



PvuI (7)
SgfI (6)
1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
EcoNI (96)

101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203)
PvuII (239)
Bsu36I (291)
EcoNI (287)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCCGCCGCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCTGTGGTGCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

AgeI (552)
BspHI (568)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTAGGAGGGCCATCATGAAAGTGTACTCAGACTTATTTGTTTC
1 M K V L L R L I C F

601 ATAGTCTACTGATTTCTCTCTGAGGCTGATAAATGCAAGGAACGTGAAGAAAAATAATTTTAGTGTCTGCAATGAAATTGATGTTGTCGCCCT
11 I A L L I S S L E A D K C K E R E E K I I L V S S A N E I D V R P
701 GTCCTCTTAACCCAAATGAACACAAAGGCACTATAACTGGTATAAAGATGACAGCAAGACACCTGTATCTACAGAACAAGCCTCCAGGATTCATCAACA
44 C P L N P N E H K G T I T W Y K D D S K T P V S T E Q A S R I H Q H
801 CAAAGAGAAACTTTGTTTGTCTGCTAAGGTGGAGGATTGAGGACATTACTATTGCGTGGTAAAGAAATTCATCTTACTGCCTCAGAATTAATAAGT
77 K E K L W F V P A K V E D S G H Y Y C V V R N S S Y C L R I K I S
901 GCAAAATTTGGGAGAATGAGCCTAATGTTATAATGCACAAAGCCATATTTAAGCAGAAACTACCGTTGCAAGGAGACGGAGGACTTGTGTGCCCTT
111 A K F V E N E P N L C Y N A Q A I F K Q K L P V A G D G G L V A G T G P
1001 ATATGGAGTTTTTAAAAATGAAAATAATGAGTTACCTAAATACAGTGGTATAAAGGATTGCAAACTCTACTTGTGACAATATACACTTTAGTGAGT
144 Y M E F F K N E N N E L P K L Q W Y K D C K P L L L D N I H F S G V

NsiI (1159)
XmaI (1198)
1101 CAAAGATAGGCTCATCGTATGAATGTGGCTGAAAAGCATAGAGGAACTATACTTGTGATGCATCCTACACATACTTGGGCAAGCAATATCCTATTACC
177 K D R L I V M N V A E K H R G N Y T C H A S Y T Y L G K Q Y P I T

XbaI (1220)
StuI (1242)
BamHI (1290)
1201 CGGGTAATAGAATTTACTCTAGAGGAAAACAAACCACAAGGCTGTGATTGTGAGCCCAGTAATGAGACAATGGAAGTAGACTTGGGATCCCAGA
211 R V I E F I T L E E N K P T R P V I V S P A N E T M E V D L G S Q
1301 TACAATTGATCTGTAATGTCACCGGCCAGTTGAGTGACATTGCTTACTGGAAGTGGAAATGGGTGAGTAAATGATGAAGTAGCCAGTGTAGGGGAAGA
244 I Q L I C N V T G Q L S D I A Y W K N G S V I D E D P V I D E D
1401 CTATTACAGTGTGAAAACTCTGCAAAACAAAAGAAGGAGTACCCTCATCACAGTGCTTAATATATCGGAAATGAAAGTAGATTTTATAAACATCCATT
277 Y Y S V E N P A N K R R S T L I T V L N I S E I E S R F Y K H P F
1501 ACCTGTTTTGCCAAGAATACACATGGTATAGATGCAGCATATATCCAGTAAATATATCCAGTCACTAATTTCCAGAAGCACATGATTGGTATATGTGTCA
311 T C F A K N T H G I D A A Y I Q L I Y P V T N F Q K H M I G I C V
1601 CGTTGACAGTCATAAATGTGTGTTCTGTTTTCATCTATAAAATCTTCAAGATTGACATTGTGCTTGGTACAGGGATCCTGCTATGATTTTCCCAAT
344 T L T V I I V C S V F I Y K I D I V L W Y R D S C Y D F L P I

HindIII (1702)
1701 AAAAGCTTCAGATGGAAAGACCTATGACGCATATATACTGTATCCAAAGACTGTTGGGGAAGGGTCTACCTCTGACTGTGATATTTTTGTGTTTAAAGTC
377 K A S D G K T Y D A Y I L Y P K T V G E G S T S D C D I F V F K V

Bsu36I (1803)
AseI (1887)
1801 TTGCTGAGGTCTTGAAAAACAGTGTGGATATAAGCTGTTCAATTTATGGAAGGGATGACTACGTTGGGGAAGACATTGTTGAGGTCATTAATGAAAACG
411 L P E V L E K Q C G Y K L F I Y G R D D Y V G E D I V E V I N E N

PvuII (1952)
SapI (1974)
1901 TAAAGAAAAGCAGAAGACTGATTATCATTTTAGTCAGAGAAAACATCAGGCTTCAGCTGGTGGTTCATCTGAAGAGCAAATAGCCATGTATAATGC
444 V K K S R R L I I I L V R E T S G F S W L G G S S E E Q I A M Y N A

ClaI (2072)
2001 TCTTGTTCAAGATGGAATTAAGTTGCTCTGCTGAGCTGGAGAAAATCCAAGACTATGAGAAAATGCCAGAATCGATTAATTCATTAAGCAGAAAACAT
477 L V Q D G I K V V L L E L E K I Q D Y E K M P E S I K F I K Q K H

PshAI (2134)
Acc65I (2173)
BstEII (2197)
2101 GGGCTATCCGCTGGTCAGGGGACTTTACACAGGGACCACAGTCTGCAAAGACAAGGTTCTGGAAGAATGTCAGGTACCACATGCCAGTCCAGCGACGGT
511 G A I R W S G D F T Q G P Q S A K T R F W K N V R Y H M P V Q R R

BbrPI (2262)
2201 CACCTTCATTAACACCAGTACTGTACCAGCCACTAAGGAGAAAAGCTGCAAAGAGAGGCTCACGTGCCTCTCGGGTAGCATGGAGAAGTTGCCAAGAG
544 S P S S K H Q L L S P A T K E K L Q R E A H V P L G •

MscI (2330)
NheI (2324)
2301 TTCTTTAGGTGCCTCCTGTCTTATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAATAGAATGCAGTAAAAAATGC

HpaI (2462)
2401 TTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCAATTTATGTTTCAGGT

EcoRI (2558)
2501 TCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACTCCAAATC

2601 AAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCAT

SapI (2740)
SspI (2797)
2701 GGAGTTTAAAGATAGTGTATTTTCCCAAGTTTGAAGTACTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAT

SwaI (2811) EcoO109I (2872)
 2801 ATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAA
 2901 TAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTC
 141 • N R T Y K L P I L E
 SacI (3072)
 3001 CTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTG
 130 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 G C P S
 BstXI (3101)
 3101 ACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGG
 96 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 A S G I A
 StuI (3236)
 3201 CAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATG
 63 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 A G V H
 XmnI (3378)
 3301 GTGCTTGTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTC
 30 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 M
 AseI (3444)
 3401 CTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAA
 SacI (3501) SpeI (3599)
 3501 CGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTA
 3601 CTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTACTGCCAAAACCG
 SnaBI (3727)
 3701 CATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTA
 NdeI (3832)
 3801 CCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCCAAGTGGGCGAGTTACCCTAAATACTCCACCCATTGACGTCAAT
 3901 GGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGGGGGGTCTTGGGCGGTGAGCCAGGCGGGCCATTTACCCTAAG
 PacI (4018)
 PstI (4011) SdaI (4010) BspLU11I (4028)
 4001 TTATGTAACGCTGACAGTTAATTAAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGC
 4101 TCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCCCTGGAAGCTC
 4201 CCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGG
 ApaLI (4342)
 4301 TATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTG
 4401 AGTCCAACCCGGTAAAGACACGACTTATCGCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAA
 4501 GTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCC
 4601 GGCAAAACAAACCACCGCTGGTAGCGGTGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTA
 EagI (4778)
 Pacl (4758) Swal (4767) NotI (4777)
 4701 CGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTA
 4801 TTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTG
 4901 TCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTATCGAA