



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

1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTGTGCTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)

Psp1406I (203)
PvuII (239)
Bsu36I (291)

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

BstEII (555)
AgeI (552) **NcoI (560)**

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTACCCATGGATGAGTCTGCAAAGACCCTGCCACCACCGTGCCT

1▶ M D E S A K T L P P P C L

601 CTGTTTTTCTCCGAGAAAGGAGAAGATATGAAAGTGGGATATGATCCATCACTCCGAGAAAGGAGGAGGGTGCCTGTTTGGGATCTGCAGGGATGGA

13▶ C F C S E K G E D M K V G Y D P I T P Q K E E G A W F G I C R D G

701 AGGCTGTGGCTGCTACCTCCTGCTGGCCCTGTTGTCCAGCAGTTTACAGCGATGTCTTGTACCAGTTGGCTGCCTTGAAGCAGACCTGATGAACC

47▶ R L L A A T L L L A L L S S S F T A M S L Y Q L A A L Q A D L M N

FspI (800)
SacII (845)

801 TGCATGGAGCTGCAGAGTACCGAGGTTACGCAACACCAGCCCGCGGGTGTCCAGAGTTGACCGCTGGAGTCAAACCTCTGACACCGGACGCTCC

80▶ L R M E L Q S Y R G S A T P A A A G A P E L T A G V K L L T P A A P

SacII (918)

901 TCGACCCACAACCTCCAGCCGCGCCACAGGAACAGACGCGCTTCCAGGGACCAGAGGAAACAGAACAAGATGTAGACCTCTCAGCTCCTCCTGCACCA

113▶ R P H N S S R G H R N R R A F Q G P E E T E Q D V D L S A P P A P

PvuII (1075)

1001 TGCTGCCTGGATGCCGCCATTCTAACATGATGATAATGAAATGAACCTCAGAAACATCATTCAAGACTGTCTGCAGCTGATTGCAGACAGCGACACGC

147▶ C L P G C R H S Q H D D N G M N L R N I I Q D C L Q L I A D S D T

NcoI (1132)

1101 CGACTATACGAAAAGAACTTACACATTTGTTCCATGGCTTCTCAGCTTTAAAAGAGGAAATGCCTTGAGGAGAAAGAGAACAAAATAGTGGTGAGGCA

180▶ P T I R K G T Y T F V P W L L S F K R G N A L E E K E N K I V V R Q

XcmI (1244)

1201 AACAGGCTATTTCTCATCTACAGCCAGGTTCTATACAGGACCCCATCTTTGCTATGGGTATGTATCCAGAGGAAAGAAAGTACACGCTTTGGGGAC

213▶ T G Y F F I Y S Q V L Y T D P I F A M G H V I Q R K K V H V F G D

BstEII (1311) **NruI (1382)**

1301 GAGCTGAGCCTGGTGACCCTGTTCCGATGTATTGAAATATGCCAAAACACTGCCAACAATTCCTGCTACTCGGCTGGCATCGCGAGGCTGGAAGAAG

247▶ E L S L V T L F R C I Q N M P K T L P N N S C Y S A G I A R L E E

1401 GAGATGAGATTGAGTTGCAATTCCTCGGGAGAATGCACAGATTTACGCAACGGAGACGACCTTCTTTGGTGCCTAAAACCTGCTGTAACCTACTTG

280▶ G D E I Q L A I P R E N A Q I S R N G D D T F F G A L K L L •

MscI (1517)

NheI (1511)

1501 CTGGAGTGCCTGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTAAAT

HpaI (1649) **MfeI (1660)**

1601 TTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTG

EcoRI (1745)

1701 TGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTG

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1801 AATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATA

SapI (1927) **SspI (1984)** **Swal (1998)**

1901 TAGTGATTTTCCCAAGGTTTGAAGTCTCTCATTCTTTATGTTTAAATGCACTGACCTCCACATTCCCTTTTATGTAATAATTCAGAAATAAT

EcoO109I (2059)

2001 TTAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAG

2101 GGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTTCTCAATGGTGGT

141▶ • N R T Y K L P I L E E I T T

SacI (2259) **BstXI (2288)**

2201 TTGACAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGTGACCACCTGATGG

125▶ 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 V R I S

2301 ATCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTACG

92▶ 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 A E A

2401 ACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTGTCC
59 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 K N D
StuI (2423)

2501 TCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCCTATAGTGAGTCG
25 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
BbsI (2569)
XmnI (2565)

2601 TATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTA
AseI (2631) SacI (2688)

2701 TATAGACCTCCCACCGTACACGCTACCGCCATTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGICAAAACAA
SpeI (2786)

2801 ACTCCCATTGACGTCATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTA

2901 ATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCATAAAGTCACTGACTGGGCATAATGCCAGGCGGGCCATTACCGTCATTGACGT
SnaBI (2914)

3001 CAATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCAAGTGGGCAGTTTACCCTAAATACTCCACCCATTGACGTCATGGAAAGTCCCTAT
NdeI (3019)

3101 TGGCGTTACTATGGGAACATACGTCATTATTGACGTCATGGGGCGGGTCTGTTGGGCGGTGAGCCAGGCGGGCCATTACCGTAAGTTATGTAACGCCCT
SdaI (3197)

3201 GCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGCGTTTTTCCATAGGCTCCGCCCCCTGA
PacI (3205) BspLU11I (3215)

3301 CGAGCATCAGAAAATCGACGCTCAAGTCAAGTCAAGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCTGGAAGTCCCTCGTGCGCTCT

3401 CCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGG

3501 TGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGACGAACCCCGTTGAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGT
ApaLI (3529)

3601 AAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAAC

3701 TACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCA

3801 CCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTACGGGTCTGACGC

3901 TCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTATTACATC
PacI (3945) SwaI (3954) NotI (3964) EagI (3965)

4001 TGTGTGTTGGTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGAAG

4101 TGCAGGTGCCAGAACATTTCTCTATCGAA