



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

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
HindIII (245) EcoNI (287) **Bsu36I (291)**

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT
NcoMIV (441)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCATCATGATGGACTTGGAGTGGCCACCGCCAGGACTACAGTC
KasI (535) AgeI (552) **BspHI (560)** PshAI (590)
1▶ M M D L E L P P P G L Q S

601 CCAGCAGGACATGGATTTGATGACATCCTTTGGAGGCAAGACATAGATCTTGGAGTAAGTCGAGAAGTGGTTCAGCTTTCAGTCAGCGACAGAAGGACTAT
BsaBI (618) BglIII (645) PshAI (673)
13▶ Q Q D M D L I D I L W R Q D I D L G V S R E V F D F S Q R Q K D Y

701 GAGCTGAAAAACAGAAAAAAGTCCGAAAAGGAAAGACAAGAGCAACTCCAGAAGGAACAGGAGAAGGCCCTTTTTGCTCAGTTTCAACTGGATGAAGAAA
StuI (764)
47▶ E L E K Q K K L E K E R Q E Q L Q K E Q E K A F F A Q F Q L D E E

801 CAGGAGAATTCCTCCAATTCAGCCGGCCAGCATATCCAGACAGACACCAGTGGATCCGCCAGTACTCCAGGTTGCCACATTCCCAACAAGATGC
NcoMIV (822) **BamHI (853)**
80▶ T G E F L P I Q P A Q H I Q T D T S G S A S Y S Q V A H I P K Q D A

901 CTTGTACTTTGAAGACTGTATGCAGCTTTTGGCAGAGACATCCCATTTGTAGATGACCATGAGTCGCTTGCCTGGATATCCCCAGCCAGCCTGAAAGT
EcoRV (976)
113▶ L Y F E D C M Q L L A E T F P F V D D H E S L A L D I P S H A E S

1001 TCAGTCTTCACTGCCCTCATCAGGCCAGTCCCTCAATAGTCTCTGGAGGAGCCATGACTGATTTAAGCAGCATAGAGCAGGACATGGAGCAAGTTT
147▶ S V F T A P H Q A Q S L N S S L E A A M T D L S S I E Q D M E Q V

1101 GGCAGGAGCTATTTCCATTCCCGAATTACAGTGTCTTAATACCGAAAACAAGCAGCTGGCTGATACTACCGCTGTTCCAGCCAGAAAGCCACACTGAC
180▶ W Q E L F S I P E L Q C L N T E N K Q L A D T T A V P S P E A T L T

1201 AGAAATGGACAGCAATTACCATTTTTACTCATGATCTCCTCGCTGGAAAAAGAGTGGGCAACTGTGGTCCACATTTCTTCATGGTTTTGAGGATTCT
ClaI (1230)
213▶ E M D S N Y H F Y S S I S S L E K E V G N C G P H F L H G F E D S

1301 TTCAGCAGCATCTCTCCACTGATGCCAGCAGCTGACCTCCTTAGACTCAAATCCACCTTAAACACAGATTTTGGCGATGAATTTTATCTGCTT
247▶ F S S I L S T D A S Q L T S L D S N P T L N T D F G D E F Y S A

1401 TCATAGCAGAGCCAGTACGGTGGCAGCATGCCTTCCGCTGCCATCAGTCAGTCACTCTCTGAACCTCTGGACGGGACTATTGAAGGCTGTGACCT
SphI (1427)
280▶ F I A E P S D I G G S M P S S A A I S Q S L S E L L D G T I E G C D L

1501 GTCAGTGTGTAAGCTTTCAACCCGAAGCAGCTGAAGGCACAATGGAATTCATGACTCTGACTCTGGCATTTCAGTGAACACAAGTCCCAGCCGAGGC
HindIII (1511)
313▶ S L C K A F N P K H A E G T M E F N D S D S G I S L N T S P S R A

1601 TCCCAGAGCACTCCGTGGAGCTTCCATTTACGGAGACCACCGCTGGGTTGAGTACTCGGAAATGGAGGAGCTAGATAGTCCCTGGAAGTGTC
DraIII (1609)
347▶ S P E H S V E S S I Y G D P P P G F S D S E M E E L D S A P G S V

1701 AACAGAACGGCCATAAGCACAGCCAGCACATTCTCTGGAGACACAGTACAGCTCTGTACCAGCTCAAGGCACAGTGTCTCTATGCGTGAATCCCA
380▶ K Q N G P K A Q P A H S P G D T V Q P L S P A Q G H S A P M R E S Q

1801 ATGTGAAAATACAACAAAAAAGAGTTCCCGTGAATCCTGGTATCAAAAAGCCCATTCACAAAAGACAAACATTCAGCCGCTTAGAGGCTCATCTC
413▶ C E N T T K K E V P V S P G H Q K A P F T K D K H S S R L E A H L

1901 ACACGAGATGAGCTTAGGGCAAAAGCTCCATATTCATCCCTGTCGAAAAAATCATAAACCTCCCTGTTGATGACTTCAATGAAATGATGTCCAAGG
447▶ T R D E L R A K A L H I P F P V E K I I N L P V D D F N E M M S K

2001 AGCAATTCATGAAGCTCAGCTCGCATTGATCCGAGATATACGAGGAGAGGTAAGAATAAAGTCCGCCAGAACTGTAGGAAAAGGAAGCTGGAGAA
480▶ E Q F N E A Q L A L I R D I R R R G K N K V A A Q N C R K R K L E N

2101 CATTGTCGAGCTGGAGCAAGACTTGGGCCACTTAAAAGACGAGAGAAAAAATACTCAGAGAAAAGGAGAAAACGACAGAAACCTCCATCTACTGAAA
513▶ I V E L E Q D L G H L K D E R E K L L R E K G E N D R N L H L L K

2201 AGGCGGCTCAGCACCTTTGTATCTTGAAGCTTTCAGCATGTTACGTGATGAGGATGAAAAGCCTTACTCTCCAGTGAATACTCTGACAGCAAACAGAG
PstI (2284)
547▶ R R L S T L Y L E V F S M L R D E D G K P Y S P S E Y S L Q Q T R

2301 ATGGCAATGTGTTCTTTGTTCCAAAAGCAAGAAGCCAGATACAAGAAAAAATAAGTTCGGGAGGATGGAGCCTTTTCTGAGCTAGCTGGCCAGACATG
NheI (2382) **MscI (2388)**
580▶ D G N V F L V P K S K K P D T K K N •

2401 ATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCA

2501 TTATAAGCTGCAATAAACAGTTAAACAACAACATTGCATTCATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCT
HpaI (2520) MfeI (2531)

2601 CTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCAT

2701 AGGCATCAGGGGCTGTTGCCAATGTCATTAGCTGTTTGACGCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACG

2801 TCTTCATTTCTTTATGTTTTAAATGCAGCTGACCTCCACATTCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAAT

2901 GTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGG

3001 ACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAG
 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

3101 CACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGC
 116 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

3201 CTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAAATGGCAATGGCTTCAGCACAGACAGTGCACCTGCCAATGTAGGCCT
 82 R 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

3301 CAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGC
 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

3401 GACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCTATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGA
 16 V E V L E L D Q Q S I N F T K M

3501 TGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCG

3601 CCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTGTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCAATGGGGTGGAGAC

3701 TTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTG

3801 CCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGCCATATGATAC

3901 ACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTA

4001 TTGACGTCAATGGGCGGGGTCGTTGGCGGTCAGCCAGGCGGGCATTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAGAACATGTGAGCAAAA

4101 GGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAAATCGACGCTCAAGTC

4201 AGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCTGCCGCTTACCGGATA

4301 CCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGTCCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGT

4401 GTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAAGTCCAACCCGGTAAGACACGACTTATGCCACTGGCAGCAG

4501 CCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGG

4601 TATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGC

4701 AAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGA

4801 TTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAA

4901 CTAACATACGCTCTCCATCAAAAACAAACGAAACAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA