



PvuI (7)
SgfI (6) 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGTCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) SphI (560)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGTCAGCATGAGCTAAAGTGCCTGTTTTGTCTCTGGGAAC

601 CAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTCTTTTCTGGTCTTGGTCTGTTCTTGTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCA
13▶ R Q P V W K K L H V S S G F F S G L G L F L L L L S S L C A A S A

PshAI (702) 701 GAGACTGAAGTCGGTGAATGGTGGGAGCAATGTGGTGTCTGAGTGCATTGACCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGC

801 AAATCGAAAACCCAGAAGTTTCGGTACTTACTACCTGCCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCCTACAAGAACAGGGGCCATCTGCCCT
80▶ Q I E N P E V S V T Y Y L P Y K S P G I N V D S S Y K N R G H L S L

Bsu36I (949)
901 GGACTCCATGAAGCAGGGTAACTTCTCTGTACTGAGAAATGTACCCCTCAGGATACCCAGGAGTTCACATGCCGGGTATTTATGAATACAGCCACA
113▶ D S M K Q G N F S L Y L K N V T P Q D T Q E F T C R V F M N T A T

BglII (1010) 1001 GAGTTAGTCAAGATCTTGAAGAAGGTGGTCAAGCTGCGGTGGCAGCAAACTCAGTACACCTGTCATCAGCACCTCTGATAGCTCCAACCCGGCCAGG

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

1101 AACGTACTACACCTGCATGTCCAAGAATGGTACCCAGAGCCCACTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAA
180▶ E R T Y T C M S K N G Y P E P N L Y W I N T T D N S L I D T A L Q N

1201 TAACACTGTCTACTTGAACAAGTTGGCCTGTATGATGAATCAGCACATTAAGGCTCCCTTGACATCTCGTGGGGATGTTCTGTGCTGCGTAGAGAAT
213▶ N T V Y L N K L G L Y D V I S T L R L P W T S R G D V L C C V E N

1301 GTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAGAACCACAGGAAACCCACAATAATGAGTAAAAG
247▶ V A L H Q N I T S I S Q A E S F T G N N T K N P Q E T H N N E L K

MluI (1465) 1401 TCCTTGTCCTGCTGACTGGCGGAGCGGCATTCGTTTCTTCATCATATACAGACGCACGCTCCACCAGGATATACAGGACCCCAAGAC

280▶ V L V P V L A V L A A A A F V S F I I Y R R T R P H R S Y T G P K T

MscI (1538)
BsrGI (1500) 1501 TGTACAGCTTGAACCTACAGACCAGCCTGACCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAA

313▶ V Q L E L T D H A •

HpaI (1670) MfeI (1681)
1601 AAAATGCTTTATTTGTAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAACAAGTTAACAACAACATTGCATTCAATTTATG

EcoRI (1766)
1701 TTTCAGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTTAAATACAGCATAGCAAACTTTAACC

1801 TCCAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCT

SapI (1948)
1901 TCTTTCATGGAGTTAAAGATATAGTGTATTTTCCCAAGTTTGAAGTACTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTT

SspI (2005) SwaI (2019) EcoO109I (2080)
2001 AGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTCATAATATCCCC

2101 CAGTTTAGTAGTTGACTTAGGGAACAAAGGAACCTTAAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTCTGGTACTTGAGGGGG
141▶ N R T Y K L P

SacI (2280)
2201 ATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAGCAGTCAAGGAGCATAGTCAAGATGAGCTCTCTGCACATGCCAC
132▶ 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 G C

BstXI (2309) 2301 AGGGGCTGACCCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCAGCAGAGA
99▶ 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

StuI (2444)
2401 CCAATGGCAATGGCTTCAAGCAGACAGTACCTGCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCACTTGGTCTGATGGCCGCC
66▶ 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 A A

BbsI (2590)
XmnI (2586)

2501 CCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGG
32 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 M

AseI (2652)

2601 TGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGT

SacI (2709)

2701 TCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCCG

SpeI (2807)

2801 TTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGC

SnaBI (2935)

2901 CAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAGGTCATGTACTGGGCATAATGCCAGGCGG

NdeI (3040)

3001 GCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTG

3101 ACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATT

PaeI (3226)

SdaI (3218)

BspLU11I (3236)

3201 ACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTT

3301 CCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTCCCCT

3401 GGAAGCTCCCTCGTGCCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGAAGCGTGGCGCTTCTCATAGCTCAC

ApaLI (3550)

3501 GCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCGACCCTGCGCCTTATCCGGTAACTA

3601 TCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAG

3701 TTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCT

3801 CTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGAT

EagI (3986)

PaeI (3966) SwaI (3975) NotI (3985)

3901 CTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAA

4001 TATCTTTATTTTCATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAA

4101 ATAGGCTGTCCCAAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA