



PvuI (7)
SgfI (6) **EcoNI (96)**
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTATGCTGTACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
EcoNI (287)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGACAGACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGTCTTTGTTTCGTTT

KasI (535) **AgeI (552)** **BspHI (568)**
501 TCTGTTTGTCCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTAGGAGGGCCATCATGAGACAGACTTTGCCTGTATCTACTTT
▶ 1▶ M R Q T L P C I Y F

ApaLI (650)
DraIII (644)
601 TGGGGGGCCTTTTGGCCTTTGGGATGCTGTGTGCATCCTCCACCACCAAGTGCACTGTTAGCCATGAAGTTGCTGACTGCAGCCACCTGAAGTTGACTC
11▶ W G G L L P F G M L C A S S T T K C T V S H E V A D C S H L K L T
Acc65I (701)
701 AGGTACCCGATGATCTACCCACAACATAACAGTGTGAACTTACCCATAATCAACTCAGAAGATTACCAGCCGCCAACTTCAAGGTATAGCCAGCT
44▶ Q V P D D L P T N I T V L N L T H N Q L R R L P A A N F T R Y S Q L

XcmI (826)
801 AACTAGCTTGGATGTAGGATTTAACACCATCTCAAACCTGGAGCCAGAATTGTGCCAGAACTTCCCATGTTAAAAGTTTTGAACCTCCAGCACAAATGAG
77▶ T S L D V G F N T I S K L E P E L C Q K L P M L K V L N L Q H N E
901 CTATCTAACTTTCTGATAAAACCTTGCCTTTCGACGAATTTGACTGAACTCCATCTCATGTCCAACCTCAATCCAGAAAATTTAAAATAATCCCTTTG
111▶ L S Q L S D K T F A F C T N L T E L H L M S N S I Q K I K N N P F

BglIII (1025)
1001 TCAAGCAGAAGAATTTAATCACATTAGATCTGTCTCATAATGGCTTGCATCTACAAAATTAGGAACTCAGGTTGAGTGGAAAATCTCCAAGAGCTTCT
144▶ V K Q K N L I T L D L S H N G L S S T K L G T Q V Q L E N L Q E L L

Eco47III (1121) **EcoRV (1143)**
1101 ATTATCAACAATAAAAATTCAGCGCTAAAAAGTGAAGAACTGGATATCTTTGCCAATTCATCTTTAAAAAATTAGAGTTGTCATCGAATCAAATTA
177▶ L S N N K I Q A L K S E E L D I F A N S S L K K L E L S S N Q I K

SmaI (1268)
1201 GAGTTTTCTCCAGGGTGTTTTACGCAATTTGGAAGATTATTTGGCCTCTTTCTGAACAATGTCCAGCTGGGTCCAGCCTTACAGAGAAGCTATGTTTGG
211▶ E F S P G C F H A I G R L F G L F L N N V Q L G P S L T E K L C L
1301 AATTAGCAAAACACAGCATTTCGGAATCTGTCTCTGAGTAAACAGCCAGCTGTCCACCACCAGCAATACAACCTTTCTGGGACTAAAGTGGACAAATCTCAC
244▶ E L A N T S I R N L S L S N S Q L S T T S N T T F L G L K W T N L T
1401 TATGCTCGATCTTCTTACAACAACCTAAATGTGGTTGGTAACGATTCTTTGCTTGGCTTCCACAACAGAAATTTCTTCTAGAGTATAATAATATA
277▶ M L D L S Y N N L N V V G N D S F A W L P Q L E Y F F L E Y N N I

Acc65I (1543)
1501 CAGCATTTGTTTTCTCACTCTTTGCACGGGCTTTTCAATGTGAGGTACCTGAAATTTGAAACGGTCTTTTACTAAACAAAGTATTTCCCTTGCCTCACTCC
311▶ Q H L F S H S L H G L F N V R Y L N L K R S F T K Q S I S L A S L
1601 CCAAGATTGATGATTTTTCTTTTCACTGCTTAAATGTTTGGAGCACCTTAACATGGAAGATAATGATATTCCAGGCATAAAAAGCAATATGTTACAGG
344▶ P K I D D F S F Q W L K C L E H L N M E D N D I P G I K S N M F T G
1701 ATTGATAAACCTGAAATACCTAAGTCTATCCAACCTCTTACAAGTTTGGCAACTTTGACAAAATGAAACATTTGATCACTTGTCTCCTTCCCTTAC
377▶ L I N L K Y L S L S N S F T S L R T L T N E T F V L A H S P L H

ScaI (1871)
1801 ATACTCAACCTAACCAAGAATAAAAATCTCAAAAATAGAGAGTGATGCTTTCTCTTGGTTGGGCCACCTAGAAGTACTTGACCTGGGCCTTAATGAAATTG
411▶ I L N L T K N K I S K I E S D A F S W L G H L E V L D L G L N E I

XbaI (1931)
1901 GGCAAGAAGTACAGGCCAGGAATGGAGAGGTCTAGAAAATATTTTTGAAATCTATCTTTCTACAACAAGTACCTGCAGCTGACTAGGAACTCCTTTGG
444▶ G Q E L T G Q E W R G L E N I F E I Y L S Y N K Y L Q L T R N S F A
2001 CTTGGTCCCAAGCCTTCAACGACTGATGCTCCGAGGGTGGCCCTTAAAAATGTGGATAGCTCTCCTTACCATTCCAGCCTCTTCGTAACCTGACCATT
477▶ L V P S L Q R L M L R R V A L K N V D S S P S P F Q P L R N L T I

BspLU11I (2140)
2101 CTGGATCTAAGCAACAACAACATAGCCAACATAAATGATGACATGTTGGAGGGTCTTGAGAACTAGAAATCTCGATTTGCAGCATAACAACCTTAGCAC
511▶ L D L S N N N I A N I N D D M L E G L E K L E I L D L Q H N N L A
2201 GGCTCTGGAACACGCAACCCCTGGTGGTCCCATTATTTCTAAAGGGTCTGTCTCACCTCCACATCCTTAACCTGGAGTCCAACGGCTTTGACGAGAT
544▶ R L W K H A N P G G P I Y F L K G L S H L H I L N L E S N G F D E I

ClaI (2340)
2301 CCCAGTTGAGGTCTTCAAGGATTTATTTGAACTAAAGATCATGATTTAGGATTGAATAATTTAAACACACTTCCAGCATCTGTCTTTAATAATCAGGTG
577▶ P V E V F K D L F E L K I I D L G L N N L N T L P A S V F N N Q V

XmnI (2450)
2401 TCTCTAAAGTCATTGAACCTTCAGAAGAATCTCATAACATCCGTTGAGAAGAAGGTTTTTCGGGCCAGCTTTCAGGAACCTGACTGAGTTAGATATGCGCT
611▶ S L K S L N L Q K N L I T S V E K K V F G P A F R N L T E L D M R

BbrPI (2516)
2501 TTAATCCCTTTGATTGCACGTGTGAAAGTATTGCCTGGTTTGTAAATGGATTAACGAGACCCATACCAACATCCCTGAGCTGTCAAGCCACTACCTTTG
644▶ F N P F D C T C E S I A W F V N W I N E T H T N I P E L S S H Y L C

BspHI [m] (2686)
2601 CAACACTCCACCTCACTATCATGGGTTCCAGTGAGACTTTTTGATACATCATCTTGAAAGACAGTGCCCCCTTTGAACTCTTTTTCATGATCAATACC
677▶ N T P P H Y H G F P V R L F D T S S C K D S A P F E L F F M I N T

