



PvuI (7) SgfI (6) MfeI (82) EcoNI (96)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTATGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC
HindIII (245) Bsu36I (291)
201 Psp1406I (203) PvuII (239) EcoNI (287)
GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC
NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT
AgeI (552) BspHI (568) PvuII (593)
501 TCTGTTTGTCCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGCCATCATGAGTCTGCTAAACTGTGAAAACAGCTGT
1 M S L L N C E N S C
BamHI (600) NcoI (634) Eco47III (651)
601 GGATCCAGCCAGTCTGAAAGTGAAGTGTGCTGTGTGGCCATGGCCAGCTCCTGTAGCGCTGTAACAAAAGATGATAGTGTGGGTGAAACTGCCAGCACGGGGA
11 G S S Q S E S D C C V A M A S S C S A V T K D D S V G G T A S T G
XcmI (706) XcmI (781)
701 ACCTCTCCAGTCTATTTATGGAGGAGATCCAGGATATGATGTAGAGTTTGACCCACCCTGAAAGCAAGTATGAATGCCCATCTGCTTGTATGGCATT
44 N L S S S F M E E I Q G Y D V E F D P P L E S K Y E C P I C L M A L
BstAPI (838)
801 ACGAGAAGCAGTGCAAACGCCATGCGGCCATAGTTCTGCAAAGCCTGCATCATAAAAATCAATAAGGGATGCAGGTACAAAATGTCCAGTTGACAATGAA
77 R E A V Q T P C G H R F C K A C I I K S I R D A G H K C P V D N E
901 ATACTGCTGAAAATCAACTATTTCCAGACAATTTGCAAACGTGAGATTCTTCTCTGATGGTGAATGTCCAAATGAAGGTTGTTTGACAAGATGG
111 I L L E N Q L F P D N F A K R E I L S L M V K C P N E G C L H K M
SspI (1092)
DraIII (1027) AseI (1089)
1001 AACTGAGACATCTTGAGGATCATCAAGCACATTGTGAGTTTGCTTATGAGTTGTCCTTATGAGTTGTCCTTCCAAAATGCCAGCTCCCTTCCAAAATTCATATTAATATTCA
144 E L R H L E D H Q A H C E F A L M D C P Q C Q R P F Q K F H I N I H
1101 CATTCTGAAGGATTGTCCAAGGAGACAGGTTTCTTGTGACAACTGTGCTGCATCAATGGCATTGAAGATAAAGAGATCCATGACCAGAACTGCCTTTG
177 I L K D C P R R Q V S C D N C A A S M A F E D K E I H D Q N C P L
XbaI (1265)
1201 GCAATGTCTGTGAATACTGCAATACTATACTCATCAGAGAACAGATGCCTAATCATTATGATCTAGACTGCCTACAGCCCAATTCATGCACAT
211 A N V I C E Y C N T I L I R E Q M P N H Y D L D C P T A P I P C T
ScaI (1302)
1301 TCAGTACTTTTGGTTGCCATGAAAAGATGCAGAGGAATCACTTGGCACGCCACCTACAAGAGAACACCCAGTCACACATGAGAATGTTGGCCAGGCTGT
244 F S T F G C H E K M Q R N H L A R H L Q E N T Q S H M R M L A Q A V
BspEI (1444) XmnI (1458)
1401 TCATAGTTTGTAGCGTTATACCCGACTCTGGGTATATCTCAGAGTCCGGAATTTCCAGGAAATATTACCAGTTAGAGGGTGCCTTGTAAAGACAAGAC
277 H S L S V I P D S G Y I S E V R N F Q E T I H Q L E G R L V R Q D
BstBI (1570)
Bsp119I (1570)
1501 CATCAAATCCGGGAGCTGACTGCTAAAATGGAAACTCAGAGTATGTATGTAAGTGAAGTCAAAACGAACCATTCGAACCTTGAGGACAAAAGTTGCTGAAA
311 H Q I R E L T A K M E T Q S M Y V S E L K R T I R T L E D K V A E
NsiI (1653)
1601 TCGAAGCACAGCAGTGAATGGAATTTATATTTGGAAGATTGGCAACTTTGGAATGCATTTGAAATGTCAAGAAGAGGAGAAACCTGTTGTGATTCATAG
344 I E A Q Q C N G I Y I W K I G N F G M H L K C Q E E E K P V V I H S
XmaI (1722) SphI (1738) Eco47III (1771)
1701 CCCTGGATTCTACTACTGGCAAACCGGTACAAAAGTGTGATGCCTTGCACCTTCAAGTACCAGTGTCTCAGCGCTGTGCAAACTATATATCCCTTTTT
377 P G F Y T G K P G Y K L C M R L H L Q L P T A Q R C A N Y I S L F
1801 GTCCACACAATGCAAGGAGAATATGACAGCCACCTCCCTTGGCCCTTCCAGGGTACAATACGCTTACAATTCTGATCAGTCTGAAGCACCTGTAAGGC
411 V H T M Q G E Y D S H L P W P F Q G T I R L T I L D Q S E A P V R
NsiI (1998)
1901 AAAACCACGAAGAGATAATGGATGCCAAACAGAGCTGCTTGTCTTCCAGCGACCCACAATCCACGGAACCCAAAAGTTTTGGCTATGTAACTTTTAT
444 Q N H E E I M D A K P E L L A F Q R P T I P R N P K G F G Y V T F M
2001 GCATCTGGAAGCCCTAAGACAAAGAATTTTATTAAAGGATGACACATTATTAGTGCCTGTGAGGTCTCCACCCGCTTTGACATGGGTAGCCTTCGGAGG
477 H L E A L R Q R T F I K D D T L L V R C E V S T R F D M G S L R R
ScaI (2118) NheI (2161)
2101 GAGGGTTTTAGCCACGAAGTACTGATGCAGGGTATAGCTTGCCTCACTTGTCTCAAAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTT
511 E G F Q P R S T D A G V
HpaI (2299)
2201 GGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAG
MfeI (2310) EcoRI (2395)
2301 TTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTTGTTGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATT
2401 CTAAAATACAGCATAGCAAACTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTGCCA
SapI (2577)
2501 ATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTTCCCAAGGTTTGAAGTACTCTTCAATTTTATGTTTTA

SspI (2634) SwaI (2648)
 2601 AATGCACTGACCTCCCACATTCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCC

EcoO109I (2709)
 2701 AGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCT

2801 AGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATA
 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 C D P A Y

BstXI (2938)
 2901 GTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGCA
 109 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 D

StuI (3073)
 3001 AAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGA
 75 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 I I

3101 TCTCCCAGTCTGGTCTGATGGCCGCCCGACATGGTGCTTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATC
 42 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 L D

BbsI (3219)
 XmnI (3215) AseI (3281)
 3201 CTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACGCG
 9 Q Q S I N F T K M

3301 TGGATGGCGTCTCCAGCTTACTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCG

SpeI (3436)
 3401 GAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGAGACTTGAAATCCCGTGAGTCAA

SnaBI (3564)
 3501 ACCCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAA

NdeI (3669)
 3601 GGTCATGTACTGGGCATAATGCCAGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGG

3701 GCAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGCGGGGGT

PacI (3855)
 PstI (3848) SdaI (3847) BspLU11I (3865)
 3801 CGTTGGCGGTACAGCCAGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAAC

3901 CGTAAAAGGCCGCGTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAG

4001 GACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTC

ApaLI (4179)
 4101 GGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCGTTCCAG

4201 CCCGACCGCTGCGCTTATCCGTAACATATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCA

4301 GAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCC

4401 AGTTACCTTCGAAAAAGAGTTGGTAGCTTGTATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTGTGCAAGCAGCAGATTACGCGCAGA

PacI (4595)
 4501 AAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAAT

EagI (4615)
 SwaI (4604) NotI (4614)
 4601 TAACATTTAAATCAGCGGCCCAATAAAATATCTTTATTTTACATTACATCTGTGTGTTGGTTTTTTGTGTAATCGTAACATAACATACGCTCTCCATCAA
 4701 AACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA