



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

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245) **Bsu36I (291)**
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGCC PvuII (239) EcoNI (287)

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
AgeI (552) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCCCTACCTGAGATCACCGGTACCATTGGCCCTGTCCTTTTCTTACTGATGGCCGTGCTGGT

1 M A L S F S L L M A V L V
EcoO109I (667)

XcmI (614) 601 GCTCAGCTACAAATCCATCTGTTCTCTGGGCTGTGATCTGCCTCAGACCCACAGCCTGGGTAATAGGAGGGCCTTGATACTCCTGGCACAATGGGAAGA
13 L S Y K S I C S L G C D L P Q T H S L G N R R A L I L L A Q M G R

701 ATCTCTCCTTTCTCTGCCTGAAGGACAGACATGACTTTGGATTCCCCAGGAGGAGTTTGATGGCAACCAAGTCCAGAAGGCTCAAGCCATCTCTGTCC
47 I S P F S C L K D R H D F G F P Q E E F D G N Q F Q K A Q A I S V

801 TCCATGAGATGATCCAGCAGACCTCAATCTCTCAGCACAAAGGACTCATCTGCTACTTGGGAACAGAGCCTCTAGAAAAATTTCAACTGAACCTAA
80 L H E M I Q Q T F N L F S T K D S S A T W E Q S L L E K F S T E L N

PvuII (904) 901 CCAGCAGCTGAATGACCTGGAAGCCTGCGTGATACAGGAGGTTGGGGTGAAGAGACTCCCCTGATGAATGTGGACTCCATCCTGGCTGTGAAGAAATAC
113 Q Q L N D L E A C V I Q E V G V E E T P L M N V D S I L A V K K Y

BspHI (1073) 1001 TTCAAAGAATCACTCTTTATCTGACAGAGAAGAAATACAGCCCTTGTGCTGGGAGGTTGTGAGAGCAGAAATCATGAGATCCTTCTTTATCAAAA
147 F Q R I T L Y L T E K K Y S P C A W E V V R A E I M R S F S L S K

MscI (1172)
NheI (1166) 1101 TTTTCAAGAAAGATTAAGGAGGAAGGAATGAAACCTGTTTCAACATCGAAATGATTCTCATTGACGCTAGCTGGCCAGACATGATAAGATACATTGATG
180 I F Q E R L R R K E •

1201 AGTTTGGACAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAA

HpaI (1304) **MfeI (1315)** 1301 ACAAGTTAAACAACAATTGCATTCATTTATGTTTCAGGTTAGGGGGAGGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATG

EcoRI (1400) 1401 GAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGT

SapI (1582) 1501 TGCCAATGTGCATTAGCTGTTTGACGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCAAGGTTTGAAGTACTCTTCTTTATG

SspI (1639) **Swal (1653)** 1601 TTTAAATGCACTGACCTCCACATTCCCTTTTGTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTTATTAGGCAG

EcoO109I (1714) 1701 AATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAG

1801 CTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTTCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAGCAGTCAGGA
1 N R T Y 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

SacI (1914) **BstXI (1943)** 1901 GCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGG
110 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 R V A V I T

StuI (2078) 2001 TGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGA
77 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 I H V A S

2101 GATGATCTCCCGAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTGCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCC
44 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 V E V L E

BbsI (2224) **AseI (2286)** 2201 AGATCCTGCTGAGAGATGTTGAAGGCTTCATGGTGGCCCTCCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAAA
10 L D Q Q S I N F T K M

SacI (2343) 2301 CAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCCTACCGCCATTTGCGTCAATG

SpeI (2441) 2401 GGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGA

2501 GTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGGAAAGTCC

SnaBI (2569)

2601 CATAAGGTCATGTAAGTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCCA

NdeI (2674)

2701 AGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCG

PacI (2860)

PstI (2853)

SdaI (2852)

BspLU11I (2870)

2801 GGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCA

2901 GGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCC

3001 GACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCCTGCCGTTACCGGATACCTGTCCGCTTTCTC

ApaLI (3184)

3101 CCTTCGGGAAGCGTGGCGCTTTTTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGG

3201 TTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGAT

3301 TAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTG

3401 AAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGGTGAATCGTAACTAACATACGCTCTCC

3501 GCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACACTCACGTTAAGGGATTTTGGTCATGGCTAG

EagI (3620)

PacI (3600) SwaI (3609) **NotI (3619)**

3601 TTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGGTTTTTTTGGTGAATCGTAACTAACATACGCTCTCC

3701 ATCAAAACAAAACGAAACAAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAAGTGCCAGGTCAGAACATTTCTCTATCGAA