



PvuI (7)
SgfI (6)
MfeI (82)

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
 101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203)
HindIII (245)
Bsu36I (291)

201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGCC
 301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

KasI (535)
AgeI (552)
SphI (568)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTA
 601 TTGGGGTTCATCATCAGCCTCTCCAAGGAAGAATCCTCCAATCAGGCTTCTGTCTTGTGACCGCAATGGTATCTGCAAGGGCAGCTCAGGATCTTTAA
 11▶ L G V I I S L S K E E S S N Q A S L S C D R N G I C K G S S G S L

Bsu36I (709)

701 ACTCCATTCCTCAGGGCTCACAGAAGCTGAAAAAGCCTTGACCTGTCCAACAACAGGATCACCTACATTAGCAACAGTGACCTACAGAGGTGTGTGAA
 44▶ N S I P S G L T E A V K S L D L S N N R I T Y I S N S D L Q R C V N
 801 CCTCCAGGCTCTGGTGTGACATCCAATGGAATTAACACAATAGAGGAAAGATTCTTTTCTCCCTGGGCAGTCTTGAACATTTAGACTTATCTATAAT
 77▶ L Q A L V L T S N G I N T I E E D S F S S L G S L E H L D L S Y N

AvrII (983)

901 TACTTATCTAATTTATCGTCTTCTGGTCAAGCCCTTTCTTCTTAACTTCTTAACTTACTGGGAAATCCTTACAAAACCTAGGGGAAACATCTC
 111▶ Y L S N L S S S W F K P L S S L T F L N L L G N P Y K T L G E T S
 1001 TTTTTCTCATCTCAGAAAATTGCAAATCCTGAGAGTGGGAAATATGGACACCTTCACTAAGATTCAAAGAAAAGATTTTGTGGACTTACCTTCCTTGA
 144▶ L F S H L T K L Q I L R V G N M D T F T K I Q R K D F A G L T F L E

BglII (1121)

1101 GGAACCTGAGATTGATGCTTACAGATCTACAGAGCTATGAGCCAAAAAGTTGAAAGTCAATTCAGAATGTAAGTCACTGATCCTTCATATGAAGCAGCAT
 177▶ E L E I D A S D L Q S Y E P K S L K S I Q N V S H L I L H M K Q H
 1201 ATTTACTGCTGGAGATTTTGTAGATGTTACAAGTCCGTGGAATGTTTGAAGTGGAGTACTGATTTGGACACTTTCCATTTTTGAGAATATCCA
 211▶ I L L L E I F V D V T S S V E C L E R D T D L D T F H F S E L S
 1301 CTGGTGAACAAATTCATTGATTAATAAGTTTACATTTAGAAAATGTGAAAATCACCGATGAAAGTTTGTTCAGGTTATGAAACTTTTGAATCAGATTTCC
 244▶ T G E T N S L I K K F T F R N V K I T D E S L F Q V M K L L N Q I S

Psp1406I

1401 TGGATTGTTAGAATTAGAGTTTGTGACTGTACCCTTAATGGAGTTGGTAATTTAGAGCATCTGATAATGACAGAGTTATAGATCCAGGTAAGTGGAA
 277▶ G L L E L E F D D C T L N G V G N F R A S D N D R V I D P G K V E

HpaI (1502)
BspEI (1510)

1501 ACGTTAAACATCCGGAGGCTGCATATCCAAAGTTTTACTTATTTTATGATCTGAGCACTTTATATTCACCTACAGAAAGAGTAAAAGAATCACAGTAG
 311▶ T L T I R R L H I P R F Y L F Y D L S T L Y S L T E R V K R I T V
 1601 AAAACAGTAAAGTTTTCTGGTTCCTTGTCTTACATTTTACAACATTTAAATCATTAGAATACTGGATCTCAGTGAATAATTTGATGGTTGAAGAATACTT
 344▶ E N S K V F L V P C L L S Q H L K S L E Y L D L S E N L M V E E Y L
 1701 GAAAAATTCAGCCTGTGAGGATGCTGGCCCTCTTACAAAATTTAATTTAAGGCAAAATCATTGGCATCATTGAAAAAACCGGAGAGACTTTGCTC
 377▶ K N S A C E D A W P S L Q T L I L R Q N H L A S L E K T G E T L L

EcoRV (1824)
SspI (1885)

1801 ACTCTGAAAACTTGACTAACATTGATATCAGTAAGAATAGTTTTATTCTATGCTGAACTTGTGAGTGGCCAGAAAAGATGAAATTTGAACTTAT
 411▶ T L K N L T N I D I S K N S F H S M P E T C Q W P E K M K Y L N L
 1901 CCAGCACAGCAATACACAGTGAACAGGCTGCATTCCCAAGACTGGAATTTAGATGTTAGCAACAACAATCTCAATTTATTTCTTTGAAATTTGCC
 444▶ S S T R I H S V T G C I P K T L E I L D V S N N N L N L F S L N L P

SpeI (2072)

2001 GCAACTCAAGAACTTTATATTTCCAGAAATAAGTTGATGACTCTACCAGATGCCTCCCTCTTACCCATGTTACTAGTATTGAAAATCAGTAGGAATGCA
 477▶ Q L K E L Y I S R N K L M T L P D A S L L P M L L V L K I S R N A

EcoRI (2187)

2101 ATAACACGTTTTCTAAGGAGCAACTTGACTCATTTCACACACTGAAGACTTTGGAAGCTGGTGGCAATAACTTCATTTGCTCCTGTGAATTCCTCTCCT
 511▶ I T T F S K E Q L D S F H T L K T L E A G G N N F I C S C E F L S
 2201 TCACTCAGGAGCAGCAAGCACTGGCCAAAGTCTTGATTGATTGGCCAGCAAAATACCTGTGACTCTCCATCCATGTGCGTGGCCAGCAGGTTGAGGA
 544▶ F T Q E Q A L A K V L I D W P A N Y L C D S P S H V R G Q Q V Q D

EcoO109I (2386)

2301 TGTCCGCCTCTCGGTGTGCGAATGTCACAGGACAGCACTGGTGTCTGGCATGTGCTGTGCTCTGTTCTGCTGATCCTGCTCACGGGGGCTCTGTGCCAC
 577▶ V R L S V S E C H R T A L V S G M C C A L F L L I L L T G V L C H

NcoI (2405)
NsiI (2494)

2401 CGTTTCCATGGCCTGTGGTATATGAAAATGATGTGGCCCTGGCTCCAGGCCAAAAGGAAAGCCAGGAAAGCTCCAGCAGGAACATCTGCTATGATGCAT
 611▶ R F H G L W Y M K M M W A W L Q A K R K P R K A P S R N I C Y D A

BsrBI (2514)

2501 TTGTTTCTTACAGTGAGCGGGATGCCTACTGGGTGGAGAACCCTTATGGTCCAGGAGCTGGAGAACCCTCAATCCCCCTTCAAGTTGTGTCTTCATAAGCG
 644▶ F V S Y S E R D A Y W V E N L M V Q E L E N F N P P F K L C L H K R
 2601 GGACTTCATTCTGGCAAGTGGATCATTGACAATATCATTGACTCCATTGAAAAGAGCCACAAAACCTGCTTTGTGCTTTCTGAAAACCTTTGTGAAGAGT
 677▶ D F I P G K W I I D N I I D S I E K S H K T V F V L S E N F V K S
 2701 GAGTGGTGAAGTATGAACTGGACTTCTCCATTTCCGCTTTTTGATGAGAACAATGATGCTGCCATTTCTATTCTTCTGGAGCCATTGAGAAAAAG
 711▶ E W C K Y E L D F S H F R L F D E N N D A A I L I L L E P I E K K

Eco47III (2809) **NcoI (2863)**
 2801 CCATTCCCAGCGCTTCTGCAAGCTGCGGAAGATAATGAACACCAAGACCTACCTGGAGTGGCCCATGGACGAGGCTCAGCGGAAGGATTTGGGTAAA
 744▶ A I P Q R F C K L R K I M N T K T Y L E W P M D E A Q R E G F W V N

BamHI (2922)
BspEI (2919)
 2901 TCTGAGAGCTGCGATAAAGTCCGGATCCTATCCCTATGATGTGCCAGACTATGCTGGCTATCCATATGATGTTCTGATTATGCTGGATACCCCTATGAT
 777▶ L R A A I K S G S Y P Y D V P D Y A G Y P Y D V P D Y A G Y P Y D

NheI (3019)
 3001 GTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATT
 811▶ V P D Y A •

HpaI (3157) **MfeI (3168)**
 3101 TGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAAGTTAACACAACAATTGCATTCTTTATGTTTCAGGTTCCAGG

EcoRI (3253)
 3201 GGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCC

3301 TCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGT

SspI (3492)
 3401 TTAAGATATAGTGTATTTTCCCAAGTTTGAAC TAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAAATATTC A

SwaI (3506) **EcoO109I (3567)**
 3501 GAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTT

3601 GGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAA
 141▶ • N R T Y K L P I L E E I

SacI (3767)
 3701 TGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCAC
 128▶ 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 V V

3801 CCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATG
 95▶ 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 I

StuI (3931)
 3901 GCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCT
 61▶ 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 H K

BspHI (4081)
 4001 TGGTGCCTCATAGAGCATGGTGTCTTCTCAGTGGGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATA
 28▶ 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

XmnI (4073)
 4101 GTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAAACGAGC

AseI (4139) **SacI (4196)**

4201 TCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAG

4300 TCAAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGTATCCACGCCATTGATGTA CTGCCAAAACCGCATC

SpeI (4294)

SnaBI (4422)
 4400 ATCATGGTAATAGCGATGACTAATCGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTA CTGGCATAATGCCAGGCGGGCCATTTACCGT

4500 CATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAA

4600 AGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGGCGGGTCTGTTGGGCGT CAGCCAGGCGGGCCATTTACCGTAA GTTAT

PstI (4706) **SdaI (4705)** **PacI (4713)** **BspLU11I (4723)**
 4700 GTAACGCCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTC

4798 CGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCTTTCCCTGGAAGCTCCC

4898 TCGTGGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTA

ApaLI (5037)
 4998 TCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTT CAGCCGACCCTGCGCCTTATCCGGTAACTATCGTCTTGAG

5098 TCCAAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGT

5198 GGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGG

5298 CAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACG

EagI (5473) **PacI (5453)** **SwaI (5462)** **NotI (5472)**
 5398 GGGTCTGACGCTCAGTGGAACGAAAACCTACGTTAAGGGATTTTGGTCTGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAAATATCTTTATT

5498 TTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTC

5598 CCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA