



125

PvuI (7) SgfI (6) MfeI (82) EcoNI (96)
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCCGCAATTGAACGGGTGCCTA
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGTCTGTACTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) HindIII (245) Bsu36I (291) EcoNI (287)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCCTTACCGCGCCGCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTGTAGTGTGGTCTGCGCCCTCCCGCTGTGGTGCCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) NaeI (441)
401 GGGCCTTTGTCCGGCCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) AgeI (552) BspHI (560)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCCCTACCTGAGATCACCGGTCATCATGAGCGCCTCCCGCTCGGTCGGGGGCCAAGTCCCCCA
1▶ M S A S A S V G G Q V P Q

XmaI (606)
601 GCCACCCCGGGCCCGCGCGTGTCTGCTCCCGGTTCTGCCGCGGGGCGCTGCATGTGGAGCTGCCGCTCAGCAGCGGCGTCTTCGACATCTTCGG
13▶ P P P G P A A A L P P G S A A R A L H V E L P S Q Q R R L R H L R
701 AACATTGCTGCCGGAACATTGTTAATAGAAATGGCCATCAGCTCCTTGATACCTACTTTACACTTCACTTGTGTAGTACTGAAAAGATATATAAGAAT
47▶ N I A A R N I V N R N G H Q L L D T Y F T L H L C S T E K I Y K E
MscI (732) ScaI (775)
801 TTTATAGAAGTGAAGTGATTAAGAATTCCTTGAATCCACGTGGCGAAGTCTCGATTTTGAATTATGCCAGACCGTCTTGATACATCTGTGTCTTGTTT
80▶ F Y R S E V I K N S L N P T W R S L D F G I M P D R L D T S V S C F
901 CGTGGTGAAGATATGGGGTGGAAAGGAGAACATCTACAGCTGTTGATTGAATGGAAAGTCTGTTGGATGGGCTGAAATACTGGGTGAGGAGGATCAT
113▶ V V K I W G G K E N I Y Q L L I E W K V C L D G L K Y L G Q Q I H
1001 GCCGAAACCAAATGAAATAATTTTGGGCTGAATGATGATGATACTATGGTGCTCATTGAAACATAAGGGTATTCAAATGCTCAGAAGACTATTCTT
147▶ A R N Q N E I I F G L N D G Y Y G A P F E H K G Y S N A Q K T I L
1101 TGCAGGTGGATCAGAANTGTGTTCGCAATTCACGATGCTTCTTTGCTACCGCTTCATAGAGCCAGTGTGCAATTAACAGACTCAGGTAAGTGT
180▶ L Q V D Q N C V R N S Y D V F S L R L H R A Q C A I K Q T Q V T V
1201 TCAGAAAATTGAAAAGAAATGAAAGAAAATAAGACTCACATCTACAAGCAATGAAGTAAAAAAGTGAATGCCTGCAGTAAAAATTTTGGTG
213▶ Q K I G K E I E E K L R L T S T S N E L K K K S E C L Q L K I L V
HindIII (1328)
1301 CTTAGAATGAAGTGAACGGCAGAAGAAAGCTTTGGGAGGGGAGGTTGGCATTACTGCATAAGCAACAAATTGCATTACAAGACAAGGAAGTGCATTTT
247▶ L Q N E L E R Q K K A L G R E V A L L H K Q Q I A L Q D K G S A F
1401 CAGCTGAGCACCTCAAACCTCAACTCCAGAAGGAATCCCTAAATGAGCTGAGGAAGGAGTGCAGTCAAAAAGAGAACTCTTCTTGAAGACTAATGCTCA
280▶ S A E H L K L Q L Q K E S L N E L R K E C T A K R E L F L K T N A Q
1501 GTTGACAATTCGTTGCAGGCAGTACTCTCTGAGCTTTCTACATTTACCCTATTGATTTGAATGAACATAAGGATTAAGTGTGATGGGTGTCAAGTTG
313▶ L T I R C R Q L L S E L S Y I Y P I D L N E H K D Y F V C G V K L
1601 CCTAATTCGAGGACTTCCAAGCAAAAGATGATGGAAGCATTGCTGTGCCCTTGTDTACTGCACATCTGGTCTCCATGATTTCTTTTCCCTACAAG
347▶ P N S E D F Q A K D D G S I A V A L G Y T A H L V S M I S F F L Q
EcoRV (1709) XbaI (1732)
1701 TGCCCTCAGATATCCTATAATTCAATGAGGGGCTAGATCAACAATCAAGACAATATCAATGACAACTGACGAAAAGGAGAGAGTTTCCACTGTA
380▶ V P L R Y P I I H K G S R S T I K D N I N D K L T E K E R E F P L Y
EcoRV (1871)
1801 TCCAAAAGGAGGGGAGAAGTTGCAGTTTGATTGTT
413▶ P K G G E K L Q F D Y G V Y L L N K N I A Q L R Y Q H G L G T P D
1901 TTGCGCAAACCTTCCAACCTGAAAACCTCATGGAGCATGGACTAATGGTCAGGTGTGACAGACATCACACCTCCAGTGAATCCCTGTTCTTAAGA
447▶ L R Q T L P N L K N F M E H G L L M V R C D R H H T S S A I P V P K
BamHI (2045)
2001 GACAAAGCTCCATATTTGGGGTGCAGATGTAGGCTTCTGCGGGGATCCCTTACCAGACAAGGACATCGAAAACGGCCAGCTCTGAGAATGAGAG
480▶ R Q S S I F G G A D V G F S G G I P S P D K G H R K R A S S E N E R
PshAI (2154) NcoI (2168)
2101 ACTCAGTACAAAACCCCTCCTCCAGTTACAACCTCAGCATTAGCCCAGCCTGTGACCACCGTCCCTCCATGGGAGAGACCGAGAGAAAGATAACATCT
513▶ L Q Y K T P P P S Y N S A L A Q P V T T V P S M G E T E R K I T S
2201 CTATCCTCCTCTTGGATACCTCCTTGGACTTCTCAAAGAAAACAAGAAAAAGGAGAGGATCTAGTTGGCAGCTTAAACGGAGGCCACGCAATGTGC
547▶ L S S S L D T S L D F S K E N K K K G E D L V G S L N G G H A N V
2301 ACCTAGCAAGAACAAGGAGAAGCCCTCTCCGGGACCGGCCACAGTCAATGGCACTCTCTACCCAGCGAGCAGGCCGGGTCCGCCAGTGTCCAGCT
580▶ H P S Q E Q G E A L S G H R A T V N G T L L P S E Q A G S A S V Q L
Bsu36I (2492)
2401 TCCAGCGAGTCCACCCAGTCTCAGAAGCTGAGCTCTGCTGTACTGTGGAGCAAGCAGAAGAAATCATCGGGCTGGAAGCCACAGTTCGCGCTCAGGT
613▶ P G E F H P V S E A E L C C T V E Q A E E I I G L E A T G F A S G
2501 GATCAGCTAGAAGCATTAACTGCATCCAGTGCAGTGCTGTGGCAGTGTGACGACGATGTGACGAAACAAGTCTGGGAGAATTTGAAGATTTCCCGAAGGA
647▶ D Q L E A F N C I P V D S A V A V E C D E Q V L G E F E F S R R
NgoMIV (2633) NaeI (2633)
2601 TCTATGCACTGAATGAAAACGTATCCAGCTTCCGCGGCCGCGCAGGAGTTCCGATAAGTGAAGTGTGACAGGTC AACAGTAGGACTGGGGCAGAAGCTAG
680▶ I Y A L N E N V S S F R R P R R S S D K •
NheI (2695)

