



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

HindIII (245) Bsu36I (291)  
201 Psp1406I (203) PvuII (239) EcoNI (287)  
GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGTGGCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) BsrGI (563) Bsp120I  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTCAACATGTACAACATGATGGAGACGGAGCTGAAGCCGCGGG  
1 M Y N M E T E L K P P G

Tth111I (676) RsrII (674) XmnI (696)  
601 SacII (638) CCGCAGCAAACCTTCGGGGGGCGGGCGGCAACTCCACCGCGCGGGCGGGCGGCAACCAGAAAAACAGCCCGGACCGCTCAAGCGGCCATGAAT  
13 P Q Q T S G G G G N S T A A A G G N Q K N S P D R V K R P M N  
701 SacII (717) GCCTTCATGGTGTGGTCCCGCGGCGAGCGGCGCAAGATGGCCAGGAGAACCCCAAGATGCACAACCTCGGAGATCAGCAAGCGCTGGCGCCGAGTGA  
47 A F M V W S R G Q R R K M A Q E N P K M H N S E I S K R L G A E W  
801 Eco47III (855) AACTTTTGTGCGAGACGGAGAAGCGCCGTTTCATCGACGAGGCTAAGCGGCTGCGAGCGTGCACATGAAGGAGCACCCGATTATAAATACCGCCCGG  
80 K L L S E T E K R P F I D E A K R L R A L H M K E H P D Y K Y R P R  
901 BspHI (917) GCGAAAAACAAGACGCTCATGAAGAAGATAAGTACACGCTGCCCGCGGGCTGCTGGCCCCGGCGCAATAGCATGGCGAGCGGGGTGCGGGTGGGC  
113 R K T K T L M K K D K Y T L P G G L L A P G G N S M A S G V G V G  
1001 PvuII (1090) GCCGGCTGGGCGGGCGTGAACCAGCGCATGGACAGTTACGCGCATGAACGGCTGGAGCAACGGCAGCTACAGCATGATGCAGGACCAGCTGGGCT  
147 A G L G A G V N Q R M D S Y A H M N G W S N G S Y S M M Q D Q L G  
1101 XmaI (1110) FspI (1122) BstAPI (1143) PstI (1174) ACCCGCAGCACCCGGGCTCAATGCGCACGGCGCAGATGCAGCCATGCAACCGCTACGACGTGAGCGCCTGCAGTACAACCTCATGACCAGCTC  
180 Y P Q H P G L N A H G A A Q M Q P M H R Y D V S A L Q Y N S M T S S  
1201 NcoI (1277) XcmI (1277) GCAGACCTACATGAACGGCTCGCCACCTACAGCATGTCTACTCGCAGCAGGCGACCCCTGGCATGGCTCTTGGCTCCATGGTTCGGTGGTCAAGTCC  
213 Q T Y M N G S P T Y S M S Y S Q Q G T P G M A L G S M G S V V K S  
1301 XcmI (1310) BstEII (1323) EcoO109I (1364) GAGGCCAGCTCCAGCCCCCTGTGGTTACTCTTCTCCCACTCCAGGGCGCCCTGCCAGGCGGGGACCTCCGGGACATGATCAGCATGTATCTCCCCG  
247 E A S S S P P V V T S S S H S R A P C Q A G D L R D M I S M Y L P  
1401 BsrBI (1458) GCGCCGAGGTGCCGAACCCGCCCGCCAGCAGACTTACATGTCCAGCACTACCAGAGCGGCCCGGTGCCGGCACGGCCATTAACGGCACACTGCC  
280 G A E V P E P A A P S R L H M S Q H Y Q S G P V P G T A I N G T L P  
1501 MscI (1545) NheI (1539) CCTCTCACACATGTGAGGGCCGACAGCGAACTGGAGGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGC  
313 L S H M •

HpaI (1677) MfeI (1688)  
1601 AGTAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAAATTGCATTCA  
1701 EcoRI (1773) TTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAAC  
1801 TTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGC  
1901 CTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGTTTGAAGTACTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTC

SspI (2012) SmaI (2026) EcoO109I (2087)  
2001 CCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAA  
2101 TATCCCCAGTTTAGTAGTTGACTTAGGGAACAAAGGAACCTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTT  
141 • N R T Y K  
2201 SacI (2287) GAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCGCAC  
135 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 L E R C  
2301 BstXI (2316) ATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCA  
101 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 Q G N S V  
2401 StuI (2451) CAGCAGCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGAT  
68 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 K T R I

BbsI (2597)

XmnI (2593)

2501 GGCCGCCCCGACATGGTGTCTTGTGTCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTC

35 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 I N F T

BspHI (2601)

AseI (2659)

2601 TTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCGCATATACTATGCGCATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATC

1 K M

SacI (2716)

2701 TGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTCGCTCAATGGGGCGGAGTTGTACGACATTTTGAA

SpeI (2814)

2801 AGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGAT

SnaBI (2942)

2901 GTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGC

NdeI (3047)

3001 CAGGCGGGCATTACCCTCATTGACGTCAATAGGGGCGTACTTGCCATATGATACACTTGTACTGCCAAGTGGGCAGTTACCCTAAATACTCCA

3101 CCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTACGCCAGGCGG

PacI (3233)

PstI (3226)

SdaI (3225)

3201 GCCATTTACCCTAAGTTATGTAACGCTGCAGGTTAATTAAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGG

3301 CGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTT

3401 TCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAT

ApaLI (3557)

3501 AGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTACGCCGACCCTGCGCCTTATCCG

3601 GTAACATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGC

3701 TACAGAGTCTTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAGAGGTT

3801 GGTAGCTCTTGATCCGGCAAACAACACCGCTGGTAGCGGTGTTTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATC

PacI (3973) SwaI (3982) NotI (3992)

3901 CTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGC

4001 AATAAAATATCTTTATTTTACATTACATCTGTGTGTTGGTTTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAAAACAAAACGAAAACAAAACAAAC

4101 TAGAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA