



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

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
 101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACGCGCCCGCGCCCTACCTGAGGCC
 301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
NaeI (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

KasI (535)
AgeI (552)
BspHI (560)

501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTCATCATGACTAAAGAGAATCTTAGCATCTTCCATTTGCCAT
 601 CATCTTCATATTAATACTTGAGATCAGAATTC AATTATCTGAGGAAAGTGAAGTTTTAGTTGACAGATCAAAAACAGGTCTCACCCATGTTCCCAAAGAC
 13▶ I F I L I L E I R I Q L S E E S E V L V D R S K T G L T H V P K D

BglII (723)

701 CTATCCTTGGAAACGACAATCTTAGATCTATCACAAAACCTCTATCTCTGAGCTTCAGACTTCTGACATCCTCTCACTATCAAAGCTGAGGGTTTTTCATAA
 47▶ L S L E T T I L D L S Q N S I S E L Q T S D I L S L S K L R V F I
 801 TTTCTCATAATAGAATACAGTATCTTGATGTCAGTGTTCATTAATCAACCAGGAAGTGAATACTTGGATTTGTCCACAACAAGTTGGAGAAGATTC
 80▶ I S H N R I Q Y L D V S V F K F N Q E L E Y L D L S H N K L E K I S

Ppu10I (944)
NsiI (944)

901 GTGCCACCCTATGCTGAACCTCAAGCCTTGGACCTCTCATTAAATGCATTGATGCTGACCTGCCATATGCCAAGAGTTGGCAGTATGTTTCAACTAGAA
 113▶ C H P M L N L K H L D L S F N A F D A L P I C Q E F G S M F Q L E
 1001 TTTCTGGGTTGAGTGCCACACAGTTACAAAAATCCAGTGTGTGCCAATCGCTCATTGATATCGGTAAGTTTTACTTGTCTTAGGAGACTCTTACG
 147▶ F L G L S A T Q L Q K S S V L P I A H L H I G K V L L V L G D S Y

BbsI (1108)

1101 GGGAAAGAGAAGACCTGAGAGCCTTCAAGACCTTAACACACAGAGTCTGCACATTGTTTATCCCCCAGGAAAGAAATTTTATTTTATGTTGGACGTGTC
 180▶ G E R E D P E S L Q D L N T Q S L H I V Y P P G K E F H F M L D V S
 1201 AGTCAGCACCGCAGTAAATCTGGAAGTGTCCAATATCAGATGTGTGCTGGATGCTAACGGATGTCATCACTTCCAAAATGTTCTATTGAAACTTCAAAG
 213▶ V S T A V N L E L S N I R C V L D A N G C H H F Q N V L L K L Q K

XmnI (1347)

1301 AACTCAAAGTTATCCAACCTGACTTTGAACAACATTGAAACCCTTGGAAATCTTTTATCACCACCCTCCAGTTTGTCTGGCA TACAAGCATCGAGTATT
 247▶ N S K L S N L T L N N I E T T W N S F I T T L Q F V W H T S I E Y

StuI (1472)

1401 TCTCCATTTCCAGTGTGAAACTACAAGTCCAGCTGGACTTCAGAGATTTTGATTATTCTGACACGTCCTGAAAGCCTTGTCTCTACACCAAGTTGTCAG
 280▶ F S I S S V K L Q G Q L D F R D F D Y S D T S L K A L S L H Q V V S
 1501 TGAGGTGTTTCAGTTCCCAAAAGTTACATATAAAATCTTTCAAATGAAACATTGATCTCACAGTGTCTGCCACACACATGGTCCACATGGTT
 313▶ E V F S F P Q S Y I Y K I F S N M N I Q Y L T V S A T H M V H M V
 1601 TGCCCATCCCAAATAGCCCATTTCTATATTTGGATTTTCCAATAATGCCTTAACAGACATGGTTTTAAAAATTTGCAAACCTGGCTAATTTGAACA
 347▶ C P S Q I S P F L Y L D F S N N A L T D M V F K N C A N L A N L N
 1701 CACTCAGTTTACAATGAATCAGTTAAAAGAAGTGTGAAATGTCATCCATGACCAAAGAAATGCGTCTCTACAGCAATGGATGTTAGCCAGAATAC
 380▶ T L S L Q M N Q L K E L V A N V N I H M T K E M Q S L Q Q L D V S Q N T
 1801 CCTGAGGTATGATGAAAATGAGGAAAGTTGCACTTGGACCGGAAGTTTATTAAGTTTAAATTTATCTTCAAATATACTCACTGACTCTGTTTTTTCAGATG
 413▶ L R Y D E N E G S C T W T G S L L S L N L S S N I L T D S V F R C
 1901 TTACCTCCAGGATCAAGGTTCTTGATCTTACAATAACAGAATAAGGAGCATCCCTAAGGATGTCGCCATCTGGAAGCTCTGCAAGAACTCAATGTTG
 447▶ L P P R I K V L D L H N N R I R S I P K D V A H L E A L Q E L N V
 2001 CTTCAATTTCTTAGCTCACCTGCCTGGATGTGGTTCCCTTAGCAGCCTTCCATTCTGATCATTGACTATAATTC AATTTCCAACCCATCAGCTGACTT
 480▶ A S N S L A H L P G C G S F S S L S I L I D Y N S I S N P S A D F

BspLUII (2158)
EcoO109I (2122)
BsrGI (2155)

2101 CTTCCAGAGCTGCCAGAAGATTAGTCCCTCAAAGCAGGGAACAATCCATTCCAATGTACATGTGAGCTAAGAGACTTCACCAAAGTCTAGGTCAAGTA
 513▶ F Q S C Q K I R S L K A G N N P F Q C T C E L R D F I Q S L G Q V
 2201 TCGAGTGACGTGGTAGAGAGTTGGCCTGATTCTTACGAGTGTGAGTATCCAGAAAGCTATAAGGGGACTCTGCTCAAGGACTTCCGTGTATCTGAATTAT
 547▶ S S D V V E S W P D S Y E C E Y P E S Y K G T L L K D F R V S E L
 2301 CCTGCAACACAGCTCTGCTGATTGTCCATCGGAGTCACTGGGCTGGCACTGGCTTACCATGACCGGCCTCTGTGTCTACTTTGATCTGCCCTGGTA
 580▶ S C N T A L L I V T I G V T G L A L A L T M T G L C V Y F D L P W Y
 2401 TCTCAGGATGCTGTGTCAGTGGACCCAGACTCGGCGCAGGGCTAGGAATGTACCTTAGAAGAAGTCCAAAGAAGTCCAGTTCCATGCTTCCATTTCA
 613▶ L R M L C Q W T Q T R R R A R N V P L E E L Q R T L Q F H A F I S
 2501 TATAGTGGGCATGATTCTGCTTGGGTAAGAATGAATTAACCAAAATGTAGAAAAAGAGGTATAAAGATTTGTCTCCATGAGAGAACTTTGTTCCCTG
 647▶ Y S G H D S A W V K N E L L P N V E K E G I K I C L H E R N F V P
 2601 GCAAGAGCATGGAATAATCATAAACTGCATTGAGAAAAGCTACAAGTCCATCTTTGTTTGTCTCCCAACTTTGTCCAGAGCGAGTGGTGCCACTA
 680▶ G K S I M E N I I N C I E K S Y K S I F V L S P N F V G S E W T G C H Y
 2701 TGAAGTCTACTTTGCCACCACAACCTCTTCCATGAAGGGTCTGATACTTAATCCTGATCTTGTGGATTCCATTCCACAGTATTCCATCCCCAGCAGC
 713▶ E L Y F A H H N L F H E G S D N L I L I L L D S I P Q Y S I P S S
 2801 TATCAAACTCAAAGCTCTCATGGCACAGCAACTTATTTGGAATGGCCAAAGGAGAAGAGCAAACATGGACTTTTTTGGGCTAATCTGAGAGCATCCA
 747▶ Y H K L K A L M A Q R T Y L E W P K E K S K H G L F W A N L R A S

MscI (2986)

BglII (2945)

NheI (2980)

2901 TTAATATTAATTTGATGGAGAAAGCAGAAGAAATAAGTTACACACAGATCTAAAAATATTCTCTGCTGCTTTTGTGAAAGCTAGCTGGCCAGACATGAT
780 I N I K L M E K A E E I S Y T Q I •
3001 AAGATACATTGATGAGTTTGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATT

HpaI (3118)

3101 ATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCT
3201 ACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAG
3301 GCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCAAGGTTTGAAC TAGCTC

SwaI (3467)

3401 TTCATTTCTTTATGTTTTAAATGCAGTACCTCCACATTCCTTTTTAGTAAAAATTCAGAATAATTTAAATACATCATTGCAATGAAAAATAATGT

EcoO109I (3528)

3501 TTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGAC

3601 AGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCA
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

SacI (3728)

3701 CAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCT
115 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 V E D S Y P H R

StuI (3892)

3801 GACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCA
82 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 V R G I Y A E

3901 ATGTGGACAGCAGAGATGATCTCCCGAGTCTGGTCTGATGGCCGCCGACATGGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGA
48 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 M T I K E T A V

BspHI (4042)

BbsI (4038)

XmnI (4034)

4001 CCTCCACCAGTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATG
15 E V L E L D Q Q S I N F T K M

SacI (4157)

4101 ATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCATAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCC

SpeI (4255)

4201 CATTTCGCTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACT

SnaBI (4383)

4300 TGGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGC

4400 CAAGTAGGAAAGTCCATAAGGTACTGTTGACTGGCATAATGCCAGGGGCCATTTACCGTCAATGAGGGGCGTACTTGGCATATGATACA

4500 CTTGATGACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTAT

PstI (4667)

SdaI (4666) PacI (4674)

BspLU11I (4684)

4600 TGACGTCAATGGGCGGGGTCGTTGGGCGGTACAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCC T G C A G G T T A A T T A A G A A C A T G T G A G C A A A
4698 AGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGT

4798 CAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCTGGAAGCTCCTCGTGCGCTCTCTGTCCGACCCTGCCGCTTACCGGAT

4898 ACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCCGCTCAAGCTGGGCTG

ApaLI (4998)

4998 TGTGCACGAACCCCGTTCAGCCGACCGCTGCGCTTATCCGGTAACATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCA

5098 GCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGTACACTAGAAGAACAGTATTTG

5198 GTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCACCGTGGTAGCGGTGTTTTTTGTTG

5298 CAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACTCACGTTAAGGG

EagI (5434)

PacI (5414) SwaI (5423)

NotI (5433)

5398 ATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTTGTGTAATCGTA

5498 ACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAAATAGGCTGTCCCCAGTGCAGGTGCCAGAACATTTCTCTATCGA

5598