MscI (2701)
2701 CTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT

HpaI (2833) MfeI (2844)
2801 TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAAACAACATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTTAA

EcoRI (2929)
2901 GCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGG
3001 ATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTCAGCCTCACCTCTTTTCATGGAGTTAAGATATAGTGATTTTCCAA

SspI (3168) SmaI (3182)
3101 GGTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGC
3201 AATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTT
3301 TAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTCCAT

BstXI (3472)
3401 TCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATC
120 M E I L V F 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
3501 AGAGTAGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCCTG
87 S Y P H R V 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

StuI (3607)
3601 CCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCACAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTGTCCTCATAGAGCATGGTGA
53 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 K N D E Y L M T I

BspHI (3757)
3701 TCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGA
20 K E T A V E V L E L D Q Q S I N F T K M

AseI (3815)
3801 TATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCCACCG

SpeI (3970)
3901 TACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTACTAGTCAAAACAAACTCCCATTGACGTC

SnaBI
4000 AATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAAT

4100 ACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTAC

NdeI (4203)
4200 TTGGCATATGATACACTTGATGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGG

SdaI (4381) PacI (4389)
4300 AACATACGTCATTATTGACGTCAATGGCGGGGGTCTGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAAAGCTTGCAGGTTAAATTA

BspLU11I (4399)
4398 GAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAGGCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAA
4498 AATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGCGCTCTCTGTCCGACCC
4598 TGCCGCTTACCGGATACCTGTCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCG
4698 CTCCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTA
4798 TCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGTACACTA
4898 GAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCACCGCTGGTAGCGG
4998 TGGTTTTTTGTTTGAAGCAGCAGATTACGCGGAGAAAAAAGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAA

PacI (5129) SmaI (5138) NotI (5148)
5098 AACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTT
5198 TTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAACGAAACAAACAACTAGCAAAATAGGCTGTCCCGAGTCAAGTGCAGGTGCCAGA
5298 ACATTTCTCTATCGAA