



150

PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCCGCCGCCCTACCTGAGGCC
HindIII (245)
PvuII (239)
Bsu36I (291)
301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

KasI (535) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTGAGCATGCCACGTGCTTTGTGGACAGCATGGGTCTGGGCTGT
AgeI (552) 1 M P R A L W T A W V W A V
SphI (560)
BbrPI (566)
BglIII (682)
601 CATCATCTGTCCACGGAAGGAGCCTCTGACCAGGCTTCTTCTGTCTTGTGACCCAACCTGGTGTCTGCGATGGCCATTCCAGATCTTTAACTCCATC
13 I I L S T E G A S D Q A S S L S C D P T G V C D G H S R S L N S I

EcoRV (748) 701 CCCTCTGGTCTCACGGCAGGTGTGAAAAGCCTTACCTGTCCAACAATGATATCACTATGTCGGCAACAGAGACCTGCAGAGGTGTGTGAACCTGAAGA
47 P S G L T A G V K S L D L S N N D I T Y V G N R D L Q R C V N L K

DraIII (826) 801 CTCTGAGGCTGGGGCCAATGAAATTCACACAGTGGAGGAAGATTCTTTTTTACCTGAGGAATCTTGAATATTTGACTTATCCTATAATCGCTTATC
80 T L R L G A N E I H T V E E D S F F H L R N L E Y L D L S Y N R L S
901 TAACCTATCATCTCTGTTCCAGTCCCTTTATGTCTTGAATTTCTAAACTTACTGGGAAATTTATACAAAACATTTGGGAAACATCTCTTTTTTCT
113 N L S S S W F R S L Y V L K F L N L L G N L Y K T L G E T S L F S
1001 CATCTCCAAATCTCGGACCCTAAAAGTAGGAAATAGTAACAGCTTCACTGAGATTCATGAAAAGGATTTCACTGGACTGACTTTTCTTGGAGGCTTG
147 H L P N L R T L K V G N S N S F T E I H E K D F T G L T F L E E L
1101 AGATCAGTCTCAAAATCTGCAGATATATGTGCCAAAGAGTTTAAAGTCAATCCAGAACATTAGCCATCTGATTCTACATCTGAAGCAGCCTATTTTACT
180 E I S A C Q N L Q I Y V P K S L G I Q N I S H L I L H L K Q P I L L
1201 CGTGGACATTTCTGTAGATATTGTAAGTTCCTTAGATGTTTTGAACSTGAGAGATACTAATTTGCACACTTTCCATTTTTCAGAAGCATCCATCAGTGAA
213 V D I L V D I V S S L D C F E L R D T N L H T F H F S E A S I S E

HindIII (1318) 1301 ATGAGTACATCGGTTAAAAAGCTTATATTTAGAAATGTGCAATTCACCGATGAAAGTTTTGTTGAAGTTGTCAAACCTGTTTAACTATGTTTCTGGGATCT
247 M S T S V K K L I F R N V Q F T D E S F V E V V K L F N Y V S G I

AvrII (1476) 1401 TAGAAGTAGAGTTTGATGACTGTACCCATGATGGAATTTGGCGATTTTAGAGCACTGAGTTGGACAGAATTAGACACCTAGGTAATGTGGAGACGTTAAC
280 L E V E F D D C T H D G I G D F R A L S L D R I R H L G N V E T L T
1501 AATACGGAAAGTTGCATATCCACAGTTTTTCTATTTCTAGTCTGAGTAGTATATCCACTCACAGGCAGAGTAAAAGAGTCAACAATAGAAAACAGT
313 I R K L H I P Q F F L F H D L S S I Y P L T G R V R V K R V T I E N S
1601 AAGTTTTTCTGGTTCTTGTACTTTCAACAATTTAAATCATTAGAATATTTGGATCTCAGTGAACCTAATGTCTGAAGAAACCTTAAAAACT
347 K V F L V P C L L S Q H L K S L E Y L D L S E N L M S E E T L K N
1701 CAGCCTGAAGGATGCTGGCCCTTCTCAAACCTTGGTTTTAAGGCAGAATCGTTTGAATCACTAGAAAAACGGGAGAATTTTGTCTACTCTGGA
380 S A C K D A W P F L Q T L V L R Q N R L K S L E K T G E L L L T L E

EcoRV (1816) 1801 AAATCTGAATAACCTTGATATCAGTAAGAATAATTTCTTCAATGCCTGAAACTTGTGAGTGGCCAGGAAAAATGAAACAGCTGAACCTATCCAGCACA
413 N L N N L D I S K N N F L S M P E T C Q W P G K M K Q L N L S S T
1901 AGGATACACAGTTAACTCAGTGCCTTCCCGAGCCCTGGAAATTTAGATGTAGCAATAACAATCTCGATTCAATTTCTTGTATTTGCCACAATCA
447 R I H S L T Q C L P Q T L E I L D V S N N N L D S F S L I L P Q L
2001 AAGAACTTATATTTCCAGAAAATAGTTGAAGACTCTACCAGATGCCTCCTTCTTACCCGTGTATCAGTTATGAGAATTAGCAGAAAATATAATAAATAC
480 K E L Y I S R N K L K T L P D A S F L P V L S V M R I S R N I I N T
2101 TTTCTCAAAGGAACAACCTTGATTCTTTTCAAGCACTGAAAGACGTTGGAGGCGGGTGGCAACAACCTTCAATTTGCTCCTGTGACTTCTGTCTTCCACACAG
513 F S K E Q L D S F Q Q L K T L E A G G N N F I C S C D F L S F T Q

SaII (2227) 2201 GGACAGCAGGCACTGGGCGGTGCTGCTGCTGACTGGCCGATGACTACCGCTGTGACTCTCCCTCCATGTGCGGGGCCAGCGGGTGCAGGACGCCCGGC
547 G Q Q A L G R V L V D W P D D Y R C D S P S H V R G Q R V Q D A R

EagI (2324) 2301 TCTCCCTTTCTGAATGCCACAGGCGCGGTGTCGCGAGCGTGTGTGCCCTTCTCTGTTGCTCCTGCTCACGGGGGTGCTGTGTACCGTTTCCA
580 L S L S E C H R A A V V S A A C C A L F L L L L L L T G V L C H R F H
2401 CGGACTGTGGTACATGAAGATGATGTGGCGGTGGCTGCAGGCCAAGAGGAAGCCAGGAAGGCTCCCGCAGGGACATCTGCTACGACGCTTCTGTGTC
613 G L W Y M K M M W A W L Q A K R K P R K A P R R D I C Y D A F V S

BsrBI (2506) 2501 TACAGCGAGCGGATCTCTACTGGTGGAGAACCTCATGGTCCAGGAGCTGGAGCACTTCAACCTCCCTTTAAGCTGTGCTTTCATAAGCGAGACTTCA
647 Y S E R D T S Y W V E N L M V Q E L E H F N P P F K L C L H K R D F
2601 TTCCTGGCAAGTGGATTATCGACAACATCATTGACTCCATTGAAAAGACCCACAAAACATCTTTGTGCTTTCCGAGAATTTGTGAAGAGCGAGTGGTG
680 I P G K W I I D N I I D S I E K S H K T I F V L S E N F V K S E W C
2701 CAAGTATGAGCTGGACTTCTCCATTTCCGCTCTTTGATGAGAACAATGATGCTGCCATTCTGATTCTGCTGGAGCCATTGACAAGAAGGCCATTCCC
713 K Y E L D F S H F R L F D E N N D A A I L I L L E P I D K K A I P

Eco47III (2801)
AfeI (2801)
 2801 CAGCGCTTCTGTAAGCTGCGGAAGATCATGAACACCAAGACCTACCTGGAGTGGCCCGTGGATGAGACTCAGCAGGAAGGTTTTGGTTAAATTTGAGAG
 747▶ Q R F C K L R K I M N T K T Y L E W P V D E T Q Q E G F W L N L R

BamHI (2916)
AvrII (2912) **NheI (2922)**
 2901 CTGCAATAAGGTCTAGGATCCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTT
 780▶ A A I R S •

HpaI (3060) **MfeI (3071)**
 3001 ATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAGTTAACAAACAACAAATTGCATTCATTTTATGTTTCAGGTTCT

EcoRI (3156)
 3101 AGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTCTAAAAATACAGCATAGCAAACCTTAACTCCAAATCAA
 3201 GCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGG
 3301 AGTTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTGCTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATAT

SwaI (3409)
 3401 TCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTA
 3501 GTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTTCTGGTGTACTTGAGGGGGATGAGTTCCT
 141▶ N R T Y K L P I L E E

SacI (3670) **BstXI**
 3601 CAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTTCGCACATGCCACAGGGGCTGAC
 129▶ 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 P S V
 3701 CACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCAGCAGCAGCCCAATGGCA
 96▶ 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 I A

StuI (3834)
 3801 ATGGCTTCAGCACAGACAGTGCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGT
 62▶ 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 V H H

XmnI (3976)
 3901 GCTTGTGCTCATAGAGCATGGTGTCTTCTCAGTGGCAGCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCT
 29▶ 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 (4042) **SacI (4099)**
 4001 ATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACG

SpeI (4197)
 4101 AGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACT
 4201 AGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGGTCAAAACCGCTATCCACGCCATTGATGACTGCCAAAACCGCA

SnaBI (4325)
 4301 TCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACC

NdeI (4430)
 4401 GTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGG
 4501 AAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTGCTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTT

SdaI (4608) **PacI (4616)** **BspLU11I (4626)**
 4601 ATGTAACGCCCTGCAGGTTAA TTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCCTTTTCCATAGGC
 4699 TCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTC
 4799 CCTCGTGGCTCTCTGTTCCGACCTGCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGG

ApaLI (4940)
 4899 TATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTG
 4999 AGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAA
 5099 GTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCC
 5199 GGCAAAACAAACCCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTA

PacI (5356) **SwaI (5365)** **EagI (5376)** **NotI (5375)**
 5299 CGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTA
 5399 TTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTG
 5499 TCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTATCGAA