



PvuI (7)
SgfI (6) 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCCGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCGCCCTACCTGAGGCC
PvuII (239)
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCCGCTTAGGTAAGTTTAAAGCTCAGGTCGAGACC
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

MluI (558)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGCACGCGTCACCATGGCAGCCTCAGGGTGGGGCCGGGGATGCGA
601 CATCTCATCTTCTACAGCCAGATGCGGAGGAATGGTGTACCTACAGGATCTTTTCGTGTCCTGCCGCGAGGTTTCGTAGCCAGAAGACGCAGACA
11▶ I L I F Y S P D A E E W C Q Y L Q D L F V S C R Q V R S Q K T Q T
701 TACCGGCTGGTCCCGGATGCCTCTTCTCTGCCAGGACCTGTGGGTCTCAGGGATGCGCGATGCGTGTGGTGTACTGTGCGGGGGCTGGTAGGAT
45▶ Y R L V P D A S F S A Q D L W V F R D A R C V L V L L S A G L V G
801 GCTTCGGCCAGCCAGGACTGCTCCAATGCTGCAGCGTGCCTGCCATCCGCCGAGCGTGTGGTGGCGCTGTTGTGTGGAGTGCAGCCAGGCGACGAGGA
78▶ C F G Q P G L L P M L Q R A C H P P Q R V V R L L C G V Q P G D E D
Bsp120I (923)
901 CTCCAGGCCCTTCTTCTGACTGGGCCACTGGCAGGAAATGACTTGTGATGATGAGCCAGAGACCTACCTGGCGGTGTGAGGAAGGCCATTTCTGAA
111▶ F Q A F F P D W A H W Q E M T C D D E P E T Y L A A V R K A I S E

EcoRV (1086)
BspEI (1080)
1001 GATTCTGGCTGTGACTCAGTAACCGACACGGAGCCCGAGGACGAGAGAGAGCTTCTTTCTCAAAGCAGACAAACCTGCCTCCGGAGATATCGCCTGGGA
145▶ D S G C D S V T D T E P E D E R E L P F S K Q T N L P P E I S P G

RsrII (1118)
1101 ACCTGATGGTGTACAGCCGACCGCATTTCGCTGTGGGGCAGAAACACTGTGTATATCATTGTGAGATGCAAGCTGGACGAGAAGGTATCAACAGAAGC
178▶ N L M V V Q P D R I R C G A E T T V Y I I V R C K L D E K V S T E A
1201 AGAGTTCTCTCCTGAGGATTCTCCCTCCATCCGGGTGGAAGGCACACTGGAGAATGAGTACACGGTCTCTGTGAAAGCACCAGACCTCTCCTCGGGGAT
211▶ E F S P E D S P S I R V E G T L E N E Y T V S V K A P D L S S G N
1301 GTTCTCTGAAGGTCTATTCTGGGGACCTGGTGGTCTGCGAAACCACCGTCACTATTATACCGACATGGAGGAAATTGGAACTTACTGTGAGTGTG
245▶ V S L K V Y S G D L V V C E T T V S Y Y T D M E E I G N L L S S A
1401 CAAATCCTGTGGAGTTTATGTGTGAGGCTTTAAAATCGTCCCTACAACACAGAGACTCTGATAAACTGCTCACCAGTCCCTGAAGAACAACATCCC
278▶ A N P V E F M C Q A F K I V P Y N T E T L D K L L T E S L K N N I P

SapI (1570)
1501 CGCAAGTGGACTGCACCTCTTTGGGATCAACCAACTGGAAGAAGACGATATGATGACAAATCAGAGGGACGAAGAGCTGCCACGCTGTTGCATTTTGT
311▶ A S G L H L F G I N Q L E E D D M M T N Q R D E E L P T L L H F A
1601 GCCAAGTATGGACTGAAGAACCTCACTGCCTTGTCTGCTCACCTGTCCAGGGGCTCTCCAGGCTACAGTGTAGCCAACAAGCAGGCCACTATCCCAACA
345▶ A K Y G L K N L T A L L L T C P G A L Q A Y S V A N K H G H Y P N
1701 CCATTGCCGAGAAACAGGCTTCAGGGACCTGCCAGTTTCATCGAGTATGTGGAGCGGTGGACATGCTGAAGACACACATTAAGGAGGTTGAT
378▶ T I A E K H G F R D L R Q F I D E Y V E T V D M L K T H I K E E L M
1801 GCAAGGGGAGGAGCGGACGATGTGTACGAGTCCATGGCCACCTATCCACAGACCTGCTGATGAAGTGTCCCTCAACCCTGGTGTGACGATGAGCTC
411▶ Q G E E A D D V Y E S M A H L S T D L L M K C S L N P G C D D E L

XmnI (1951) **BstEII (1972)**
1901 TACGAGTCCATGGCTGCCTTCGCCCCAGCAGCCACAGAAGACCTCTATGTTGAAATGCTTCAGGCCAGTGCAGGTAACCCAGTCTCGGGAGAAAGTTTCT
445▶ Y E S M A A F A P A A T E D L Y V E M L Q A S A G N P V S G E S F

XbaI (2034)
2001 CTCGGCCCACTAAAGACTCGATGATCCGCAAGTTTCTAGAAGGTAACAGTGTGAAACCGGCCAGTTGGGAGAGAGAACAACACCATCCCTATGGGGAGGA
478▶ S R P T K D S M I R K F L E G N S V K P A S W E R E Q H H P Y G E E

DraIII (2107) **Eco47III (2185)**
2101 ACTTTATCACATTGTGGATGAAGATGAGACCTTCTCTGTGGACCTAGCCAACAGGCCCCCTGTCCCTGTGCCAGGCCAGAGGCCAGCGCTCCTGGCCCT
511▶ L Y H I V D E D E T F S V D L A N R P P V P V P R P E A S A P G P

BsrBI (2257)
2201 CCCCACCGCCTGACAATGAGCCATACATTTCTAAAGTTTTGCGAAGAAAGTCAAGGAGCGGCTCGGGAATTTCTACGTTTCTTCTGAGAGCATCAGAA
545▶ P P P P D N E P Y I S K V F A E K S Q E R L G N F Y V S S E S I R

XmaI (2373) **SdaI (2397)**
2301 AAGAGCCACTTGTGAGGCCATGGAGGGACAGGCCGCTCAGCATCTACGACCCATTTGCTGGGATGAAGACCCCGGCCAGCGGACGCTCATCACCT
578▶ K E P L V R P W R D R P P S S I Y D P F A G M K T P G Q R Q L I T L
2401 GCAGGACAGGTGAAGCTGGGCATCGTCAACGTGGACGAGGCCGCTGCTGCAATTTCAAAGAGTGGCAACTCAATCAGAAGAAGCGATCCGAGTCTTCCGC
611▶ Q E Q A K L G I V N V D E A V L H F K E W Q L N Q K K R S E S F R
2501 TTCCAGCAGGAAAATCTTAAAGACTAAGAGAGAGCATCACCCGAAAGAGAAAGGAAAGTCTGGGAAGCAGACAGACCTGGAGATCACAGTCC
645▶ F Q Q E N L K R L R E S I T R R R K E K P K S G K H T D L E I T V

F Q Q E N L K R L R E S I T R R R K E K P K S G K H T D L E I T V
BsrBI (2652)
2601 CAATCCGACATTCACAGCACCTGCCAGAGAAAGTGGAGTTTGGTGTATGAGAGCGGCCCCAGGAAGAGTGTCTTGCCGGCCAGGACAGAGCTGAGACG
678▶ P I R H S Q H L P E K V E F G V Y E S G P R K S V L P A R T E L R R
AgeI (2750)
2701 TGGGGACTGAAAAACGGACAGCATGTCCAGCACAGCAAGCAGCACAGTAACCGTCCGAGCACACGGAGCCTCCTCAGTGTGAGCAGTGAATGGAGGGC
711▶ G D W K T D S M S S T A S S T S N R S S T R S L L S V S S G M E G
SandI (2899)
2801 GACAACGAGGACAACGAAATCCCCGAAATTACCCGGAGTCGTGGCCAGGTCCTACGCAGGTGGACGGAGCTCCTCCAGTTGTGACIGGAACACCACTGCG
745▶ D N E D N E I P E I T R S R G P G P T Q V D G A P P V V T G T P V
AvrII (2917) XhoI (2930) XmaI (2957)
2901 GGACCCTTGAGAGACCCCTAGGGTGCCTCCTCAGAGCGCTTCTCAGAGCGCTTAACCCGGAGTCCCTCCATCCTCCTCCGCCGGTCCACCCAGAGG
778▶ G T L E R P P R V P P R A A S Q R P L T R E S F H P P P P V P P R G
MscI (3031)
NheI (3025)
3001 TCGCTGATCCCGCTCCTATATCTGGCTAGTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGC
811▶ R •
HpaI (3163) MfeI (3174)
3101 TTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTTCATTTATGTTTCAGG
EcoRI (3259)
3201 TTCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACCTCCAAT
3301 CAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCTTCTTTCA
SapI (3441) SspI (3498)
3401 TGGAGTTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACTGCTTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAA
Swal (3512)
3501 TATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTA
3601 GTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTT
141▶ • N R T Y K L P I L E
3701 CCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCT
130▶ 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
3801 GACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAAATG
97▶ V 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
3901 GCAATGGCTTCCAGCACAGACAGTACCCTGCCAATGTAGGCCCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACAT
63▶ 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 K T R I A A G V H
XmnI (4079)
4001 GGTGCTTGTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCT
30▶ 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 (4145)
4101 CCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAA
4201 ACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATT
SpeI (4300)
4301 ACTAGTCAAAACAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACC
SnaBI (4428)
4401 GCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCACTGTACTGGGCATAATGCCAGGCGGGCCATT
NdeI (4533)
4501 ACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACTTGTACTGCAAGTGGGCGAGTTTACCGTAAATACTCCACCATTGACGTCAA
4601 TGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTACCGTAA
SdaI (4711)PacI (4719) BspLU11I (4729)
4701 GTTATGTAACGCCTGCAGGTTAATAAGAACATGTGAGCAAAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGG
4801 CTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTCCCCCTGGAAGCT
4901 CCTCGTGCCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAG
ApaLI (5043)
5001 GTATCTCAGTTCCGGTGTAGTTCGTTCCAAAGTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGTGCCTTATCCGGTAACTATCGTCTT
5101 GAGTCAAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGA

5201 AGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATC

5301 CGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCT

5401 ACGGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTT

5501 ATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCT

5601 GTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA

EagI (5479)

PacI (5459) SwaI (5468) **NotI (5478)**