



PvuI (7) SgfI (6) MfeI (82) EcoNI (96)
 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
 101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245) Bsu36I (291)
 Psp1406I (203) PvuII (239) EcoNI (287)
 201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
 301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

AgeI (552) BspHI (568)
 501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTAGGAGGGCCATCATGACTAAACCAAATTCCTCATCTTCTAC
 601 TGTATCATTGTTTTAGGACTGACACTTATGAAAATCCAATTATCTGAGGAATGTGAGCTTATCATAAAGAGGCCAAACGAAACCTTACCAGAGTGCCCA
 11▶ C I I V L G L T L M K I Q L S E E C E L I I K R P N A N L T R V P

BglII (728)
 701 AGGACCTACCCTTCAAACAACACTTTAGATCTATCACAACAATATATCTGAGCTTCAGACTTCTGACATCCTCTATTGTCCAAGCTGAGGGTCTC
 44▶ K D L P L Q T T T L D L S Q N N I S E L Q T S D I L S L S K L R V L
 801 GATAATGTCTACAACAGACTCCAGTATCTTAATATCAGTGTTCCTCAAATTCACACAGAGCTGGAATATTTGGATTTGCCACAATGAGCTAAAGGTG
 77▶ I M S Y N R L Q Y L N I S V F K F N T E L E Y L D L S H N E L K V
 901 ATCTTGTGCCACCAACAGTCAAGCTCAAGCATTGGACCTCTCCTTAAATGCCTTTGATGCCCTGCCTATATGCAAAGAATTTGGCAACATGTCACAAC
 111▶ I L C H P T V S L K H L D L S F N A F D A L P I C K E F G N M S Q

BsrBI (1016) PvuII (1047)
 1001 TACAGTTCCTGGGTTGAGCGGTTCTCGGGTACAAAGTCAAGTGTGACGCTGATTGCTCATTGAAACATCAGTAAGTTTTGCTGGTGTAGGAGATGC
 144▶ L Q F L G L S G S R V Q S S S V Q L I A H L N I S K V L L V L G D A
 1101 TTATGGGAAAAAGAAGACCCGAATCTCTTCGGCAGCTTAGACTGAGACTCTGCATATTGTTTTCCCGTCGAAAAGAGAATCCGTTTTCTCTGGAT
 177▶ Y G E K E D P E S L R H V S T E T L H I V F P S K R E F R F L L D

PvuI (1216) HindIII (1293)
 1201 GTGTCGTCAGCACTACGATCGGTTTGGAACTGTCTAACATCAAGTGTGTGCTTGAAGACCAGGGGCTGCTCTTATTTCTACGTGCTTTGCAAGCTTG
 211▶ V S V S T T I G L E L S N I K C V L E D Q G C S Y F L R A L S K L
 1301 GAAAGAATCTGAAGCTCTCAAATCTTACCTGAACAATGTGAAACAACGTTGAAATTCCTTATTAATATCCTCCAGATAGTTTGGCATAACGCAAGTCAA
 244▶ G K N L K L S N L T L N N V E T T W N S F I N I L Q I V W H T P V K
 1401 ATATTTCTCAATTTCAAATGTGAAGCTACAAGTCAACTTGCCTTCAGGATGTTCAATATTCTGACACTTCTCTGAAGGCTTTGTCGATAACATCAAGT
 277▶ Y F S I S N V K L Q G Q L A F R M F N Y S D T S L K A L S I H Q V
 1501 GTCAGTGTCTTACAGTTCCTCCCAAAAGTTACATACAGTATCTTTGCCAATGAACATCCAAAACCTTACAATGCTGGAACACACATGGTCCACA
 311▶ V T D T V F S F P Q S Y I Y S I F A N M N I Q N F T M S G T H M V H
 1601 TGCTGTGCCCGTCCCAAGTTAGCCATTCTGCATGTGGACTTACAGATAACCTTTAACAGACATGGTTTTAAAGACTGTAGAACTTAGTTAGATT
 344▶ M L C P S Q V S P F L H V D F T D N L L T D M V F K D C R N L V R L
 1701 GAAAACACTTAGTTTACAAAAGAATCAGTTAAAAAACCTTGAGAATATAATCCTCACATCTGCAAAGATGACATCCCTACAAAACACTAGACATTAGCCAG
 377▶ K T L S L Q K N Q L K N L E N I I L T S A K M T S L Q K L D I S Q

BstBI (1871) Bsp119I (1871)
 1801 AATTCTTAAGGTACAGCGATGGGGGAATCCCATGCGCCTGGACCCAGAGTTTGTAGTTTTAAATTTGCTTCGAATATGCTTACAGGCTCTGTCTTCA
 411▶ N S L R Y S D G G I P C A W T Q S L L V L N L S S N M L T G S V F

BstAPI (1979) PstI (1977) SdaI (1976)
 1901 GATGCTTACCTCCCAAAGTCAAGGTCCTTACCTTCAACAACAACAGGATAATGAGCATCCCTAAAGATGTACCACCTGCAGGCTTTGCAAGAACTCAA
 444▶ R C L P P K V K V L D L H N N R I M S I P K D V T H L Q A L Q E L N
 2001 TGTAGCATCCAACCTTAACTGACCTTCTGGGTGCGGGGCTTACAGCAGCTTTCTGTGCTGGTGCATCGACCATAACTCAGTTTCCATCCCTCTGAG
 477▶ V A S N S L T D L P G C G A F S S L S V L V I D H N S V S H P S E

Tth111I (2178)
 2101 GATTTCTCCAGAGCTGTCAGAATATTAGATCCCTAACAGCGGAAACAACCCATTCCAATGCACATGTGAGCTGAGGACTTTGTCAAGAACATAGGCT
 511▶ D F F Q S C Q N I R S L T A G N N P F Q C T C E L R D F V K N I G
 2201 GGGTAGCAAGAGAAGTGGTGGAGGGCTGGCCTGACTCTTACAGGTGTGACTACCCAGAAAGCTTAGGGGAAGTGCAGTGGGACTTCCACATGTCTCC
 544▶ W V A R E V V E G W P D S Y R C D Y P E S S R G T A L R D F H M S P
 2301 ACTATCCTGTGATACTGTTCTGCTGACTGTCACCATCGGGGCCACTATGCTGGTGTGCTGACTGGGGCTTTCCTCTGTCTACTTTGACCTGCC
 577▶ L S C D T V L L T V T I G A T M L V L A V L A V T G A F L C L Y F D L P
 2401 TGGTATGTGAGGATGCTGTGTGACACAGACAGACCAGGACAGGGCCAGGCACATCCCTTAGAGGAAGTCCAGAGAAGAACTCCAGTTCCATGCTTTTG
 611▶ W Y V R M L C Q W T Q T R H R A R H I P L E E L Q R N L Q F H A F
 2501 TCTCATAAGTGGGATGATTCTGCTGGTGAAGAAGCAATTAACCAACCTAGAGAAAGATGACATCCAGATTTGCTCCATGAGAGGAACCTTTGT
 644▶ V S Y S G H D S A W V K N E L L P N L E K D D I Q I C L H E R N F V
 2601 CCCTGGCAAGAGCATTGTGGAGAACATCATCAATTTCAATGAGAAGAGTTACAAGTCCATCTTTGTGCTGCTCCCACTTATCCAGAGTGAAGTGT
 677▶ P G K S I V E N I I N F I E K S Y K S I F V L S P H F I Q S E W C

ScaI (2785)
 2701 CATTATGAAGTCTATTTTGGCCATCACAATCTCTTCCATGAAGGCTCTGATAACTTAATCCTCATCTTGTGGACCCATTCCCACTACTCCATCCCTA
 711▶ H Y E L Y F A H H N L F H E G S D N L I L I L L A P I P Q Y S I P
 2801 CCAATTACCACAAGCTCAAACCTCTCATGTACGAAGGACCTATCTGGAATGGCCACAGAGAAGAACAAGCATGGACTTTTTTGGGCAACCTAAGAGC
 744▶ T N Y H K L K T L M S R R T Y L E W P T E K N K H G L F W A N L R A

2901 ATCCATTAATGTTAAGCTGGTTAACAGGCAAGGAACGTGTTACACACAGCAA**BamHI** (2955) NdeI (2995)
777▶ S I N V K L V N Q A E G T C Y T Q Q G S Y P Y D V P D Y A G Y P Y

3001 **NheI** (3052) MscI (3058)
811▶ D V P D Y A G Y P Y D V P D Y A •

3101 **HpaI** (3190)
ACAACTAGAATGCAGTGAAAAAATGCTTTATTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACA

3201 **MfeI** (3201)
ACAATTGCATTCATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAATAC

3301 AGCATAGCAAACCTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATT

3401 **SapI** (3468)
AGCTGTTGCAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGATTTTTCCAAGTTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACGT

3501 **SwaI** (3539)
ACCTCCCACATTCCTTTTTAGTAAAATATTCAGAAAATATTTAAATACATCATTGCAATGAAAAATAATGTTTTTTATTAGGCAGAATCCAGATGCTCA

3601 AGGCCCTTCATAATATCCCCAGTTTAGTAGTTGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTCTAGCTTTAGT
141 • N

3701 TCCTGGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGAT
139◀ 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 C D P A Y D S I

3801 **SacI** (3800)
106◀ GAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCTTC
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 A V I T D F D K

3901 **StuI** (3964)
72◀ TGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACGACAGACAGTGCCTGCAATGTGGACAGCAGAGATGATCTCCCCAG
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 V A S I I E G T

4001 TCTTGGTCTGATGGCCGCCCAGCATGGTCTGTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGA
39◀ 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 V L E L D Q Q S

4101 **BspHI** (4114)
6◀ GATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCG
I N F T K M

4201 **SacI** (4229)
TCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACTCCACCGTACACGCCTACCGCCATTGCGTCAATGGGGCGGAGTTGTTA

4301 **SpeI** (4327)
CGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAACAAACTCCCATTTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCCTAT

4400 **SnaBI** (4455)
CCACGCCATTGATGACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCCATAAGGTCATGT

4500 **NdeI** (4560)
ACTGGCATAATGCCAGGCGGGCATTACCCTGATTGACGTCAATAGGGGGCTACTTGGCATAATGATACACTTGATGACTGCCAAGTGGGCGAGTTTA

4600 CCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGC

4700 **PstI** (4739) **SdaI** (4738) **PacI** (4746)
GGTCAGCCAGGCGGGCATTACCCTGTAAGTTATGTAACCCCTGCGAGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAA

4798 AAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCAAACCCGACAGGACTAT

4898 AAAGATAACAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGAAG

4998 **ApaLI** (5070)
CGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTGCCTCAAGCTGGGTGTGTGCACGAACCCCCGTTCCAGCCGAC

5098 CGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGA

5198 GGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGCCAACTACGGCTACTAGAGAAGCAGTATTGGTATCTGCGCTCTGCTGAAGCCAGTTAC

5298 CTTCGAAAAAGAGTTGGTAGCTCTTATCGGCAAACAAACCCGCTGGTAGCGGTGTTTTTTTTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAA

5398 **PacI** (5486) **SwaI** (5495)
GGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGTCATGGCTAGTTAATTAACAT

EagI (5506)
NotI (5505)
5498 TTAATC AGCGGCCGCAATAAAATATCTTTATTTTCAATTACATCTGTGTGGTTTTTGTGTGAATCGTAACATACGCTCTCCATCAAAAACAA
5598 ACGAAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA