



PvuI (7)
SgfI (6)
MfeI (82)

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203)
HindIII (245)
Bsu36I (291)

201 GTGAACGTTCTTTTTTCGAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTCACGCGCCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

AgeI (552)
BspLU11I (560)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCAACATGTCTCATGCAGCCGAGCCAGCTCGGGACGCCGTAGA

▶
1▶ M S H A A E P A R D A V E

SapI (640)
EcoRI (681)

601 GGCCAGCGCGGAGGGCCCTCGGCCGTGTTCTGCTATTGGAAGAGCGCAGGCCAGCTGAGTCGCCAGCTGCTCAGCCTGAATCTTTGCTCCGGAA

13▶ A S A E G P R A V F L L L E E R R P A E S A Q L L S L N S L L P E

EcoRV (715)

701 TCCGGATTGTTGCTGATATCGAGTTAGAAAACATCCTCGATCCTGACAGTCTTACGAGCTCAAAGCCAACCCCTATCCCTCCGCTCCAGCCTCCCAA

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

BbsI (846)

801 TATCACTGCAGGCCACACCGACCACCCAGCTACACTCTCTGCGTGTCTTCTGCAGGGGCTCCCGACCCCTGCCATGTCATCTTCTTCATCACGGGT

80▶ I S L Q A T P T T P A T L S A S S S A G G S R T P A M S S S S S R V

EagI (971)
NotI (970)

901 CTTGCTGCGTCAGCAGCTTATGAGGGCCAGGCTCAGGAACAGGAGGGCTGAGCGCGGGAACAGGCAGCGCCGCTCCCTTCCCAGCCCTGCGCCC

113▶ L L R Q Q L M R A Q A Q E Q E R R E R R E Q A A A A P F P S P A P

MscI (1038)

1001 GCCTACCAGCCATCTCTGTGATTGGCGTGTCTGCTGGTGGCCACACTGAGTCGTCCACCTCTGCTCAGGTGCCAGGGAGTACTCAAGGTTTCAAG

147▶ A S P A I S V I G V S A G G H T L S R P P P A Q V P R E V L K V Q

XhoI (1105) **ScaI (1160)**

1101 CCCACCTCGAAGCCCTACACGCTACCACCTGCAGCAAGCTCGCCGGCAGCAGGTCAAACAGTACTTGTCTACCACACTTGGGCCAAGCTGGCTTCCA

180▶ T H L E N P T R Y H L Q Q A R R Q Q V K Q Y L S T T L G P K L A S Q

AgeI (1267) **NcoI (1298)**

1201 GGCTCTACCCACCACCAGGGCCTTCCAGTGCCAGCCACTTCTGCCCTGAAACTGCTCATGCCACCGGTCTACAGGCAGTGTCTTAACAGCCCC

213▶ A L T P P P G P S S A Q P L P A P E T A H A T G P T G S A P N S P

1301 ATGGCGTGTCCACATTGGGTCCAGCTCAGAAAAGGAGATTGATGATGTCATTGATGAGATCATCAGCCTGGAGTCCAGTTACAACGATGAGATGCTCA

247▶ M A L L T I G S S S E K E I D D V I D E I I S L E S S Y N D E M L

BsrGI (1472)

1401 GCTATCTTCCAGGAGGCACTGCAGGGCTGCAGTCTCCAGCAGCTGCCGGTGTCTGGAAATCTACTTGTGTGTACAGCAGTCCAGGAGTGGCTACCCC

280▶ S Y L P G G T A G L Q L P S T L P V S G N L L D V Y S S Q G V A T P

BglII (1553)

1501 AGCTATCACCGTCAGCAATTCCTGTCCAGTGTGCTGCTAATCAACGCGAGATCTCCGAAACCAGGCAAAGGCCCTTTTGAAGGAGCGACAGAAG

313▶ A I T V S N S C P A E L P N I K R E I S E T E A K A L L K E R Q K

1601 AAAGACAATCACAACTAATTGAACGACGAGCGGATTCAACATTAACGATAGGATCAAAGAGCTGGGCACCTCATCCCCAAGTCCAATGATCCGGAGA

347▶ K D N H N L I E R R R R F N I N D R I K E L G T L I P K S N D P E

1701 TGGCTGGAACAAGGGCACCATCTGAAGGCATCTGTGGATTACATCCGAAATTACAGAAGGAACAGCAACGCTCCAAGACCTGGAGAGCCGGCAGCG

380▶ M R W N K G T I L K A S V D Y I R K L Q K E Q Q R S K D L E S R Q R

NcoI (1866)

1801 GTCCTGGAACAAGCCAACCGAAGCCTGCAGTCCGGATTCCAGGAGTGAAGTGCAGGCCAGATCCATGGTCTGCCAGTCCCTCCAACCCAGGACTG

413▶ S L E Q A N R S L Q L R I Q E L E L Q A Q I H G L P V P P N P G L

StuI (1969) **Psp1406I (1980)**

1901 CTCTCCCTAACCCAGGTTCCGGTCTCTGACAGCCTCAAGCCAGAACAGCTGGACATTGAGGAGGAGGGCAGGCCTAGCACAACTTCCATGTATCGGGAG

447▶ L S L T T S S V S D S L K P E Q L D I E E E G R P S T T F H V S G

XcmI (2072) **SandI (2096)**

2001 GACCTGCCAGAAGCCTCTCCACAACAGCCTCCAGCACCACCTTCGGATGCCCTTCTGGACCTACACTTTCCAGCGACCACTTGGGAGACCTGGGGGA

480▶ G P A Q N A P P Q Q P P A P P S D A L L D L H F P S D H L G D L G D

AvrII (2109)

2101 CCCCTTCCACCTAGGGCTAGAGGACATTCTGATGGAGGAGGAGGGGATGGTGGGAGGACTGTGAGGGGTGCCTGTCCCCACTGCGGGCTGCTTCTGAC

513▶ P F H L G L E D I L M E E E G M V G G L S G G A L S P L R A A S D

MscI (2290)

2201 CCCTGCTTCTTTCAGTATCCCCGGCTGTTTCCAAGGCCAGCAGCCGCTAGCAGCTTCCAGTATGGAAGAGGAGTCTGATCAGCTAGCTAGCTGGCCAGACA

547▶ P L L S S V S P A V S K A S S R R S S F S M E E E S •

2301 TGATAAGATACATTGATGAGTTGGACAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAAC

2401 **HpaI (2422)** MfeI (2433) CATTATAAGCTGCAATAAACAAAGTTAAACAACAACAATTGCATTCAATTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAC

2501 EcoRI (2518) CTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGC

2601 ATAGGCATCAGGGGCTGTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATATAGTGATTTTCCCAAGTTTGAACTA

2701 SapI (2700) SspI (2757) SmaI (2771) GCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAA

2801 ATGTTTTTTATTAGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATT

2901 GGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCTCAATG

3001 AGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGT
116 L 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

3101 GCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGC
83 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

3201 CTCAATGTGGACAGCAGAGATGATCTCCCAGTCTGGTCTGATGGCCGCCGACATGGTGCTTGTGTCTCATAGAGCATGGTGATCTTCTCAGTG
50 E 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

3301 BbsI (3342) XmnI (3338) GCGACCTCCACCAGTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCC
16 A V E V L E L D Q Q S I N F T K M

3401 AseI (3404) GATGATTAATTGTCAAACACGCTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTAC

3501 SpeI (3559) CGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAG

3601 SnaBI (3687) ACTTGAAATCCCGTGAGTCAAACGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAC

3701 NdeI (3792) TGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGAT

3801 ACACCTTGATGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCA

3901 PacI (3978) SdaI (3970) BspLU11I (3988) TATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAAATAAGAACATGTGAGCAA

4001 AAGGCCAGCAAAGGCCAGGAACCGTAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAG

4101 TCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGA

4201 TACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCT

4301 ApaLI (4302) GTGTGCACGAACCCCGTTGAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTGAGTCAACCCGGTAAGACACGACTTATGCCACTGGCAGC

4401 AGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTT

4501 GGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGCAACAAACACCAGCTGGTAGCGGTGTTTTTTGTTT

4601 GCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGG

4701 EagI (4738) PacI (4718) SmaI (4727) NotI (4737) GATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGT

4801 AACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCG

4901 AA