BsaBI (2711) **EcoRV (2756)**
 2701 AGTATCCTGTTGATTTTTATCTTTATTGTACTTCTCATCCACTTTGAGGGCTGGAGGATATCTTTTATTGGAATGTTTCAGTACATCGAGTTCTTGTT
 711▶ S I L L I F I F I V L L I H F E G W R I S F Y W N V S V H R V L G
 2801 TCAAAGAAATAGACAGACAGACAGAACAGTTTGAATATGCAGCATATATAATTCATGCCTATAAAGATAAGGATTGGGTCTGGGAACATTTCTTCAAT
 744▶ F K E I D R Q T E Q F E Y A A Y I I H A Y K D K D W V W E H F S S M
HpaI (2979)
 2901 GGAAGAAAGAACCAATCTCTCAAATTTGTCTGGAAGAAAGGGACTTTGAGGCGGGTGTTTTTGAACTAGAAGCAATTGTTAACAGCATCAAAAAGAGC
 777▶ E K E D Q S L K F C L E E R D F E A G V F E L E A I V N S I K R S
 3001 AGAAAAATTTTTTTGTTATAACACACCATCTATTAAGACCCATTATGCAAAAGATTCAAGGTACATCATGCAGTTCAACAAGCTATTGAACAAAATC
 811▶ R K I I F V I T H H L L K D P L C K R F K V H H A V Q Q A I E Q N
BstXI (3106)
 3101 TGGATTCATTATATTGTTTTCTTGAGGAGATTCCAGATTATAAACTGAACCATGCACCTCTGTTTGCAGAGGAATGTTTAAATCTCACTGCATCTT
 844▶ L D S I I L V F L E E I P D Y K L N H A L C L R R G M F K S H C I L
MscI (3204) **BamHI (3261)** **BsrGI (3275)**
 3201 GAACTGGCCAGTTCAGAAAGAACGGATAGTGCCTTTTCGTATAAATTGCAAGTAGCAGTTGGATCCAAAACCTGTACATTAATTTATTTAAATATT
 877▶ N W P V Q K E R I G A F R H K L Q V A L G S K N S V H •
MscI (3329) **NheI (3323)**
 3301 CAATTAGCAAAGGAGAAACTTT**CGTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACA**ACTAGAAATGCAGTGAAAAAATGCTT
HpaI (3461)
 3401 TATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACCAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGGTT
EcoRI (3557)
 3501 CAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGAATTTCAAATACAGCATAGCAAACTTTAACCTCCAATCA
 3601 AGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGACGCCTCACCTTCTTTCATG
SapI (3739)
 3701 GAGTTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTCTTCTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTAGTAAAATA
 3801 TTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGT
 3901 AGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTACTTGAGGGGGATGAGTTCC
 141▶ • N R T Y K L P I L E
SacI (4071)
 4001 TCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGA
 129▶ 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 P S V
BstXI (4100)
 4101 CCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGC
 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 (4235)
 4201 AATGGCTTCAAGCAGACAGTACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGG
 63▶ 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
XmnI (4377)
 4301 TGCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGGTCTTATGGTGGCCCTCC
 29▶ 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 (4443)
 4401 TATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAC
SacI (4500) **SpeI (4598)**
 4501 GAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTGTTGATTTA
 4601 TAGTCAAACAAACTCCCATTGACGTCAATGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGC
SnaBI (4726)
 4701 ATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCCATAAGGTCATGACTGGGCATAATGCCAGGCGGGCCATTTAC
NdeI (4831)
 4801 CGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCTCAAGTGGGCGAGTTTACCCTAAATACTCCACCCATTGACGTCAATG
 4901 GAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGCTGTTGGGCGTCCAGCCAGGCGGGCCATTTACCCTAAGT
Pacl (5017) **SdaI (5009)** **BspLU11I (5027)**
 5001 TATGTAACGCCTGCAGGTTAA**TTAAGA**ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCCGTGTGGCGTTTTTCCATAGGCT
 5101 CCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCTCGGAAGCTCC
 5201 CTCGTGGCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGTCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTACGCTGTAGGT
ApaLI (5341)
 5301 ATCTCAGTTCGGTGTAGGCTGTTCCGCTCCAAGCTGGGCTGTGTCACGAACCCCCGTTCAAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGA
 5401 GTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTTCTTGAAG

5501 TGGTGGCCTAACTACGGCTACACTAGAGAAGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCG

5601 GCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTAC

5701 GGGGTCTGACGCTCAGTGGAAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTAT

PacI (5757)

EagI (5777)

NotI (5776)

5801 TTTCATTACATCTGTGTGTTGGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGT

5901 CCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA