



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

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGTGTCGTGTACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

HindIII (245)

Psp1406I (203)
PvuII (239)
Bsu36I (291)

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

BstEII (555) **SacII (567)**
AgeI (552) **NcoI (560)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGTCACCATGGGCCGCGGCTGGGGATTCTGTTTGGCCTCCTGGG

1▶ M G R G W G F L F G L L G

601 CGCGTGTGGCTGCTCAGCTCGGGCCACGGAGAGGAGCAGCCCCGGAGACAGCGGCACAGAGGTGCTTCTGCCAGGTTAGTGGTTACTTGGATGATTGT

13▶ A V W L L S S G H G E E Q P P E T A A Q R C F C Q V S G Y L D D C

701 ACCTGTGATGTTGAAACCATTGATAGATTAATAACTACAGGCTTTCCCAAGACTACAAAACTTCTGAAAGTGACTACTTTAGGTATTACAAGGTAA

47▶ T C D A V E T I D R F N N Y R L F P R L Q K L L E S D Y F R Y Y K V

801 ACCTGAAGAGGCGGTCTCTTTCTGAAATGACATCAGCCAGTGTGGAAGAAGGACTGTGCTGCAAACTGCAATCTGATGAAGTCTCTGATGGAAT

80▶ N L K R P C P F W N D I S Q C G R R D C A V K P C Q S D E V P D G I

901 TAAATCTGCGAGCTACAAGTATTCTGAAGAAGCAATAATCTCATTGAAGAATGTGAACAAGCTGAACGACTTGGAGCAGTGGATGAATCTCTGAGTGAG

113▶ K S A S Y K Y S E E A N N L I E E C E Q A E R L G A V D E S L S E

1001 GAAACACAGAAGGCTGTTCTTTCAGTGGACCAAGCATGATGATTCTTCAGATAACTTCTGTGAAGCTGATGACATTCAGTCCCCTGAAGCTGAATATGTAG

147▶ E T Q K A V L Q W T K H D D S S D N F C E A D D I Q S P E A E Y V

Eco47III (1118)

1101 ATTTGCTTCTTAATCTGAGCGTACTGGTTACAAGGGACCAGATGCTTGGAAAAATGGAATGTCATCTACGAAGAAAATGTTTAAAGCCACAGAC

180▶ D L L L N P E R Y T G Y K G P D A W K I W N V I Y E E N C F K P Q T

1201 AATTAAGAGACCTTAAATCCTTTGGCTTCTGGTCAAGGGACAAGTGAAGAGAACACTTTTTACAGTTGGCTAGAAGGTCTCTGTGTAGAAAAAGAGCA

213▶ I K R P L N P L A S G Q G T S E E N T F Y S W L E G L C V E K R A

AseI (1333) **EcoRV (1355)**

1301 TTCTACAGACTTATATCTGGCTACATGCAAGCATTAAATGTGCATTTGAGTGAAGATATCTTTTACAAGAGACCTGGTTAGAAAAGAAATGGGGACACA

247▶ F Y R L I S G L H A S I N V H L S A R Y L L Q E T W L E K K W G H

1401 ACATTACAGAATTTCAACAGCGATTTGATGGAATTTTACTGAAGGAGAAGTCCAAGAAGCTTAAAGAACTGTATTTTCTACTTAATAGAATAAG

280▶ N I T E F Q Q R F D G I L T E G E G P R R L K N L Y F L Y L I E L R

1501 GGCTTTATCAAAGTGTACCATTCTTCGAGCGCCAGATTTCAACTCTTACTGAAAAATAAATTCAGGATGAGGAAAAACAAATGTTACTTCTGGAA

313▶ A L S K V L P F F E R P D F Q L F T G N K I Q D E E N K M L L L E

BspHI (1605)

1601 ATACTTCATGAAATCAAGTCATTTCTTTGCATTTTGTGAGAATTCATTTTTGCTGGGGATAAAAAAGAAGCACACAACTAAAGGAGGACTTTTCGAC

347▶ I L H E I K S F P L H F D E N S F F A G D K K E A H K L K E D F R

HindIII (1765) **BglII (1799)**

1701 TGCATTTTAGAAATATTTCAAGAATTATGGATTGTGTTGGTTGTTTTAAATGTCGTCTGTGGGGAAAGCTTCAGACTCAGGGTTTGGGCACTGCTCTGAA

380▶ L H F R N I S R I M D C V G C F K C R L W G K L Q T Q G L G T A L K

1801 GATCTTATTTTCTGAGAAATGATAGCAAATATGCCAGAAAAGTGGACCTAGTTATGAATTCATCTAACCCAGACAAGAAATAGTATCATTATTCAACGCA

413▶ I L F S E K L I A N M P E S G P S Y E F H L T R Q E I V S L F N A

1901 TTTGGAAGAATTTCTACAAGTGTGAAAGAATTGAAAACTTCAGGAATTTGTACAGAATATTCATTAAGAAAAACAAGCTGATATGTGCCTGTTTCTGG

447▶ F G R I S T S V K E L E N F R N L L Q N I H •

MscI (2021)

2001 ACAATGGAGGCGAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTG

HpaI (2153) **MfeI (2164)**

2101 AAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACATTGCATTCAATTTATGTTTCAGGTTTCAGGGGGA

2201 GGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTA

▶ ◀

2301 CTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTAA

SapI (2431)

2401 GATATAGTGTATTTTCCAAGTTTGAAGTACTGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAA

Swal (2502)
EcoO109I (2563)

2501 TAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGAC

2601 TTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGT
 141 • N R T Y K L P I L E E I T
 SacI (2763)

2701 GGTTTTGACCAGCTTGCCATTTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTG
 127 T K 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

2801 ATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTT
 93 I S 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

StuI (2927)

2901 CAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGT
 60 A C 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

BbsI (3073)

3001 GTCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGA
 27 D E 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

AseI (3135) SacI (3192)

3101 GTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCG

SpeI (3290)

3201 CTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAA
 ACTAGTCAAA

3301 ACAAACCTCCATTGACGTCAATGGGGTGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCAT

SnaBI (3418)

3401 GGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTG

NdeI (3523)

3501 ACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCC
 360 CTATTGGCGTTACTATGGGAACATACGTATTATTGACGTCAATGGGCGGGGTCTGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAAC

PacI (3709)

PstI (3702)

SdaI (3701) BspLU11I (3719)

3701 GCCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCC
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3801 CTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCG

3901 CTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGT

ApaLI (4033)

4001 TCGGTGTAGGTGTTGCTCCAAGTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGTGGCCTTATCCGGTAACTATCGTCTTGAGTCCAACC
 4101 CGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGCC
 4201 TAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACA
 4301 ACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTCTG

EagI (4469)

PacI (4449) SnaI (4458) NotI (4468)

4401 ACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAAATATCTTTATTTTCATTA
 4501 CATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTG
 4601 CAAGTGCAGGTGCCAGAACATTTCTCTATCGAA