



PvuI (7) SgfI (6) MfeI (82)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCGCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

AgeI (552) BspLUIII (568) SapI (581)
501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGTAGGAGGGCCAAACATGTCCAAGTGTCTTCCCTGTCACTTGCC
1 M S K L L F L S L A

BsrBI (611)
601 CTCTGGGCGAGCCGCTCCCTGGTTACTACTGAAACAGCTCTCGTGGCTCTAAGCCAGCCAGAGTGAATGCCATGCTTCTCGGTATCCCGTGGCCGTGG
11 L W A S R S P G Y T E T A L V A L S Q P R V Q C H A S R Y P V A V
701 ACTGCTCCTGGACTCCTCTCAGGCTCCCAACTCCACCAGATCCACGCTCTTCTATTGCCACTTACAGGCTCGGTGGCCACCCAGCAGCAGAGCCAGCC
44 D C S W T P L Q A P N S T R S T S F I A T Y R L G V A T Q Q Q S Q P

StuI (820)
801 CTGCCTACAACGGAGCCCCAGGCTCCCGATGCACCATCCCCGACGTGCACCTGTTCTCCACGGTGCCTACATGCTAAATGTCACTGCAGTGCACCCA
77 C L Q R S P Q A S R C T I P D V H L F S T V P Y M L N V T A V H P

BspEI (959) FspI (976) SdaI (995)
901 GGGGCGCCAGCAGCAGCCTCCTAGCCTTTGTGGTGTGAGCAATCATCAAGCCGACCTCCGGAAGGCGTGGCCTGCGCACAGCGGGACAGCGCCTGC
111 G G A S S S L L A F V A E R I I K P D P P E G V R L R T A G Q R L
1001 AGGTGCTCTGGACTCCCCCTGCTTCTGGCCCTCCCGGACATCTTCTCTCAAGTACCGACTCCGCTACCGGCGCCGAGGAGCCTCTCACTCCGCCA
144 Q V L W H P P A S W P F P D I F S L K Y R L R Y R R R G A S H F R Q

SandI (1103) Bsu36I (1130)
1101 GGTGGGACCCATTGAAGCCACGACTTTACCCTCAGGAACTCGAAACCCATGCAAGTATTGCATCCAGGTGTGAGCTCAGGACCTCACAGATTATGGG
177 V G P I E A T T F T L R N S K P H A K Y C I Q V S A Q D L T D Y G

BstXI (1203) Acc65I (1268) AgeI (1292)
1201 AAACCAAGTGACTGGAGCCTCCCTGGGCAAGTAGAAAGTGACCCCATAGCCCGTTCTCTGGAGTAGGGTACCTGGAGTGGGAGGTCATACCGGTCT
211 K P S D W S L P G Q V E S A P H K P V P G V G V P G V G R V I P V

XcmI (1345)
1301 CTGGACCTGCCAGGTGTCTTAGCCAGTCCCGAAACCTGCTGAAGACCACAGATGACATGGTGAAGACGGCCAGAGAAAAGCTGAAACATTATTCCTGCAC
6 S G P A R C L S Q S R N L L K T T D D M V K T A R E K L K H Y S C T

BspHI [m] (1413) ClaI (1410)
1401 TGCTGAAGACATCGATCATGAAGACATCACACGGGACCAACAGCAGCATTGAAGACCTGTTTACCAGTGAAGTACACAAGAACGAGAGTTGCCTGGCT
39 A E D I D H E D I T R D Q T S T L K T C L P L E L H K N E S C L A
1501 ACTAGAGAGACTTCTTCCACAACAAGAGGGAGTGCCTGCCCCACAGAAGACGTCTTTGATGATGACCTGTGCCTTGGTAGCATCTATGAGGACTTGA
73 T R E T S S T T R G S C L P P Q K T S L M M T L C L G S I Y E D L

XbaI (1667) SphI (1678) ClaI (1692)
1601 AGATGTACCAGACAGAGTTCAGGCCATCAACGCAGCACTTCAAGATCACAACCATCAGCAGATCATTCTAGACAAGGCGTGGTGGCCATCGATGA
106 K M Y Q T E F Q A I N A A L Q N H N H Q Q I I L D K G M L V A I D E
1701 GCTGATGCAGTCTCTGAATCATAATGGCGAGACTCTGCCAGAAACCTCTGTGGGAGAAGCAGACCTTACAGAGTGAAGTGAAGCTCTGCATCCTG
139 L M Q S L N H N G E T L R Q K P P V G E A D P Y R V K M K L C I L

NheI (1867)
1801 CTTACGCCCTTACGACCCGCTGTCGACCATCAACAGGGTGTGGGCTATCTGAGCTCCGCCTAAAGCTAGCTGGCCAGACATGATAAGATACATTGAT
173 L H A F S T R V V T I N R V M G Y L S S A •
1901 GAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATA

HpaI (2005) MfeI (2016)
2001 AACCAAGTTAAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTAT

EcoRI (2101)
2101 GGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTG

SapI (2283)
2201 TTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACTCTTCACTTTTAT

SspI (2340) SmaI (2354)
2301 GTTTTAAATGCACTGACCTCCACATTCCTTTTATGATAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCA
2401 GAATCCAGATGCTCAAGGCCCTTACATAATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGA
2501 GCTTCTAGCTTTAGTTCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGG
141 • N R T Y K L P I L E E I T T K V L K G N M E I L V F C D P

BstXI (2644)
2601 AGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGTGATGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATG
111 A Y D S I L E R C M G C P S V V R I S R D V E D S Y P H R V A V I

2701 GTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCCTCAATGTGGACAGCAG
77 T D F D K Q G N S V A S G I A I A E A C V T V R G I Y A E I H V A S
2801 AGATGATCTCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTC
44 I I E G T K T R I A A G V H H K N D E Y L M T I K E T A V E V L E
XmnI (2921) AseI (2987)
2901 CAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAA
11 L D Q Q S I N F T K M
3001 ACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAAT
SpeI (3142)
3101 GGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTG
SnaBI (3270)
3201 AGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTC
NdeI (3375)
3301 CCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCC
3401 AAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGC
SdaI (3553) PacI (3561) BspLU11I (3571)
3501 GGGGGTCTGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGTTAAITTAAGAACATGTGAGCAAAAAGGCCAGAAAAGGCC
3601 AGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAATAATCGACGCTCAAGTCAGAGGTGGCGAAACC
3701 CGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCCTTTCT
3801 CCCTTCGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCAAGTGGGCTGTGTGCACGAACCCCC
3901 GTTCAGCCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGA
4001 TTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCT
4101 GAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGCAAGCAGCAGATTACG
4201 CGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTA
EagI (4321)
PacI (4301) SmaI (4310) NotI (4320)
4301 GTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTC
4401 CATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA