



100

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

101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) **NaeI (441)**
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

NcoI (560) **BstEII (555)** **PvuII (580)**
501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACTCTGAGATCACCGGTACCATTGGCTACGCTGCTACTGCAGCTGCTGGGGCTCGGCGT KasI (535) AgeI (552) PstI (577)

601 GGCCTGGCGGCTGCCGCTCATTCTGTTTCCATTGTGGCTTTATAACTGTACAAAAATGCCACCATGTTACCAACATGAGGAAGAAATTCCTC XmnI (690)

13▶ A L A A A A L I L V S I V A F I T A T K M P P C Y Q H E E E K F F
701 CTCAATGCCAAAGGCCAGAAGGAGCTCTCCCGCATCTGGACTCGCTACGAAACAGCTATCTGTTGTTGCTCTCCTACAATGAAGAGAAACGGT
47▶ L N A K G Q K E A L P S I W D S P T K Q L S V V V P S Y N E E K R
801 TGCCTGTGATGATGGATGAAGCCCTGAAGTACCTAGAAAAGAGACAGAAACATGATTGACGTTACGTTACGATGAGGTTGAGGTTGACGATGGCAGTGA
80▶ L P V M M D E A L N Y L E K R Q K H D C T F T Y E V I V V D D G S E

Tth111I (949)
901 AGACCAGACGTCAAAGGTCGCTTAAAAACTGCCAGAAATACGGAAGTGACAAAGTCCGGGTGATAACGCTGGTGGGAAACCGTGGGAAAGGTGGTGC
113▶ D Q T S K V A L K Y C Q K Y G S D K V R V I T L V R N R G K G G A
1001 GTTAGGATGGGTGATTTCAGTCCCGAGGAGAGAAGATCTCATGGCAGATGCTGACGGAGCCACAAAGTTTCCAGATGTTGAGAAATGAGAAAAGGGC
147▶ V R M G V F S S R G E K I L M A D A D G A T K F P D V E K L E K G

Eco47III (1181)
1101 TGAGTGATCTACAGCCATGGCCTGAGCAAAATGGCTATTGCATGTGGGTCTCGAGCTCATCTGGAGAAAGAATCGATTGCTCAGCGCTCTTACTCCGTAC NcoI (1114) XhoI (1148) ClaI (1170) AfeI (1181)

180▶ L S D L Q P W P E Q M A I A C G S R A H L E K E S I A Q R S Y F R T

DraIII (1260)
1201 CTTCTTATGTACGGATTCCATTTCTGGTGTGGTTCCTCTGTGTCAAAGGAATCAGGGACACACAGTGGGGTTCAAATTACTGACCCGAGAAGCAGCA
213▶ F L M Y G F H F L V W F L C V K G I R D T Q C G F K L L T R E A A

BsrGI (1355)
1301 GCCCGACCTTCTCGTCTCTGCACATTGAACGATGGGCATTTGATGTAGAGCTGCTGTACATAGCACAGTGTCTTCAAATCCCAATAGCAGAAGTTGCTG
247▶ A R T F S S L H I E R W A F D V E L L Y I A Q C L Q I P I A E V A

XcmI (1435)
1401 TCAACTGGACAGAAATTGAGGGTCTAAGTTAGTTCCATTCTGGAGCTGGCTACAAATGGGCAAAGACCTGCTTTTCATCCGACTTCGGTATCTGACGGG
280▶ V N W T E I E G S K L V P F W S W L Q M G K D L L F I R L R Y L T G

MscI (1582) **NheI (1576)**
1501 TGCCTGGAGGCTCAAGCAAACACGAAAGCGAGTTAGTTGCTGGCAGGGCTGGACTGCATTTTATCCACATGCAGCTAGCTGGCCAGACATGATAAGA
313▶ A W R L K Q T R K A S •

1601 TACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAA

HpaI (1714) **MfeI (1725)**
1701 GCTGCAATAACAAGTTAAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAA

EcoRI (1810)
1801 ATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCAT
1901 CAGGGCTGTTGCCAATGTCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTCTCTTCA

SspI (2049) **SwaI (2063)**
2001 TTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTT

EcoO109I (2124)
2101 TATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATGGACAGCA

2201 AGAAAAGCAGCTTCTAGCTTTAGTTCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAA
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 V F

BstXI (2353)
2301 GCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACA
114▶ 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 R V

StuI (2488)
2401 GCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGT
80▶ 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 I H

2501 GGACAGCAGAGATGATCTCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTC
 47 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 V E
BspHI (2638)

2601 CACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTA
 14 V L E L D Q Q S I N F T K M
XmnI (2630)
AseI (2696)

2701 ATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATT
SpeI (2851)

2801 TCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGA
SnaBI (2979)

2900 AATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGTAATAGCGATGACTAATACGTAGATGTACTGCCAAG
NdeI (3084)

3000 TAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTG
 3100 ATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGAC
PstI (3263)

3200 GTCAATGGGCGGGGTCGTTGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAA TTAAGAACATGTGAGCAAAAGGC
SdaI (3262)
PacI (3270)
BspLU11I (3280)

3298 CAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGA
 3398 GGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTTCCCTGGAAAGCTCCCTCGTGCCTCTCTGTCCGACCCTGCCGCTTACCGGATACCT
ApaLI (3594)

3498 GTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTG
 3598 CACGAACCCCGTTCAGCCGACCGTGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCA
 3698 CTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTAT
 3798 CTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAG
 3898 CAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTT
EagI (4030)

3998 TGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGTTTTTGTGTAATCGTAACTA
PacI (4010)
SwaI (4019)
NotI (4029)

4098 ACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA