



100

PvuI (7) SgfI (6) MfeI (82) EcoNI (96)
 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
 101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) HindIII (245) Bsu36I (291) EcoNI (287)
 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCCGCCGCCCTACCTGAGGCC
 301 GCCATCCACGCCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) NaeI (441)
 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGTCTTTGTTTCGTTT

KasI (535) AgeI (552) BspLU11I (568) SandI (577)
 501 TCTGTTTGTCCGCCGTTACAGATCCAAGCTGTGACCGGCCCTACCTGAGATCACCGGTAGGAGGGCCAACATGTCCCGGACCCGGGGTGGGCGGCTGG
 1▶ M S R D P G S G G W
 SdaI (668)

601 GAGGAGGCCCGCGCGCAGCTGCCGCGCTGTGCACCCTGTACCACGAGGCCGGACAGCGGCTGCGCGCCTGCAGGACCAGCTCGTGCCTCCGCGACGCC
 11▶ E E A P R A A A L C T L Y H E A G Q R L R R L Q D Q L A A R D A
 701 TCATCGCTCGCCTCCGCGCCCGCTGGCGCGCTGGAGGGGACGCCCGCCCTAGTGGACGCGTGTGGAGCAGGTTGCGCGCTTCCGGGAGCA
 44▶ L I A R L R A R L A A L E G D A A P S L V D A L L E Q V A R F R E Q

KasI (819) SrfI (975)
 801 GCTGCGAAGGCAGGAGGGCGCGCCGAGAGCCAGATGCGCCAGGAAATTGAGAGGCTGACTGAGCGACTAGAAGAAAAGAGAGGGAGATGCAGCAG
 77▶ L R R Q E G G A A E A Q M R Q E I E R L T E R L E E K E R E M Q Q

BsrBI (1001) BspLU11I (1057) SphI (1097)
 1001 GCCGCTCCTTGGCCAACGAGACCCATCAGCTGCGGAGGACGCTGACCGCCACCGCCACATGTGTGAGCATCTGGCCAAGTGTCTGGATGAACGACAGCA
 144▶ C R S L A N E T H Q L R R T L T A T A H M C Q H L A K C L D E R Q H
 1101 TGCACAAAGGAATGTGGGGAGAGAAGTCTGACCAGTCGGAACACAGATGGGCACACCTCTGTCCAGAGTGTATTGAGAAGTTGCAGGAAGAAAAT
 177▶ A Q R N V G E R S P D Q S E H T D G H T S V Q S V I E K L Q E E N

Eco47III (1252) FspI (1295)
 1201 CGACTGTTAAAACAGAAGGTGACTCACGTTGAAGACCTCAATGCCAAGTGGCAGCGCTACAACGCCAGCAGGGACGAATACGTGAGGGGGCTCCATGCGC
 211▶ R L L K Q K V T H V E D L N A K W Q R Y N A S R D E Y V R G L H A

BglIII (1348) BsrBI (1449)
 1301 AGCTCAGGGGCTGCAGATCCCCACGAGCCGAGCTGATGAGGAAGGAGATCTCCCGCTCAACAGACAGTTGGAAGAGAAAATAAATGACTGTGCCGA
 244▶ Q L R G L Q I P H E P E L M R K E I S R L N R Q L E E K I N D C A E

BsrBI (1449) PvuI (1514) DraIII (1575)
 1401 AGTGAAGCAGGAGCTGGCGCCTCCAGGACGGCCGGGATGCTGCGTTGGAGCGGTTGCAGATGCTGGAACAGCAGATTCTCGCTTACAAGGATGACTTC
 277▶ V K Q E L A A S R T A R D A A L E R V Q M L E Q Q I L A Y K D D F

PvuI (1514) EagI (1616) NgoMIV (1614) NaeI (1614) StuI (1695) Eco147I (1695)
 1501 ATGTCAGAAAGGGCCGATCGGGAACGGGCTCAAAGTAGGATTCAAGAACTGGAGGAAAAGGTCGCTCTTTGCTGCACCAGGTGTCTGGAGACAGGATT
 311▶ M S E R A D R E R A Q S R I Q E L E E K V A S L L H Q V S W R Q D

XhoI (1600) NaeI (1614) StuI (1695) Eco147I (1695)
 1601 CTCGAGAGCCAGACGCCGCGGATTACGCTGGGAGCAAACTGCCAAGTATTTGGCCGCCGACGCATTAGAGCTTATGGTGCCTGGTGGCTGGAGGCC
 344▶ S R E P D A G R I H A G S K T A K Y L A A D A L E L M V P G G W R P

SandI (1707) Tth111I (1703)
 1701 TGGGACTGGTCCCAGCAGCCAGAACCCTGCAGAGGGCGGGCATCCTGGCGGGCCAGAGAGGCCAGGGGACCTCAGTGCCTCACTGCCTGCAG
 377▶ G T G S Q Q P E P P A E G G H P G A A Q R G Q G D L Q C P H C L Q

Bsu36I (1829) NheI (1881)
 1801 TGCTTCAGTGACGAGCAAGGGGAAGAGCTCCTCAGGCATGTGGCTGAGTGTGCCAGTGACCGAGACTCACCCGTGCCCTTGCTAGCTGGCCAGACATGA
 411▶ C F S D E Q G E E L L R H V A E C C Q •

1901 TAAGATACATTGATGAGTTTGGCAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCAT

HpaI (2019) MfeI (2030)
 2001 TATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCTTTATGTTTCAGGTTGAGGGGAGGTGGGAGGTTTTTAAAGCAAGTAAACCTC

EcoRI (2115)
 2101 TACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTGAACTCTTTCTGAGGGATGAATAAGGCATA

2201 GGCATCAGGGGCTTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATAGTGATTTTCCCAAGGTTTGAAGTAGCT

SspI (2354) SwaI (2368)
 2301 CTTCAATTTCTTTATGTTTAAATGCACTGACCTCCACATTCCCTTTTAGTAAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAAATAAATG

2401 TTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTAAATAGAAATTGGA

2501 CAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGC
 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
 2601 ACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCC
 115 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 S Y P H R
 StuI (2793)
 Eco147I (2793)
 2701 TGACAGCCACAATGGTGTCAAAGTCTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTC
 82 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 G I Y A E
 2801 AATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCG
 49 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 K E T A
 BspHI (2943)
 XmnI (2935)
 2901 ACCTCCACAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGAT
 15 V E V L E L D Q Q S I N F T K M
 VspI (3001)
 AseI (3001)
 3001 GATTAATTGTCAAAACACGCTGGATGGCGTCTCCAGCTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGC
 SpeI (3156)
 3101 CCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCAATGGGGTGGAGAC
 SnaBI (3284)
 Eco105I (3284)
 3200 TTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGTAATAGCGATGACTAATACGTAGATGTACTG
 NdeI (3389)
 3300 CCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATAC
 3400 ACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTA
 SdaI (3567) PacI (3575) BspLU11I (3585)
 3500 TTGACGTCAATGGGGCGGGGTCGTTGGGGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCCTGCAGGTTAATTAAGAACATGTGAGCAA
 3598 AAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAG
 3698 TCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGCGTTTTCCCCTGGAAAGTCCCTCGTGCCTCTCTGTTCGACCCTGCCGCTTACCGGA
 3798 TACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCT
 ApaLI (3899)
 3898 GTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAAGACACGACTTATCGCCACTGGCAGC
 3998 AGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTT
 4098 GGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCACCGCTGGTAGCGGTGGTTTTTTTGT
 4198 GCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGG
 EagI (4335)
 PacI (4315) SwaI (4324) NotI (4334)
 4298 GATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAATATCTTTATTTTTCATTACATCTGTGTGGTGGTTTTTTGTGTAATCGT
 4398 AACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCG
 4498 AA