



PvuI (7)
SgfI (6)
MfeI (82) **EcoNI (96)**

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
 101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203)
HindIII (245) **EcoNI (287)**

201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGCC
 301 GCCATCCACGCGGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) **NgoMI (441)** **NaeI (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGGCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)

KasI (535)
BstEII (555) **AgeI (552)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGTACCATGAAAAACATGTTCTTTCAGTCGTCATGCTGACCTG
 601 CATTTCCTGCTAATATCTGTTTCTGTGAGTTATGCGCCGAAAGAAAATTTTCTAGAAGCTATCCTTGTGATGAGAAAAAGCAAATGACTCAGTTATT
 130 I F L L I S G S C E L C A E E N F S R S Y P C D E K K Q N D S V I

SalI (716)

701 GCAGAGTGCAGCAATCGTGCAGTACAGGAAGTTCCCAACCGTGGGCAAATATGTGACAGAAGTACCTGTCTGATAATTTTATCAGACACATAACGA
 470 A E C S N R R L Q E V P Q T V G K Y V T E L D L S D N F I T H I T

BsrGI (858) **Bst1107I (884)**

801 ATGAATCATTCAAGGGCTGCAAAATCTCACTAAAATAAATCTAAACCACAACCCCAATGTACAGCACCAGAACGAAATCCCGGTATACAATCAAATGG
 80 N E S F Q G L Q N L T K I N L N H N P N V Q H Q N G N P G I Q S N G
 901 CTTGAATATCACAGACGGGCATTCTCAACCTAAAAACCTAAGGGAGTTACTGCTTGAAGCAACAGTTACCCCAATACCTCTGGTTTGCAGAG
 113 L N I T D G A F L N L K N L R E L L L E D N Q L P Q I P S G L P E
 1001 TCTTTGACAGAAGTCTAGTCTAATCAAAACAATATATACAACATAACTAAAGAGGGCATTTCAGACTTATAAACTTAAAAATCTCTATTTGGCCTGGA
 147 S L T E L S L I Q N N I Y N I T K E G I S R L I N L K N L Y L A W
 1101 ACTGCTATTTTAAACAAAGTTTGGCAGAAAACTAACATAGAAGATGGAGTATTTGAAACGCTGACAAATTTGGAGTTGCTATCACTATCTTCAATCTCT
 180 N C Y F N K V C E K T N I E D G V F E T L T N L E L L S L S F N S L
 1201 TTCACATGTGCCACCAAAGTCCCAAGCTCCCTACGAACTTTTCTGAGCAACACCCAGATCAATACATTAGTGAAGAAGATTTCAAGGGATTGATA
 213 S H V P P K L P S S L R K L F L S N T Q I K Y I S E E D F K G L I
 1301 AATTTAATTAAGCTTAAAGCGGAAGTCCGAGGTCTCAATGCCCAATTTCCATTCGCTGCTGATGGTGGTGCCTCAATTAATATAGATC
 247 N L T L L D L S G N C P R C F N A P F P C V P C D G G A S I N I D
 1401 GTTTTGTCTTTCAAACTTGACCAACTTCGATACCTAACTCTAGCACTCCCTCAGGAAGATTAATGCTGCCTGGTTAAAAATATGCCTCATCT
 280 R F A F Q N L T Q L R Y L N L S S T S L R K I N A A W F K N M P H L

EcoRI (1516)

1501 GAAGTGCTGGATCTGAATCAACTATTTAGTGGGAGAATAGCCTCTGGGGCATTTTTAAAGATGCTGCCCGCTTAGAAATACTTGACTTGCTTTTT
 313 K V L D L E F N Y L V G E I A S G A F L T M L P R L E I L D L S F
 1601 AACTATATAAAGGGAGTTATCCACAGCATATTAATATTTCCAGAACTTCTCTAACTTTTGTCTCTACGGGCATTGCAATTAAGAGGTTATGTGTTCC
 347 N Y I K G S Y P Q H I N I S R N F S K L L S L R A L H L R G Y V F

ClaI (1786)

1701 AGGAACTCAGAGAAGATGATTTCCAGCCCTGATGCGAGCTTCAAACCTATCGACTATCAACTGGGTATTAATTTTATAAGCAAATCGATTTCAAAC
 380 Q E L R E D D F Q P L M Q L P N L S T I N L G I N F I K Q I D F K L
 1801 TTTCAAATTTTCTCAACTGGAATATTTACTTGTGAGAAAACAGAAATATCACCGTTGGTAAAAGATACCCGGCAGAGTTATGCAATAGTTCCTCT
 413 F Q N F S N L E I I Y L S E N R I S P L V K D T R Q S Y A N S S S

BstBI (1953) **Bsp119I (1953)**

BspEI (1913)
AsuII (1953) **DraIII (1991)**

1901 TTTCAACGTCATATCCGGAACGACGCTCAACAGATTTTGTGAGTTTACCCACATTTCGAATTTTATCATTTCACCCGTCCTTTAATAAAGCCACAATGTG
 447 F Q R H I R K R R S T D F E F D P H S N F Y H F T R P L I K P Q C
 2001 CTGCTTATGGAAAACCTTAGATTTAAGCCTCAACAGTATTTTCTTATTGGCCAAACCAATTTGAAAACTTCTGACATTGCCTGTTTAAATCTGTG
 480 A A Y G K A L D L S L N S I F F I G P N Q F E N L P D I A C L N L S
 2101 TGCAAAATAGCAATGCTCAAGTGTAAAGTGAAGTGAATTTTCCAGCATTCTCATGTCAAATATTTGGATTTGACAAACAATAGACTAGACTTTGATAAT
 513 A N S N A Q V L S G T E F S A I P H V K Y L D L T N N R L D F D N

BglIII (2238)

2201 GCTAGTGCTTACTGAATTGTCCGACTTGAAGTTCTAGATCTCAGCTATAATTCACACTATTTTCAAGATAGCAGGCGTAACACATCATCTAGAATTTA
 547 A S A L T E L S D L E V L D L S Y N S H Y F R I A G V T H H L E F
 2301 TTCAAATTTTCAAAATCTAAAAGTTTAACTTGGCCACAACAACATTTATACTTTAAGATAAGTAACTGGAAAGCAAGTCCCTGGTGAAT
 580 I Q N F T N L K V L N L S H N N I Y T L T D K Y N L E S K S L V E L
 2401 AGTTTTAGTGGCAATCGCTTGCATTTTGTGGAATGATGATGACAACAGTATATCTCCATTTTCAAAGGTTCTCAAGAACTGACACGCTGCGATTTA
 613 V F S G N R L D I L W N D D D N R Y I S I F K G L K N L T R L D L
 2501 TCCCTTAATAGGCTCAAGCACATCCAAATGAAGCATTCTTAATTTGCCAGCGAGTCTCACTGAACTACATATAAATGATAATATGTTAAAGTTTTTTA
 647 S L N R L K H I P N E A F L N L P A S L T E L H I N D N M L K F F

XhoI (2629)

2601 ACTGGACATTACTCCAGCAGTTTCTCGTCTCGAGTTGCTTACTGAGTGGAAACAACACTCTTTTAACTGATAGCCTATCTGACTTTACATCTTC
 680 N W T L L Q Q F P R L E L L D L R G N K L L F L T D S L S D F T S S
 2701 CCTTCGACACTGCTGCTGAGTCATAACAGGATTTCCACCTACCCTCTGGCTTTCTTCTGAAGTCAGTAGTCTGAAGCACCTCGATTTAAGTTCCAAT
 713 L R T L L L S H N R I S H L P S G F L S E V S S L K H L D L S S N

2801 CTGCTAAAAACAATAACAAATCCGCACTTGAACCTAAGACCACCACCAATTATCTATGTTGGAACCTACACGGAAACCCCTTTGAATGCACCTGTGACA
747▶ L L K T I N K S A L E T K T T T K L S M L E L H G N P F E C T C D

BsiBI (2923)
BsaBI (2923)

2901 TTGGAGATTTCCGAAGATGGATGGATGAACATCTGAATGTCAAATCCAGACTGGTAGATGTCATTTGTGCCAGTCTGGGGATCAAAGAGGGAAGAG
780▶ I G D F R R W M D E H L N V K I P R L V D V I C A S P G D Q R G K S

PstI (3041) **NcoI (3080)**

3001 TATTGTGAGTCTGGAGCTAAACAATTGTGTTTACAGATGTCAGTGCAGTATATTATTTTTCTTACGTTCTTTATCACACCATGGTTATGTTGGCTGCC
813▶ I V S L E L T T C V S D V T A V I L F F F T F F I T T M V M L A A

3101 CTGGCTCACCATTTGTTTACTGGGATGTTGGTTTATATAATGTGTGTTAGCTAAGGTAAGGCTACAGGTCTCTTCCACATCCCAAACCTTCT
847▶ L A H H L F Y W D V W F I Y N V C L A K V K G Y R S L S T S Q T F

Psp1406I (3295)

3201 ATGATGCTTACATTTCTTATGACACCAAAGATGCCTCTGTTACTGACTGGGTGATAAATGAGCTGCGCTACCACCTTGAAGAGAGCCGAGACAAAACGT
880▶ Y D A Y I S Y D T K D A S V T D W V I N E L R Y H L E E S R D K N V

XmaI (3330)

SmaI (3330)

SmaI (3326) **MscI (3338)**

EcoO109I (3326) **BalI (3338)**

3301 TCTCCTTTGTCTAGAGGAGAGGGATTGGGACCCGGGATTGGCCATCATCGACAACCTCATGCAGAGCATCAACCAAGCAAGAAAACAGTATTTGTTTTA
913▶ L L C L E E R D W D P G L A I I D N L M Q S I N Q S K K T V F V L

3401 ACCAAAAAATATGCAAAAAGCTGGAACCTTAAACAGCTTTTACTTGGCTTTGCAGAGGCTAATGGATGAGAATGGATGATTATTTTATCCTGC
947▶ T K K Y A K S W N F K T A F Y L A L Q R L M D E N M D V I I F I L

3501 TGGAGCCAGTGTACAGCATTCTCAGTATTTGAGGCTACGGCAGCGGATCTGTAAGAGCTCCATCCTCCAGTGGCCTGACAACCCGAAGGCAGAAGGCTT
980▶ L E P V L Q H S Q Y L R L R Q R I C K S S I L Q W P D N P K A E G L

3601 GTTTTGGCAAACCTCTGAGAAATGTGGCTTGTACTGAAAATGATTACGGTATAACAATATGTATGTGCGATTCCATTAAGCAATACTAAGTACGTTAAGT
1013▶ F W Q T L R N V V L T E N D S R Y N N M Y V D S I K Q Y •

MscI (3709)

BalI (3709)

NheI (3703)

3701 CATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATG

HpaI (3841) **MfeI (3852)**

3801 CTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACCAAGTTAACCAACAACATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGT

EcoRI (3937)

3901 TTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCAAAATACAGCATAGCAAACCTTAACTCCAATCAAGCCTCTACTTGAATCCTTT

4001 TCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCGAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTAT

SwaI (4190)

4101 TTTCCAAGGTTTGAAGTACTCTTCATTTCTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAAATATTTAAATAC

EcoO109I (4251)

4201 ATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAA

4301 GGAACCTTAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAG

141▶ • N R T Y K L P I L E E I T T K V L

BstXI (4480)

4401 CTTGCCATTCTCAATGAGCACAAGCAGTCAAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCC

123▶ 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 V V R I S R D

4501 ACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTACGACAGACAG

89▶ 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 I A E A C V T

StuI (4615)

Eco147I (4615)

4601 TGACCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTGTCTGTTGCTCTCATAGAG

56▶ 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 H K N D E Y L

BspHI (4765)

4701 CATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTTCATGATGGCCCTCTATAGTGAGTCGTATTATAC

23▶ M T I K E T A V E V L E L D Q Q S I N F T K M

4801 TATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGAC

SpeI (4978)

4900 CTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCC

4999 ATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCC

SnaBI (5106)

Eco105I (5106)

5099 ATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAG

NdeI (5211)

5199 GGGGCGTACTTGGCATATGATACACTTGTACTGCTGCAAGTGGGCGGTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGT

PstI (5390)

SdaI (5389)

5299 TACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGCTGTTGGCGGTCAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCCTGCAG

PacI (5397)

5397 **G TT AA TTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGA**
5496 **GCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCGCTCTCCT**
5596 **GTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGT**

ApaLI (5721)

5696 **AGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCCAGCCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAG**
5796 **ACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTAC**
5896 **GGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCG**
5996 **CTGGTAGCGGTGGTTTTTTTGGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCA**

EagI (6157)

PacI (6137) SwaI (6146) **NotI (6156)**

6096 **GTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTG**
6195 **TGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTG**
6295 **CAGTGCCAGAACATTTCTCTATCGAA**