



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

Psp1406I (203) HindIII (245) Bsu36I (291)
EcoNI (287)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGGCC
301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NcoI (560)
BstEII (555) XmaI (582)
KasI (535) AgeI (552) SmaI (582)
501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCGCTACTCTGAGATCACCGGTACCCATGGCCAGGCTCCTGCTGACCCGGGAGAGAGGCCA
1 M A Q A P A D P G R E G H

SdaI (615)
601 CCTTGAACAAAGAATCCTGCAGGTGCTGACAGAGGCTGGCTCCCGGTGAAACTTGCCAGCTGGTGAAGGAATGCCAAGCACCAAGAGGGAGCTCAAC
13 L E Q R I L Q V L T E A G S P V K L A Q L V K E C Q A P K R E L N
701 CAAGTCTCTACCGAATGAAAAAGGAGTTGAAAGTCTCCCTCACATCCCTGCCACCTGGTGCTTGGGCGGACTGATCCTGAAGGCGAGGGTCTGCAG
47 Q V L Y R M K K E L K V S L T S P A T W C L G G T D P E G E G P A
801 AGCTGGCCTGTCCAGCCCTGCCGAGAGGCCAGCAACATGCAGCTACAATTCAGAGACCCCTGGCCCTCAGTTCAGCCAACAACGGGAGGAAGACAT
80 E L A L S S P A E R P Q Q H A A T I P E T P G P Q F S Q Q R E E D I
901 CTACAGGTTTCTCAAAGACAATGGTCCCAGAGGGCCCTGGTCATCGCCAAGCACTGGGAATGAGGACAGCAAAAGATGTGAACCGAGACTGTACAGG
113 Y R F L K D N G P Q R A L V I A Q A L G M R T A K D V N R D L Y R
1001 ATGAAGAGCAGGCACCTTCTGGACATGGATGAGCAGTCCAAAGCATGGACGATTTACCGCCAGAAAGATTCTGGAAGAAGAGCAAAAGTCAAGCTCAATTA
147 M K S R H L L D M D E Q S K A W T I Y R P E D S G R R A K S A S I
1101 TTTACAGCACAATCCAATCAACATGATCTGCCAGAATGGACCAACAGCTGGATTTCCATTCGAAACTCCGAAGCCATCCAGATTGGACAGCGGAACAT
180 I Y Q H N P I N M I C Q N G P N S W I S I A N S E A I Q I G H G N I
1201 CATTACAAGACAGACAGTCTCCAGGGAGGACGGTTCCGCCGGTCCACGCCACCTCCCTTCAATGGCACCAGGTGATTCCTCAACTGGGGGACCCTAGTT
213 I T R Q T V S R E D G S A G P R H L P S M A P G D S S T W G T L V
1301 GATCCCTGGGGGCCCCAGGACATCCACATGGAGCGGTCCATACTGAGACGGGTGCAGCTGGGACACAGCAATGAGATGAGGCTCCACGGCGTCCCGTCCG
247 D P W G P Q D I H M E R S I L R R V Q L G H S N E M R L H G V P S

XcmI (1410) NgoMI (1450) HindIII (1460) EcoRI (1478)
NaeI (1450)
1401 AGGGCCCTGCCACATCCCCCTGGCAGCCCCAGTCTCTGCCACTGCTGCCGCCCAGAAGCTTCGTTTGAAGCAAGAATCCAGTCCAGGAACTCA
280 E G P A H I P P G S P P V S A T A A G P E A S F E A R I P S P G T H
1501 CCCTGAGGGGGAAGCGCCAGAGAATCCACATGAAATCGTGCTTCTCGAGGACGCCACCATCGGCAACAGCAACAAAATGTCTATCAGCCAGGGGTG
313 P E G E A A Q R I H M K S C F L E D A T I G N S N K M S I S P G V
1601 GCTGGCCAGGAGGAGTGCAGGGTCTGGAGAGGGGGAGCCAGGGGAGGACGCGAGTCTGTCGTCGCCGAGACACACAATCCAGAAGTCACTTTCTCGAG
347 A G P G G V A G S G E G E P G E D A G R R P A D T Q S R S H F P R
1701 ACATTGGTCAGCCATCACTCCAGCCACTCGAAGCTCACCCCAAGCTGGAAGACTATGACTCTTGGAAAACAGGAGTACAAAAGCTGCAGAAGGCAGCCA
380 D I G Q P I T P S H S K L T P K L E T M T L G N R S H K A A E G S H

NheI (1867)
Eco72I (1862)
ApaI (1851) BbrPI (1862) MscI (1873)
1801 CTATGTGGATGAAGCCTCACACGAGGGGAGCTGGTGGGAGGTGGGATTTAGTGACAGCCTCACGTGCTAGCTGGCCAGACATGATAAGATACATTGAT
413 Y V D E A S H E G S W W G G G I •
1901 GAGTTTGGACAAACCACAACACTAGAATGCAGTGAATAAATGCTTTATTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATA

HpaI (2005) MfeI (2016)
2001 AACCAAGTTAAACAACAATTGCATTCTTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAATGTGGTAT

EcoRI (2101)
2101 GGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTG
2201 TTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGATTTTCCCAAGTTTGAAGTCTTCTCATTCTTTAT

SspI (2340) SmaI (2354)
2301 GTTTTAAATGCACTGACCTCCACATTCCTTTTATGTAATAATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCA
2401 GAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGA

2501 GCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTATCTCAATGAGCACAAAGCAGTCAGG
 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

BstXI (2644)

2601 AGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATG
 111 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

StuI (2779)
Eco147I (2779)

2701 GTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAG
 77 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 V A S

2801 AGATGATCTCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGTGTTGCTCCTATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTC
 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

BspHI (2929) VspI (2987)
AseI (2987)

2901 CAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAA
 11 L D Q Q S I N F T K M

3001 ACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAAT

SpeI (3142)

3101 GGGGCGGAGTTGTTACGACATTTTGAAAGTCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGTGGAGACTTGAAATCCCCGT

SnaBI (3270)
Eco105I (3270)

3200 GAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGT

NdeI (3375)

3300 CCCATAAGGTCATGTACTGGCATAATGCCAGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGC

3400 CAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAATGGG

SdaI (3553) PacI (3561) BspLU11I (3571)

3500 CGGGGTCGTTGGGCGGTGAGCCAGCGGGCCATTTACCGTAAGTTATGTAACGCCCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAG
 3598 GCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAA

3698 ACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGTCCCTCGTGCCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCCTT

ApaLI (3885)

3798 TCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCC

3898 CCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA

3998 GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCT

4098 GCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATT

4198 ACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTAAAGGGATTTTGGTCATGG

EagI (4321) NotI (4320)

PacI (4301) SwaI (4310)

4298 CTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCT

4398 CTCCATCAAAAACAAAACGAAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA