



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGGC
PvuII (239)
Bsu36I (291)
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
NaeI (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTCAGCATGCTGAAGAAGCAGACTGCAGGGCTTGTGCTTTGGGG
AgeI (552) 1▶ M L K K Q T A G L V L W G
601 TGCTATCATCTTTGTGGGCTGGAATGCCCTGCTTCTTCTTCTGGACACGCCAGCAGCTGGCAGGCTGCCCTCAGACAGCGCCCTTGGTGATGAC
13▶ A I I F V G W N A L L L L F F W T R P A P G R L P S D S A L G D D

BsrBI (757) 701 CCTGCCAGCCTCACCCGTGAGGTATCCACCTGGCCGAGGACGCTGAGGCGGAGTTGGAGCGGAGAGGGGACTGTTGCAGCAATCAAGGAGCATTATG
47▶ P A S L T R E V I H L A E D A E A E L E R Q R G L L Q Q I K E H Y
BsaBI (882)
801 CTTTGTGGAGGCAGAGGTGGAGAGTTCCCACTGTGCCCTCCAGCCTGGCCCGTGTGCTGTGACCCCTCACCAGTGCAGATCCCATCTGGTGCAT
80▶ A L W R Q R W R V P T V A P P A W P R V P V T P S P V Q I P I L V I

PvuII (959) 901 TGCCTGTGACCGCAGCACTGTCCGGCGTCTGGATAAGTTGTTGCACTATCGCCCTCAGCTGAGCGTTTCCCATTATTGTCAGTCAGGACTGTGGG
113▶ A C D R S T V R R C L D K L L H Y R P S A E R F P I I V S Q D C G
1001 CATGAAGAGACAGACAGGTCAATGCTTCTATGGCACTGCAGTCACACACATCCGGCAGCCGACCTGAGTAACATTGCCGTGCAGCCAGACCACCGCA
147▶ H E E T A Q V I A S Y G T A V T H I R Q P D L S N I A V Q P D H R

BglII (1151) 1101 AGTTCAGGGTTACTACAAGATTGCCAGGCACTACCGTGGGCACTAGGCCAGATCTTCAACAAGTTCAAGTCCCGCCGCTGTGGTAGTGGAGGATGA
180▶ K F Q G Y Y K I A R H Y R W A L G Q I F N K F K F P A A V V V E D D
EagI (1175)

ScaI (1226) 1201 TCTGGAAGTGGCACCAGACTTCTTTGAGTACTCCAGGCCACCTACCCACTGCTGAGAACAGACCCCTCCCTTTGGTGTGTGCTGCTTGAATGACAAT
213▶ L E V A P D F F E Y F Q A T Y P L L R T D P S L W C V S A W N D N
1301 GGCAAGGAGCAGATGGTAGACTCAAGCAAACCTGAGCTGCTATCGAACAGACTTTTTCTGGCCTTGGATGGCTGCTGTTGGCTGATCTGTGGGAG
247▶ G K E Q M V D S S K P E L L Y R T D F F P G L G W L L L A D L W A
1401 AGCTGGAGCCCAAGTGGCCCAAGCCTTTGGGAGGACTGGATGCGCCGACCTGAGCAGCGGAAAGGACGGGCTGTATTTCGTCAGAAATTTCAAGAAC
280▶ E L E P K W P K A F W D D W M R R P E Q R K G R A C I R P E I S R T
1501 TATGACCTTTGGTCGAAAGGTGTGAGCCACGGGAGTCTTTGACCAGCATTAAGTTCATCAAGTGAACCAGCAGTTCGTCCTTCCACCCAGTTG
313▶ M T F G R K G V S H G Q F F D Q H L K F I K L N Q Q F V P F T Q L
1601 GACCTGTCGTACCTGCAGCAGGAGGCTATGACCGGACTTCTCGCCAGGCTATGGTGCCCCCAGCTACAGGTGGAGAAAGTAAGGACCAATGATC
347▶ D L S Y L Q Q E A Y D R D F L A Q V Y G A P Q L Q V E K V R T N D

EcoO109I (1763) 1701 AGAAGGAGCTGGGGAGGTGCGGGTACAGTACACTAGCAGAGACAGTTCAGGCTTTGCTAAGGCCCTGGGTGTCATGGATGACCTCAAGTCTGGTGT
380▶ Q K E L G E V R V Q Y T S R D S F K A F A K A L G V M D D L K S G V

NgoMIV (1844)
NaeI (1844) 1801 CCCAGGGCTGGCTACCGTGGCATTGTCACTTTCCAGTTTCGGGCGCGCTGTGCACCTGGCACCACACAGACATGGACTGGCTATGATCCTAGCTGG
413▶ P R A G Y R G I V T F Q F R G R V H L A P P Q T W T G Y D P S W
MscI (1943)
NheI (1937) 1901 AATTAGCAGCACCTGCCTTCCCTCCTGGGTCTCCTTGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAG
447▶ N •

HpaI (2075) 2001 TGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAGTTAAACAACAACATTGCATTCAAT
MfeI (2086)

EcoRI (2171) 2101 TTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTT
2201 TAACCTCAAATCAAGCCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCAATGTGCATTAGCTGTTTGCAGCCT
2301 CACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGTTTGAAGTACTGCTTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCC

SspI (2410) 2401 TTTTGTAGTAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTATAATA
SwaI (2424)
EcoO109I (2485)
2501 TCCCCAGTTTAGTAGTTGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTTCTGGTGTACTTGA
141▶ • N R T Y K L

SacI (2685)

2601 GGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACAT
134 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 M
2701 GCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACA
101 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 V
2801 GCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGCTCTGATGG
67 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 I A

BspHI

XmnI (2991)

2901 CCGCCCCGACATGGTGTGTTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTT
34 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 K

AseI (3057)

3001 CATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTG
1 M

SacI (3114)

3101 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAG

SpeI (3212)

3201 TCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATG

SnaBI (3340)

3300 TACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAAAGTCATGTACTGGGCATAATGCC

NdeI (3445)

3400 AGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGTTTACCGTAAATACTCCAC

3500 CCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGG

SdaI (3623) PacI (3631) BspLU11I (3641)

3600 CCATTTACGTAAGTTATGTAACGCTG 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 C 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 T T G C T G

3698 GCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGT

3798 TTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCA

ApaLI (3955)

3898 TAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCC

3998 GGTAACATATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTG

4098 CTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGT

4198 TGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGAT

EagI (4391)

PacI (4371) SwaI (4380) NotI (4390)

4298 CCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCG

4398 CAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAA

4498 CTAGCAAAATAGGCTGTCCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA