



125

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

101 GAGAAGGTGGCGGGGTAACGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCGCCGCCCTACCTGAGGCC HindIII (245) Bsu36I (291) EcoNI (287)

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT NgoMI (441) NaeI (441)

501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACTCTGAGATCACCGGTCAACCATGGAAGGGTCTAAGACGTCCAACAACAGCACCATGCA NcoI (560) BstEII (555) AgeI (552) KasI (535) 1▶ M E G S K T S N N S T M Q

601 GGTGAGCTTCGTGTGCCAGCGTGCAGCCAGCCCTGAAACTGGACACGAGTTTCAAGATCCTGGACCGTGCACCATCCAGGAACCTCACAGCTCCATTA PstI (621) Eco47III (617) Tth111I (664) 13▶ V S F V C Q R C S Q P L K L D T S F K I L D R V T I Q E L T A P L

701 CTTACCACAGCCAGCGAAACCAGGAGAGACCCAGGAGGAAGAGACTAACTCAGGAGAGGAGCCATTATTGAAACTCCTCGCCAGGATGGTGTCTCTC 47▶ L T T A Q A K P G E T Q E E E T N S G E E P F I E T P R Q D G V S

801 GCAGATTCATCCCCCAGCCAGGATGATGTCCACAGAAAGTGCCAACAGCTTCACTCTGATTGGGAGGCATCTGATGGCGGCACCATGGAGAACCTCAG NcoI (884) 80▶ R R F I P P A R M M S T E S A N S F T L I G E A S D G G T M E N L S

901 CCGAAGACTGAAGTCACTGGGGACCTTTTGGACATCATGTCCGGCCAGACAGATGTGGATCACCCACTCTGTGAGGAATGCACAGATACTCTTTTAGAC EcoO109I (920) BsiBI (952) DraIII (965) 113▶ R R L K V T G D L F D I M S G Q T D V D H P L C E E C T D T L L D

1001 CAGCTGGACACTCAGCTCAACGCTCACTGAAAATGAGTGTGAGAACTACAAACGCTGTTTGGAGATCTTAGAGCAAATGAATGAGGATGACAGTGAACAGT BglIII (1061) 147▶ Q L D T Q L N V T E N E C Q N Y K R C L E I L E Q M N E D D S E Q

1101 TACAGATGGAGCTAAAGGAGCTGGCACTAGAGGAGGAGGCTGATCCAGGAGCTGGAAGACGTGGAAGAAAGAACCGAAGATAGTGGCAGAAAATCTCGA XhoI (1195) 180▶ L Q M E L K E L A L E E E R L I Q E L E D V E K N R K I V A E N L E

1201 GAAGGTCCAGGCTGAGGCTGAGAGACTGGATCAGGAGGAAGCTCAGTATCAGAGAGAATACAGTGAATTTAAACGACAGCAGCTGGAGCTGGATGATGAG 213▶ K V Q A E A E R L D Q E E A Q Y Q R E Y S E F K R Q Q L E L D D E

1301 CTGAAGAGTGTGAAAACAGATGCGTTATGCCAGACGACGCTGGATAAGCTGAAGAAAACCAACGCTTTAATGCAACCTCCACATCTGGCACAGTG 247▶ L K S V E N Q M R Y A Q T Q L D K L K K T N V F N A T F H I W H S

1401 GACAGTTTGGCACAATCAATAACTTCAGGCTGGGTGCGCTGCCAGTGTCCCGTGAATGGAATGAGATTAATGCTGCTTGGGGCCAGACTGTGTTGCT XcmI (1442) AseI (1468) 280▶ G Q F G T I N N F R L G R L P S V P V E W N E I N A A W G Q T V L L

1501 GCTCCATGCTCTGGCCAATAAGATGGGTCTGAAATTTAGAGATACCGACTTGTTCCTTACGGAAACCATTATATCTGGAGTCTCTGACAGACAAATCT BstXI (1514) MscI (1511) XmnI (1562) 313▶ L H A L A N K M G L K F Q R Y R L V P Y G N H S Y L E S L T D K S

