



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACACGGCCCGCCCTACCTGAGGCC
PvuII (239)
Bsu36I (291)
301 GCCATCCACGCGGTTGAGTGCCTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

KasI (535) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTCAGCATGCCGCTGCTACTGCTGCCCTGCTGTGGGCAGG
AgeI (552) 1▶ M P L L L L L P L L W A G
SphI (560) ▶

BamHI (612) 601 GGCCTGGCTATGGATCCAAATTTCTGGCTGCAAGTGCAGGAGTCAAGTGCAGGAGGTTTGTGCTCCTCGTCCCTGCACCTTTCTCCATCCC
13▶ A L A M D P N F W L Q V Q E S V T V Q E G L C V L V P C T F F H P

MscI (779) 701 ATACCCTACTACGACAAGAACTCCCAAGTTCATGGTACTGGTCCGGGAAGGAGCCATTATATCCGGGACTCTCCAGTGGCCACAAACAAGCTAGATC
47▶ I P Y Y D K N S P V H G Y W F R E G A I I S G D S P V A T N K L D

BamHI (843) 801 AAGAAGTACAGGAGGAGACTCAGGGCAGATTCCGCTCCTTGGGGATCCAGTAGGAACAACTGCTCCCTGAGCATCGTAGAGCCAGGAGGAGGGATAA
80▶ Q E V Q E E T Q G R F R L L G D P S R N N C S L S I V D A R R R D N
901 TGGTTCACTTCTTTCCGGATGGAGAGGAAGTACCAATACAGTTACAAATCTCCCAAGCTCTGTGCATGTGACAGACTTGACCCACAGGCCAAAA
113▶ G S Y F F R M E R G S T K Y S Y K S P Q L S V H V T D L T H R P K

XbaI (1017) 1001 ATCCTCATCCCTGGCACTCTAGAACCCGGCCACTCCAAAACTGACCTGCTGTGTCTGGCCTGTGAGCAGGGAACACCCCGATCTTCTCCTGGT
147▶ I L I P G T L E P G H S K N L T C S V S W A C E Q G T P P I F S W

PvuII (1103) 1101 TGTCACTGCCCCACCTCCCTGGGCCAGGACTACTCCTCGGTGCTCATAATCACCCACGGCCCAAGGACCACGGCACCAACTGACCTGTCA
180▶ L S A A P T S L G P R T T H S S V L I I T P R P Q D H G T N L T C Q
1201 GGTGAAGTTCGCTGGAGCTGGTGTGACTACGGAGAGAACCATCCAGCTCAACGTACCTATGTTCCACAGAACCACAACTGGTATCTTTCCAGGAGAT
213▶ V K F A G A G V T T E R T I Q L N V T Y V P Q N P T T G I F P G D

XcmI (1319) 1301 GGCTCAGGAAACAAGAGACAGAGCAGGAGTGGTTCATGGGGCCATTGGAGGAGCTGGTGTACAGCCCTGCTGCTCTTTGTCTGCTCATCTTCT
247▶ G S G K Q E T R A G V V H G A I G G A G V T A L L A L C L C L I F

BbsI (1407) 1401 TCATAGTGAAGACCCACAGGAGAAAGCAGCCAGGACAGCAGTGGCAGGAATGACACCCACCCTACCACAGGCTCAGCCTCCCCGAAACACCAGAAGAA
280▶ F I V K T H R R K A A R T A V G R N D T H P T T G S A S P K H Q K K
1501 GTCCAAGTTACATGGCCCACTGAAACCTCAAGCTGTTGAGGTGCCGCCCTACTGTGGAGATGGATGAGGAGCTGCATTATGCTTCCCTCAACTTTTCT
313▶ S K L H G P T E T S S C S G A A P T V E M D E E L H Y A S L N F H

MscI (1682) 1601 GGGATGAATCCTTCAAGGACACCTCCACCGAATACTCAGAGGTGAGACCCAGTGGAAACCCACAAGAGCATCAGTACGTGGCCAGACATGATAAGA
347▶ G M N P S K D T S T E Y S E V R T Q •
1701 TACATTGATGAGTTGGACAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAA

HpaI (1814) 1801 GCTGCAATAAACAAAGTTAAACAACAACAAATTGCATTTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGAGGTTTTTAAAGCAAGTAAACCTCTACAA

EcoRI (1910) 1901 ATGTGGTATGGAATTCTAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCAT
2001 CAGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTACCTCTTCA

SspI (2149) 2101 TTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTT
Swal (2163)
2201 TATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTTGGACAGCA

2301 AGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAA
141▶ N R T Y K L P I L E E I T T K V L K G N M E I L V F

SacI (2424) 2401 GCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACA
114▶ 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 H R V

StuI (2588) 2501 GCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATG
80▶ 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 E I H
2601 GGACAGCAGAGATGATCTCCCAGTCTGGTCTGATGGCCGCCCGACATGGTCTGTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTC
47▶ 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 A V E

BspHI (2738)
 BbsI (2734)
XmnI (2730)

2701 CACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGAGTCGTATTATACATATGCCGATATACTATGCCGATGATTA
 14 V L E L D Q Q S I N F T K M ←

AseI (2796)

SacI (2853)

2801 ATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCCTACCGCCCAT
 ←

SpeI (2951)

2900 TTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCC GTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGG
 ←

SnaBI (3079)

2999 AAATCCCCGTGAGTCAAACCGCTATCCACGCCCATTTGATGTA CTGCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTA CTGCCAA
 ←

NdeI (3184)

3099 GTAGGAAAGTCCCATAAGGTCATGTA CTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTT
 ←

3199 GATGTA CTGCCAAGTGGG CAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGT TACTATGGGAACATACGTCATTATTGA
 ←

PstI (3363)
 SdaI (3362) PacI (3370) BspLU11I (3380)

3299 CGTCAATGGGCGGGGCTGTTGGGCGGT CAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAA TTAAGAACATGTGAGCAAAGG
 ←

3397 CCAGCAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATC AAAAAATCGACGCTCAAGTCAG
 ←

3497 AGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCGGACCCTGCCGCTTACCGGATACC
 ←

ApaLI (3694)

3597 TGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGT
 ←

3697 GCACGAACCCCCGTT CAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCC
 ←

3797 ACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTA
 ←

3897 TCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAA
 ←

3997 GCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATT
 ←

EagI (4130)
 PacI (4110) SwaI (4119) NotI (4129)

4097 TTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACT
 ←

4197 AACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA