



PvuI (7)
 SgfI (6)
 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
 101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
 Psp1406I (203) PvuII (239) Bsu36I (291)
 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGGCC
 301 GCCATCCACGCGGTTGAGTGCCTGTTGCGCCCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
 NaeI (441)
 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

NcoI (560)
 XcmI (560)
 BstEII (555) KasI (535) AgeI (552) PvuII (568) EagI (590)
 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCCTACTCTGAGATCACCGGTCACCATGGCGCAGCTGGAAGGTTACTATTTCTCGCCGCGCTT
 1 M A Q L E G Y Y F S A A L

Eco47III
 BglIII (674) Bsu36I (688) AfeI (698)
 601 GAGCTGTACCTTTTTAGTATCCTGCCTCCTCTTCTCCGCTTTCAGCCGGGCGTTGCGAGAGCCCTACATGGACGAGACTTCCACCTGCCTCAGCGCGCAG
 13 S C T F L V S C L L F S A F S R A L R E P Y M D E I F H L P Q A Q

BamHI (735)
 701 CGCTACTGTGAGGGCCATTTCTCCCTTCCAGTGGGATCCCATGATTACTACATTACCTGGCTGTACCTGGTGTCAATTGGAGTGATCAAACCTGCCA
 47 R Y C E G H F S L S Q W D P M I T T L P G L Y L V S I G V I K P A

BspLU11I (822)
 801 TTTGGATCTTTGGATGGTCTGAACATGTTGTCTGCTCCATTGGGATGCTCAGATTTGTAATCTTCTCTTCAGTGTGGCAACTTCTATTTACTATATTT
 80 I W I F G W S E H V V C S I G M L R F V N L L F S V G N F Y L L Y L
 901 GCTTTTCTGCAAGGTACAACCCAGAAACAAGGCTGCCTCAAGTATCCAGAGAGTCTGTCAACATTAACACTAGCAGTATTTCCAACACTTTATTTTTTT
 113 L F C K V Q P R N K A A S S I Q R V L S T L T L A V F P T L Y F F
 1001 AACTTCCTTTATTATACAGAAGCAGGATCTATGTTTTTACTCTTTTTGCGTATTTGATGTGCTTTATGAAATCATAAAATTCAGCCTTCCCTGGAT
 147 N F L Y Y T E A G S M F F T L F A Y L M C L Y G N H K T S A F L G

HpaI (1173)
 1101 TTTGTGGCTTCATGTTTCGGCAACAAATATCATCTGGGCTGTCTTCTGTGCAGGAAATGTCATTGCACAAAAGTTAACGGAGGCTTGGAAAACCTGAGCT
 180 F C G F M F R Q T N I I W A V F C A G N V I A Q K L T E A W K T E L
 1201 ACAAAGAAGGAAGACAGACTTCCACCTATTAAGGACCATTGTCAGAATTCAGAAAATTTCTCAGTTTCTTTGGCTTATTCATGTCCTTTAAAAAC
 213 Q K K E D R L P P I K G P F A E F R K I L Q F L L A Y S M S F K N

PvuI (1392)
 1301 TTGAGTATGCTTTTCTGCTGACTTGGCCCTACATCCTTCTGGGATTTCTGTTTTGTGCTTTTGTAGTAGTAAATGGTGAATTGTTATTGGCGATCGGA
 247 L S M L L L L T W P Y I L L G F L F C A F V V V N G G I V I G D R

BspHI (1404)
 1401 GTAGTCATGAAGCCTGTCTTCATTTTCCCTCAACTATTCTACTTTTTTCACTTACTCTTTTTTCTTTTCCCTCATCTCCTGTCTCCTAGCAAAAATTA
 280 S S H E A C L H F P Q L F Y F F S F T L F F S F P H L L S P S K I K

BstEII (1545)
 1501 GACTTTTCTTTCTTAGTTTGGAAACGTAGAATTCTGTTTTTGTGGTTACCTTAGTCTCTGTGTTTTAGTTTGGAAATTCACCTATGCTCATAAATAC
 313 T F L S L V W K R R I L F F V V T L V S V F L V W K F T Y A H K Y

NheI (1602) SspI (1670)
 1601 TTGCTAGCAGACAATAGACATTATACTTTCTATGTGTGAAAAGAGTTTTTCAAGATATGAAACTGTAATAATTTGTTAGTCCAGCCTATATATTTG
 347 L L A D N R H Y T F Y V W K R V F Q R Y E T V K Y L L V P A Y I F

NdeI (1761)
 1701 CTGTTGGAGTATAGCTGACTCATTGAAATCAAAGTCAATTTTTGGAATTTAATGTTTTTCATATGCTTGTCTACTGTTATAGTTTCCCTCAGAAAACCTGC
 380 A G W S I A D S L K S K S I F W N L M F F I C L F T V I V P Q K L L
 1801 GGAATTTGTTACTTTCATTTTACCTTATGTCAATTAAGGCTTAACATACCTGCCTCCACATCCAGACTCATTGTGAACTGAGCTGATGATGAGCTT
 413 E F R Y F I L P Y V I Y R L N I P L P P T S R L I C E L S C Y A V

MscI (1945) BstBI (1996)
 1901 GTTAATTTCATAACTTTTTCTCATCTTTCTGAACAAGACTTTTTCAGTGGCCAAATAGTCAGGACATTCAAAGGTTTATGTGGTAATATCAGTGATATTTTCG
 447 V N F I T F F I F L N K T F Q W P N S Q D I Q R F M W •

AvrII (2015) MscI (2027)
 2001 AACGTGAAAATGGACCTAGGACTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTA

HpaI (2159)
 2101 TTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGTTCA
 2201 GGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAG
 2301 CCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTTTCATGGA

SspI (2494)
 2401 GTTTAAGATATAGTGATTTTTCCCAAGGTTGAACTAGCTCTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTATGAAAAATTT

SwaI (2508) EcoO109I (2569)
 2501 CAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCCAGTTTAGTAG
 2601 TTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTTAGGGGGATGAGTTCCCTC
 141 • N R T Y K L P I L E E
 SacI (2769) BstXI (2798)
 2701 AATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACC
 129 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 V
 2801 ACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAA
 95 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 A I
 StuI (2933)
 2901 TGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTG
 62 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 H
 BspHI (3083)
 3001 CTTGTTGCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCCTA
 29 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
 XmnI (3075)
 3101 TAGTGAGTCGTATTATACTATGCGGATATACTATGCGGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGA
 AseI (3141) SacI (3198)
 3201 GCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTTGATTTACTA
 SpeI (3296)
 3301 G TCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGTATCCACGCCATTGATGTACTGCCAAAACCGCAT
 SnaBI (3424)
 3401 CATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTACCG
 NdeI (3529)
 3501 TCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCCAAGTGGGCGAGTTTACCCTAAATACTCCACCATTGACGTCAATGGA
 3601 AAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTACCGTAAGTTA
 PstI (3708) SdaI (3707) PacI (3715) BspLU11I (3725)
 3701 TGTAACGCC T G C A G G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G A A A A G G C C A G G A A C C G T A A A A A G G C C G G T T G C T G G C G T T T T T C C A T A G G C T
 3799 CCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCC
 3899 CTCGTGCGCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTACGCTGTAGGT
 ApaLI (4039)
 3999 ATCTCAGTTCGGTGTAGGTGCTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCCGTTACAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGA
 4099 GTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAG
 4199 TGGTGGCCTAACTACGGTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCG
 4299 GCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTAC
 EagI (4475) PacI (4455) SwaI (4464) NotI (4474)
 4399 GGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTAT
 4499 TTTCAATACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGT
 4599 CCCAGTGCAAGTGACAGGTGCCAGAACATTTCTCTATCGAA