1601 AAGGAGCTGCCGTATACTGTTCTGGGGGTTGCGGTTTTCTGGGACAACAAGTTTACCATGCAATGGTGGCTTTCCTGGACTGTGTGCAGCAGTTCA 347▶ K E L P L Y C S G G L R F F W D N K F D H A M V A F L D C V Q Q Q F

1701 AAGAAGAGTTGAGAAAGCGCAGACAGTTTTTGTCTTCCCTACAGGATGGATGTGGAGAAAGCAAGATTGAAGACACAGGAGGCGGCTGCTCCTA 380▶ K E E V E K G E T R F C L P Y R M D V E K G K I E D T G G S G G S Y

1801 TTCCATCAAACCCAGTTAACTCTGAGGAGCAGTGGACAAAAGCTCTCAAGTTCATGCTGACGAATCTTAAGTGGGGTCTTGGTGGGTGTCCTCACAA 413▶ S I K T Q F N S E E Q W T K A L K F M L T N L K W G L A W V S S Q

1901 TTTTATACAAATGACTTTTTTCTTAGGGGAGGTTTGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAACCACAACCTAGAAT MscI (1947) Bsu36I (1922) NheI (1941) 447▶ F Y N K •

2001 GCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATT HpaI (2079) MfeI (2090)

2101 CATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTTAAAATACAGCATAGCAAA EcoRI (2175) 2201 ACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTGCCAATGTGCATTAGCTGTTTGCA

2301 GCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTACTCTTCAATTTTATGTTTTAAATGACTGACCTCCACAT

2401 TCCCTTTTATGATAAATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATAGGCAGAATCCAGATGCTCAAGGCCCTTCAT SspI (2414) SwaI (2428) EcoO109I (2489)

2501 AATATCCCCCAGTTTAGTGTGACTTAGGGAACAAAGGAACCTTTAATAGAAATTTGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTAC 141▶ • N R T Y

SacI (2689)

2601 TTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGC
 135 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 A Y D S I L E R C

BstXI (2718)

2701 ACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGCTTCTGCCGGTTGCT
 102 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

StuI (2853)
Eco147I (2853)

2801 CACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTG
 69 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 I I E G T K T R

XmnI (2995)

2901 ATGGCCGCCCGACATGGTGTCTTGTTCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGTCCAGATCTGTGAGAGATGTTGAAGG
 35 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 L D Q Q S I N F T

BspHI (3003) AseI (3061)

3001 TCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTA
 2 K M

SacI (3118)

3101 TCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGG

SpeI (3216)

3201 AAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATT

SnaBI (3344)
Eco105I (3344)

3300 GATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAA

NdeI (3449)

3400 TGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACT

3500 CCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCTGTTGGGCGTCCAGCCAGG

PstI (3628) SdaI (3627) PacI (3635) PciI (3645) BspLU11I (3645)

3600 CGGGCCATTTACCGTAAGTTATGTAACGCTG 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 G A A C C G T A A A A G G C C G G T T

3698 GCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAG

3798 GCGTTTTCCCCTGGAAAGTCCCTCGTGGCTCTCTGTTCGACCCTGCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTT

ApaLI (3959)

3898 CTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTT

3998 ATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGC

4098 GGTGCTACAGAGTCTTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA AAAA

4198 GAGTTGGTAGCTCTTGATCCGGCAAACAACACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGA

EagI (4395)
PacI (4375) SmaI (4384) NotI (4394)

4298 AGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCC

4398 GCGGCAATAAAATATCTTTATTTTACATCTGTGTGGTTTTTTTGTGTAATCGTAACATAACGCTCTCCATCAAAAACAAAACGAAACAAA

4498 CAAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTATCGAA