



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

1 GGATCTGCGATCGCTCCGGTGCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGCGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTGTGCTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)

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

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCGCCCTACCTGAGGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCTACCTGAGATCACCGGTGAGTGGGAAAAAGGAGCGGTGGCGGAAGA

AgeI (552) **SphI (560)** **BsrBI (584)** **BbsI (595)**

1▶ M P K R G K K G A V A E D

EagI (644) **Bsp120I (681)**

601 CGGGGATGAGCTCAGGACAGAGCCAGAGCCAAGAAGAGTAAGACGGCCGCAAGAAAAATGACAAAGAGGCAGCAGGAGAGGGCCCCAGCCCTGTATGAG

13▶ G D E L R T E P E A K K S K T A A K K N D K E A A G E G P A L Y E

701 GACCCCCAGATCAGAAAACCTACCCAGTGGCAAACCTGCCACACTCAAGATCTGCTTTGGAATGTGGATGGGCTTCGAGCCTGGATTAAGAAGAAG

47▶ D P P D Q K T S P S G K P A T L K I C S W N V D G L R A W I K K K

DraIII (722) **BglIII (749)**

PvuII (875)

801 GATTAGATTGGGTAAAGGAAGAAGCCCCAGATATACTGTGCCTTCAAGAGACCAAATGTTTCAGAGAACAACTACCAGCTGAAGTTCAGGAGTGCCTGG

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

901 ACTCTCTCATCAATACTGGTCAGCTCCTTCGGACAAGGAAGGTACAGTGGCGTGGGCTGCTTTCCCGCCAGTGGCCACTCAAAGTTTCTTACGGCATA

113▶ L S H Q Y W S A P S D K E G Y S G V G L L S R Q C P L K V S Y G I

NdeI (1070)

1001 GGCGATGAGGAGCATGATCAGGAAGGCCGGGTGATTGTGGCTGAATTTGACTCGTTTGTGCTGGTAACAGCATATGTACCTAATGCAGGCCGAGGCTGG

147▶ G D E E H D Q E G R V I V A E F D S F V L V T A Y V P N A G R G L

Eco47III (1118) **XmnI (1129)**

1101 TACGACTGGAGTACCGGCAGCGCTGGGATGAAGCCTTTTCGCAAGTTCCTGAAGGGCCTGGCTTCCCGAAAGCCCTTGTGCTGTGGAGACCTCAATGT

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

BstAPI (1293)

PstI (1291)

1201 GGCACATGAAGAAATTGACCTTCGCAACCCCAAGGGGAACAAAAGAATGCTGGCTTACGCCACAAGAGCGCAAGGCTTCGGGGAATTACTGCAGGCT

213▶ A H E E I D L R N P K G N K K N A G F T P Q E R Q G F G E L L Q A

1301 GTGCCACTGGCTGACAGCTTTAGGCACCTCTACCCCAACACACCTATGCCTACACCTTTTGGACTTATATGATGAATGCTCGATCCAAGAATGTTGGTT

247▶ V P L A D S F R H L Y P N T P Y A Y T F W T Y M M N A R S K N V G

1401 GGCCTTGTACTTTTTTGTGCCACTCTCTGTTACCTGCATTGTGTGACAGCAAGATCCGTTCCAAGGCCCTCGGCAGTGCATCTGTCTATCAC

280▶ W R L D Y F L L S H S L L P A L C D S K I R S K A L G S D H C P I T

MscI (1536)

NheI (1530)

1501 CCTATACCTAGCACTGTGACACCACCCCTAGCTAGTGGCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAACCTAGAATGCAGTGAAAAA

313▶ L Y L A L •

HpaI (1668) **MfeI (1679)**

1601 AATGCTTATTGTGAAATTTGTGATGCTATTGCTTTATTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCTTTATGTT

EcoRI (1764)

1701 TCAGTTTCAGGGGAGGTGTGGGAGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTC

1801 CAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTC

SapI (1946)

1901 TTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTATG

SspI (2003)
Swal (2017)

2001 TAAATATTTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCCA

2101 GTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGAT

141◀ • N R T Y K L P I

2201 GAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAG

132▶ 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 G C

BstXI (2307)

2301 GGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACC

98▶ 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 A S G

2401 CAATGGCAATGGCTTCAGCACAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTCTGATGGCCGCCCC
65 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 A A G

2501 GACATGGTGGCTTGTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGGTCTTCATGGTG
32 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 M

2601 GCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTC
2701 ACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTT

2801 GATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCA
SpeI (2805)

2901 AAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGC
SnaBI (2933)

3001 CATTACCCTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGAC
NdeI (3038)

3101 GTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTAC

3201 CGTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCC
PacI (3224)
PstI (3217)
SdaI (3216)
BspLUIII (3234)

3301 ATAGGCTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGG
3401 AAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCATAGCTCACGC

3501 TGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATC
ApaLI (3548)

3601 GTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTT
3701 CTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCT
3801 TGATCCGGCAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCT

3901 TTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAATCAGCGGCCGAATAAAAAATA
EagI (3984)
PacI (3964) SwaI (3973) NotI (3983)

4001 TCTTTATTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAT
4101 AGGCTGTCCCGAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA