



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

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)

Psp1406I (203)
PvuII (239)

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCAGCTTTGCCTGACCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) SphI (560)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGTGAGCATGCCTTTGAGCAGAGGAGTGCAGCTGCAAGCCTGA

→
1▶ M P L E Q R S Q H C K P E

FspI (642)

601 AGAAGGCCTTGAGCCCGAGGAGAGGCCCTGGGCTGGTGGGTGCGCAGGCTCCTGCTACTGAGGAGCAGGAGGCTGCCTCCTCTTCTACTCTAGTT

13▶ E G L E A R G E A L G L V G A Q A P A T E E Q E A A S S S S T L V

701 GAAGTACCCTGGGGAGGTGCCTGCTGCCAGTCACCAGATCCTCCCAGAGTCCAGGGAGCCTCCAGCCTCCCCACTACCATGAACTACCCTCTCT

47▶ E V T L G E V P A A E S P D P P Q S P Q G A S S L P T T M N Y P L

801 GGAGCCAATCCTATGAGGACTCCAGCAACCAAGAAGAGGAGGGCCCAAGCACCTTCCCTGACCTGGAGTCCGAGTTCCAAGCAGCACTCAGTAGGAAGT

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

901 GGCCGAGTTGGTTCATTTTCTGCTCCTCAAGTATCGAGCCAGGAGCCGGTCAAAAGGCAGAAATGCTGGGGAGTGTGTCGGAATTTGGCAGTATTT

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

HindIII (1019) PvuII (1036) BsrGI (1085) BstXI (1097)

1001 TTTCTGTGATCTTCAGCAAAGCTTCCAGTTCCTTGCAGCTGGTCTTTGGCATCGAGCTGATGGAAGTGGACCCATCGGCCACTGTACATCTTTGCCA

147▶ F P V I F S K A S S S L Q L V F G I E L M E V D P I G H L Y I F A

MscI (1178)

1101 CCTGCCTGGGCTCTCCTACGATGGCCTGCTGGGTGACAATCAGATCATGCCAAGGCAGGCCTCCTGATAATCGTCTGGCCATAATCGCAAGAGAGGG

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

BbsI (1264) BamHI (1281)

1201 CGACTGTGCCCTGAGGAGAAAACTGGGAGGAGCTGAGTGTGTTAGAGGTGTTTGGGGGAGGGAAGACAGTATCTTGGGGATCCCAAGAAAGCTGCTC

213▶ D C A P E E K I W E E L S V L E V F E G R E D S I L G D P K K L L

EcoRI (1369) Bsp120I (1388)

1301 ACCCAACATTTCTGTCAGGAAAACCTACCTGGAGTACCGGCAGTCCCCGGCAGTGATCCTGCATGTTATGAATTCCTGTGGGTCCAAGGCCCTCGTTG

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

NdeI (1426)

1401 AAACCAGCTATGTGAAAGTCTGCACCATATGGTAAAGATCAGTGGAGGACCTCACATTTCTACCCACCCTGCATGAGTGGGTTTTGAGAGAGGGGA

280▶ E T S Y V K V L H H M V K I S G G P H I S Y P P L H E W V L R E G E

NheI (1538)

BstAPI (1513)
XcmI (1532)
MscI (1544)

1501 AGAGTGAGTCTGAGCACGAGTTGCAGCCAGGGCCAGTGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGCAAACCACAACCTAGAATGCA

313▶ E •

HpaI (1676) MfeI (1687)

1601 GTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAAATTGATTCA

EcoRI (1772)

1701 TTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAACT

1801 TTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATAGGGGCTGTTGCCAATGTGCATTAGCTGTTTCAGCC

SapI (1954)

1901 TCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTCCCAAGGTTTGAAGTCTCTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCC

SspI (2011) SmaI (2025)

2001 CTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAAT

2101 ATCCCCAGTTTGTAGTGGACTTAGGGAACAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTG

141▶ • N R T Y K

SacI (2286)

2201 AGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAGCAGTCAAGGAGCATAGTCAGAGATGAGCTCTCGACA

134▶ L P I L E E I T 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

BstXI (2315)

2301 TGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCAC

101▶ G C P S V V R 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

2401 AGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATG
68 A S G I A I A E 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
BbsI (2596)

2501 GCCGCCCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCT
34 A A G V H H K N 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
XmnI (2592)

2601 TCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCT
1 M
AseI (2658)

2701 GACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAA
SacI (2715)

2801 GTCCCGTTGATTTACTAGTCAAACAACCTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATG
SpeI (2813)

2901 TACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCC
SnaBI (2941)

3001 AGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCAC
NdeI (3046)

3101 CCATTGACGTCAATGAAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGAGCCAGGCGGG
PacI (3232)

3201 CCATTTACGTAAGTTATGTAACGCTGCAGGTTAAITTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGCTGGC
PstI (3225)
SdaI (3224) BspLU11I (3242)

3301 GTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTT
BspLU11I (3242)

3401 CCCCTGGAAGCTCCCTCGTGGCTCTCTGTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATA
ApaLI (3556)

3501 GCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTGAGCCGACCGCTGCGCCTTATCCGG
ApaLI (3556)

3601 TAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCT
ApaLI (3556)

3701 ACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTG
ApaLI (3556)

3801 GTAGCTCTTGATCCGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCC
EagI (3992)

3901 TTTGATCTTTTACGGGCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCA
PacI (3972) SmaI (3981) NotI (3991)

4001 ATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAAACAAAACGAAAACAAAACAACT
NotI (3991)

4101 AGCAAAATAGGCTGTCCCAGTGCAAGTGCCAGTGCCAGAACATTTCTCTATCGAA