



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

1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCCTTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)

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

201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC

301 GCCATCCACGCCGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTCCTGACCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

XcmI (573)

AgeI (552)
SphI (568)

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGGCCAGCATGCCACATACTTTGTGGATGGTGTGGGTC

601 TTGGGGTTCATCATCAGCCTCTCCAAGGAAGTCTCCAATCAGGCTTCTGTCTTGTGACCGCAATGGTATCTGCAAGGGCAGCTCAGGATCTTTAA

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

1▶ M P H T L W M V W V

701 ACTCCATTCCCTCAGGCTCACAGAAGCTGAAAAAGCCTTGACCTGTCCAACAACAGGATCACCTACATTAGCAACAGTGACCTACAGAGGTGTGTGAA

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

801 CCTCCAGGCTCTGGTGTGACATCCAATGGAATTAACACAATAGAGGAAGATTCTTTTTCTCCCTGGGAGCTTGAACATTTAGACTTATCCTATAAT

77▶ L Q A L V L T S N G I N T I E E D S F S S L G S L E H L D L S Y N

AvrII (983)

901 TACTTATCTAATTTATCGTCTTCTGTTCAAGCCCTTTCTCTTTAACTTCTTAACTTACTGGGAAATCCTTACAAAACCTAGGGGAAACATCTC

111▶ Y L S N L S S S W F K P L S S L T F L N L L G N P Y K T L G E T S

1001 TTTTTCTCATCTCACAAAATGCAAATCCTGAGAGTGGGAAATATGGACACCTTCACTAAGATTCAAAGAAAAGATTTTGTGGACTTACCTTCCTTGA

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

BglII (1121)
NdeI (1185)

1101 GGAACCTGAGATTGATGCTTCAGATCTACAGAGCTATGAGCCAAAAGTTTGAAGTCAATTGAGAATGTAAGTCACTGATCCTTCATATGAAGCAGCAT

177▶ E L E I D A S D L Q S Y E P K S L K S I Q N V S H L I L H M K Q H

1201 ATTTTACTGCTGGAGATTTTTGTAGATGTTACAAGTCCGTGGAAATGTTTGGAACTGCGAGATACTGATTTGGACACTTTCCATTTTTCAGAACTATCCA

211▶ I L L L E I F V D V T S S V E C L E L R D T D L D T F H F S E L S

1301 CTGGTGAACAAATTCATTGATTAATAAGTTTACATTTAGAAATGTGAAAATCACCGATGAAAGTTTGTTCAGGTTATGAACTTTTGAATCAGATTTT

244▶ T G E T N S L I K K F T F R N V K I T D E S L F Q V M K L L N Q I S

Psp1406I

1401 TGGATTGTTAGAATTAGAGTTTGTGACTGTACCCTTAATGGAGTTGGTAATTTTAGAGCATCTGATAATGACAGAGTTATAGATCCAGGTAAGTGGAA

277▶ G L L E L E F D D C T L N G V G N F R A S D N D R V I D P G K V E

BspEI (1510)

HpaI (1502)

1501 ACGTTAACAAATCCGGAGGCTGCATATCCAAGTTTTACTTATTTTATGATCTGAGCACTTTATATTCACTTACAGAAAGAGTAAAAAGAATCACAGTAG

311▶ T L T I R R L H I P R F Y L F Y D L S T L Y S L T E R V K R I T V

1601 AAAACAGTAAAGTTTTCTGGTTCCTTGTACTTTACAACATTTAAATCATTAGAATACTGGATCTCAGTGAATTTGATGGTTGAAGAATACTT

344▶ E N S K V F L V P C L L S Q H L K S L E Y L D L S E N L M V E E Y L

1701 GAAAAATTCAGCCTGTGAGGATGCCTGGCCCTCTACAACTTAAATTTAAGGCAAAATCATTGGCATATTGAAAAAACCGGAGAGACTTTGCTC

377▶ K N S A C E D A W P S L Q T L I L R Q N H L A S L E K T G E T L L

EcoRV (1824)
SspI (1885)

1801 ACTCTGAAAAACTTGACTAACATTGATATCAGTAAGAATGTTTTATTCTATGCCTGAAACTGTGAGTGGCCAGAAAAGATGAAATATTTGAACCTAT

411▶ T L K N L T N I D I S K N S F H S M P E T C Q W P E K M K Y L N L

1901 CCAGCACAGAAATACACAGTGTAAACAGGCTGCATTCCTCAAGACTGGAAATTTAGATGTTAGCAACAACATCTCAATTTATTTCTTTGAATTTGCC

444▶ S S T R I H S V T G C I P K T L E I L D V S N N N L N L F S L N L P

SpeI (2072)

2001 GCAACTCAAAGAATTTATATTTCCAGAAATAAGTTGATGACTCTACCAGATGCCTCCCTCTTACCATGTTACTAGTATTGAAAATCAGTAGGAATGCA

477▶ Q L K E L Y I S R N K L M T L P D A S L L P M L L V L K I S R N A

EcoRI (2187)

2101 ATAACACGTTTTCTAAGGAGCAACTTGACTCATTTACACACTGAAGACTTTGGAAGCTGGTGGCAATAACTTCATTTGCTCCTGTGAATTCCTCTCCT

511▶ I T T F S K E Q L D S F H T L K T L E A G G N N F I C S C E F L S

2201 TCACTCAGGAGCAGCAAGCACTGGCCAAAGTCTTGATTGATTGGCCAGCAAATACCTGTGTGACTCTCCATCCCATGTGCGTGGCCAGCAGGTTGAGGA

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

XcmI (2396)

2301 TGTCGCCTCTCGGTGTGCGAATGTCACAGGACAGCACTGGTGTCTGGCATGTGCTGTGCTGTTCTGCTGATCCTGCTCACGGGGTCTGTGCCAC

577▶ V R L S V S E C H R T A L V S G M C C A L F L L I L L T G V L C H

NcoI (2405)
NheI (2495)

2401 CGTTTCCATGGCCTGTGGTATATGAAAATGATGTGGGCTGGCTCCAGGCCAAAAGGAAAGCCAGGAAAGCTCCCAGCAGGAACATCTGCTATTAGCTAG

611▶ R F H G L W Y M K M M W A W L Q A K R K P R K A P S R N I C Y •

2501 CTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT
HpaI (2633) MfeI (2644)
2601 TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACATTGCATTTCATTTTATGTTTCAGGTTCCAGGGGGAGGTGTGGGAGGTTTTTTAA
EcoRI (2729)
2701 GCAAGTAAAACCTCTACAAATGTGGTATGGAATTCTAAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGG
2801 ATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTTCCAA
SapI (2911) SspI (2968) SwaI (2982)
2901 GGTTTGAACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCTTTTTAGTAAAATATTCAGAATAATTTAAATACATCATTGC
EcoO109I (3043)
3001 AATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGACCTT
3101 TAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCAT
141 • N R T Y K L P I L E E I T T K V L K G N
SacI (3243)
3201 TCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATC
120 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 E D
3301 AGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAAATGGCAATGGCTTCAGCACAGACAGTGACCTG
87 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 R
StuI (3407)
3401 CCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTGTTGTCCTCATAGAGCATGGTGA
53 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 T I
XmnI (3549)
3501 TCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAGTGAGTCGATTATACTATGCCGA
20 K E T A V E V L E L D Q Q S I N F T K M
AseI (3615) SacI (3672)
3601 TATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCCACCG
SpeI (3770)
3701 TACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCA
SnaBI (3898)
3801 ATGGGGTGGAGACTTGAAATCCCCTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGTAATAGCGATGACTAATA
3901 CGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACT
NdeI (4003)
4001 TGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGA
PacI (4189)
PstI (4182)
SdaI (4181) BspLU1II (4199)
4101 ACATACGTCATTATTGACGTCAATGGCGGGGGTCTGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCTGCAGGTTAATAAGAA
4201 CATGTGAGCAAAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAAAAAAT
4301 CGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGC
4401 CGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTC
ApaLI (4513)
4501 CAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGTAAGACACGACTTATCG
4601 CCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAA
4701 GAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAACAAACCACCGCTGGTAGCGGTGG
4801 TTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAA
EagI (4949)
PacI (4929) SwaI (4938) NotI (4948)
4901 TCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAAATATCTTTATTTTATTACATCTGTGTGTTGTTTTT
5001 GTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAGGTGCCAGAACA
5101 TTTCTCTATCGAA