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

2901 AAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGA
114 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 E D S Y P H R V
SacI (2926) BstXI (2955)

3001 CAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTT CAGCAGACAGTGACCCTGCCAATGAGGCCTCAAT
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

3101 GTGGACAGCAGAGATGATCTCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTGTCTGTTGCTCATAGAGCATGGTATCTTCTCAGTGGCGACC
48 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

3201 TCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGAT
14 E V L E L D Q Q S I N F T K M
BspHI (3240) AseI (3298)

3301 TAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCCTACCGCCCA
SacI (3355)

3401 TTTGCCTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCC GTTGATTACTAGTCAAACAACCTCCATTGACGTCAATGGGGTGGAGACTTG
SpeI (3453)

3500 GAAATCCCCTGAGTCAAACCGTATCCACGCCATTGATGTA CTGCTGCAAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTA CTGCCA
SnaBI (3581)

3600 AGTAGGAAAGTCCATAAGGTCATGTA CTGTTGGCATAATGCCAGGCGGGCCATTTACCGTCAATTGACGTCAATAGGGGGCTACTTGGCATATGATACT
NdeI (3686)

3700 TGATGTA CTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTG

3800 ACGTCAATGGGCGGGGTCGTTGGGCGGT CAGCCAGGCGGGCCATTTACCCTAAGTTATGTAACGCCTGCAGGTTAA TTAAGAACATGTGAGCAAAAG
PstI (3865) SdaI (3864) PacI (3872) BspLU11I (3882)

3898 GCCAGCAAAGGCCAGGAACCGTAAAAAGCGCGTGTGGCGTTTTCCATAGGCTCGGCCCCCTGACGAGCATCAAAAATCGACGCTCAAGTCA

3998 GAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATAC

4098 CTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTG
ApaLI

4198 TGCACGAACCCCCGTT CAGCCCAGCGCTGCGCCTTATCCGTAACATATCGTCTTGAGTCCAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGC

4298 CACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGT

4398 ATCTGCGCTCTGCTGAAGCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGCA

4498 AGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGAT

4598 TTTGGTCA TGCTAGTTAATTAACATTTAAATC AGCGCCGCAATAAAATATCTTATTTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAAC
PacI (4612) SwaI (4621) EagI (4632) NotI (4631)

4698 TAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA