



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

1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTGTCTGTACTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

HindIII (245)

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

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCCGCTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) SphI (560)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGTGAGCATGCTTCTCCTGGTGACAAGCCTTCTGCTGTGAGTT

601 ACCACACCCAGCATTCTCCTGATCCCAGAGAAATCGGATCTGCGAACAGTGGCACCAGCCTTAGTCTCAATGTGAGGTTTGACTCCAGGACGATGAAT

13▶ P H P A F L L I P E K S D L R T V A P A S S L N V R F D S R T M N

701 TTAAGCTGGGACTGCCAAGAAAACACAACCTTCAGCAAGTGTTCCTAACTGACAAGAAGAAGAGTCTGGAACCCAGGCTCAGTAAACGAATGTT

47▶ L S W D C Q E N T T F S K C F L T D K K N R V V E P R L S N N E C

ApaLI (801)
BbrPI (850) SpeI (859)

801 CGTGCACATTTCTGAAATTTGTCTGCATGAAGGAGTACATTTGAGGTTACGTGAATACTAGTCAAAGAGGATTTCAACAGAACTGCTTTATCCAAA

80▶ S C T F R E I C L H E G V T F E V H V N T S Q R G F Q Q K L L Y P N

Acc65I (913)

901 TTCAGGAAGGGAGGTACCGTCTCAGAATTTCTCCTGTTTCATCTACAATGCGGATTAATGAACTGTACCTGGCGAGGGTCCGACGGCCCCCGT

113▶ S G R E G T A A Q N F S C F I Y N A D L M N C T W A R G P T A P R

BsrGI (1016)

1001 GACGTCCAGTATTTTTGTACATACGAAACTCAAAGAGAAGGAGGGAGATCCGGTGTCTTATTACATACAAGACTCAGGAACCCATGTGGGATGTCACC

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

HpaI (1141)

1101 TGGATAACCTGTCAGGATTAACGTCTCGCAATTACTTTCTGGTTAACGGAACCAGCCGAGAAATTGGCATCCAATTCTTTGATTCACTTTTGGACACAAA

180▶ L D N L S G L T S R N Y F L V N G T S R E I G I Q F F D S L L D T K

EcoO109I (1282)

1201 GAAAATAGAACGATTCAACCCTCCAGCAATGTACCCTGACGTTGCAACACGACGACTGCCTCGTACGGTGGAAACAGCCAGGACCTATCAGAAGCTG

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

PvuII (1321)
AseI (1372)

1301 TCGTACCTGGACTTTTCAGTACCAGTGGACGTCCACAGAAAGAATACCCAGCCTGGCAGGAAAACCTACTGATTAATGTTTCTGGTGATTTGGAAAATA

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

DraIII (1435)
PstI (1454)

1401 GATACAACCTTCCAAGCTCTGAGCCCAGAGCAAAACACAGTGTGAAGATCAGAGTGCAGAGCTCCGCATCTTGAATTGGAGCTCCTGGAGTGAAGCCAT

280▶ R Y N F P S S E P R A K H S V K I R A A D V R I L N W S S W S E A I

BsrGI (1535)

1501 TGAATTTGGTTCTGACGACGGGAACCTCGGCTCTGTGTACATTTATGTCTCCTAATCGTGGAAACCCTTGTCTGTGGCATCGTCTCGGCTTCTCTTT

313▶ E F G S D D G N L G S V Y I Y V L L I V G T L V C G I V L G F L F

Bsu36I (1608)
BbsI (1678)
EcoRI (1699)

1601 AAAAGTTCTTAGGATACAGCGGCTGTTCCCGCCAGTTCACAGATCAAAGACAACTGAATGATAACCATGAGGTGGAAGACGAGATCATCTGGGAGG

347▶ K R F L R I Q R L F P P V P Q I K D K L N D N H E V E D E I I W E

MscI (1791)

1701 AATTCACCCAGAGGAAGGAAAGGCTACCGCAAGAGGCTTACCGTGAAGGAAATTACCTGAGACCCAGAGGGTGTAGGAATGCTAGCTGGCCAGAC

380▶ E F T P E E G K G Y R E E V L T V K E I T •

1801 ATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAA

HpaI (1923) MfeI (1934)

1901 CCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTTCATTTATGTTTCAGGTTACGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAAA

EcoRI (2019)

2001 CCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGG

2101 CATAGGCATCAGGGGCTGTTGCCAATGTGATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGAAT

SapI (2201)
SspI (2258)
Swal (2272)

2201 AGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAATAATTTAAATACATCATTGCAATGAAAAA

EcoO109I (2333)

2301 AATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAAAT

2401 TGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAAT
 141 • N R T Y K L P I L E E I T T K V L K G N M E I

BstXI (2562)

2501 GAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGG
 117 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 S Y P

StuI (2697)

2601 TGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGG
 83 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 G I Y A

2701 CCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTGTGTCTCATAGAGCATGGTGATCTTCTCAGT
 50 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 K E T

BbsI (2843)

XmnI (2839)

2801 GCGCACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGC
 17 A V E V L E L D Q Q S I N F T K M

AseI (2905)

2901 CGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCCTA

SpeI (3060)

3001 CGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCAATGGGGTGGGA

SnaBI (3188)

3101 GACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTA

NdeI (3293)

3201 CTGCCAAGTAGGAAAGTCCATAAAGTCATGTACTGGGCATAATGCCAGGCGGGCATTACCCTGATTGACGTCAATAGGGGGCGTACTTGGCATATGA

3301 TACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCA

PacI (3479)

PstI (3472)

SdaI (3471)

BspLU11I (3489)

3401 TTATTGACGTCAATGGGCGGGGTCGTTGGGCGTCCAGGCGGGCCATTACCCTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCA
 CCTGCAGGTTAATAAGAACATGTGAGCA

3501 AAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAA

3601 GTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGG

3701 ATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGC

ApaLI (3803)

3801 TGTGTGCACGAACCCCCGTTACGCCCACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAG

3901 CAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATT

4001 TGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGT

4101 TGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAG

EagI (4239)

PacI (4219) SmaI (4228) NotI (4238)

4201 GGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTAATCG

4301 TAACTAACATACGCTCTCCATCAAAAACAAAACGAAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATC

4401 GAA