



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

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
 101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
 301 GCCATCCACGCGGTTGAGTCGCGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGTCTTTGTTTCGTTT

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

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCATCATGATGGCGGTGCCCGCTGGCTGCGGCTCTGATCCC
1▶ M M A R A R L A A A L I P

SmaI (638)

601 AGCCACGCGCATCCTCTCTGCCTGAGAACCAGAGAGTTGGACCTTGGTACAGGTTGTTCTAACATTAGTTACCAGTGCATGGAGCTGAATCTCTAC
 13▶ A T A I L S C L R T E S W D P C V Q V V P N I S Y Q C M E L N L Y
 701 AAAATCCCGACAACATCCCATATCAACCAAGATGCTGGACCTGAGCTTTAACTACCTGAGACATTTAGGCAGCCATAACTTCTCCAGTTCGAGAAC
 47▶ K I P D N I P I S T K M L D L S F N Y L R H L G S H N F S S F P E
 801 TGCAAGTGTGGATTTATCCAGATGTGAAATTAAGATTATTGAAGACGACACATTTGAGGCGCTAAACCACCTCTCCACCTTGATACTGACGGAAACCC
 80▶ L Q V L D L S R C E I K I I E D D T F Q G L N H L S T L I L T G N P
 901 TATCCAGAGTTTAGCCTGGGAGCCTTTTCTGGCTATCAAGTTTACAGAAGCTGGTGGCGGTGGAGACAAACCTAGTCTCTCTAAATGACTTCCCATT
 113▶ I Q S L A W G A F S G L S S L Q K L V A V E T N L V S L N D F P I
 1001 GGACATCTCAAAAACCTGAAAGAGCTTAATGTGGCTCACAAATTTATCCATTCCTTCAAGTTACCTGAATATTTTTCTAACCTGCCAACCTGGAGCACT
 147▶ G H L K N L K E L N V A H N F I H S F K L P E Y F S N L P N L E H
 1101 TGGATCTTTCTAACACAAAATCCAAAATATTTATTATGAAGATGTGAAAGTTCTACATCAAATGCCCTACTCAACCTCTTTAGATTGTCCTTGAA
 180▶ L D L S N N K I Q N I Y Y E D V K V L H Q M P L L N L S L D L S L N

Acc65I (1222)
BspHI (1286)

1201 CCCTTGAAGCTTTATTGAACCAAGTACCTTTAAAGAAATTAAGCTCAATGGATTGACTCTCGAAGTAATTTTAAACAGTTCCACATGTCATGAAAACCTGT
 213▶ P L D F I E P G T F K E I K L N G L T L R S N F N S S H V M K T C
 1301 ATTCAAGGCTGGCTGGTTTAAAAACCAACCGGCTGGTTTTGGGAGAATTTAAAAATGAAAGGAGTTGCAAAGATTGACAGATCTTCTGGAGGGAC
 247▶ I Q G L A G L K T N R L V L G E F K N E R K L Q R F D R S F L E G

BspEI (1424)

1401 TGTCAACCTGACCAATTGAACAATCCGGATAGCTACTTGGACAAATCTCAGGGGACGATACAGACTTATTTAATTGTTTGGCAAATGTTTCTGTGAT
 280▶ L C N L T I E Q F R I A Y L D K F S G D D T D L F N C L A N V S V I
 1501 TTCTCTGTGAGTATATCTTTAGGAAGCTACAAGCCCTTCTAAAGATTTTATAGTGGCAACACTTAGAAATTTAACTGTGACTTTGACAAGTTTCT
 313▶ S L L S I S L G S L Q A L L K D F R W Q H L E I I N C D F D K F P

XbaI (1692)

1601 GCATTGAAGCTCAGTTCTCTCAAAAAGTTGTTTTACAGACAACAAAGATATAAGCACTTTTACTGAGTTTACAGCTACCAAGCCTTACAGTATCTAGATC
 347▶ A L K L S S L K K F V F T D N K D I S T F T E F Q L P S L Q Y L D
 1701 TCAAAAGAAATCACTTGAGTTTCAAGGGTGTGCTTCTCACACTGATTTTGGGACAACCAACCTGAAGCATTGATCTGAGCTTCAATGATGTCATTAC
 380▶ L K R N H L S F K G C C S H T D F G T T N L K H L D L S F N D V I T
 1801 CTTAGGTTCAAACCTCATGGGCTTAGAGCAACTAGAACACCTGGATTTTACAGCTTCCACTCTGAAACAGATCAATGCTTTTTTACGATTCTCTATCACTC
 413▶ L G S N F M G L E Q L E H L D F Q H S T L K Q I N A F S A F L S L

NcoI (1950)

1901 AGAAACCTCCGCTACCTTGATATTTCTTATACCAACATCCGCATTGTCTTCCATGGCATCTTACTGGCTTAGTCACTGCTGCAACCTTGAAAATGGCAG
 447▶ R N L R Y L D I S Y T N I R I V F H G I F T G L V S L Q T L K M A
 2001 GCAACTCTTTTCAAGAACTTGTCCCTGACATCTTACAGAAGTACTAAGCTTAAACCTTGGACCTCTAAGTGTCAACTGGAACAGGTAGCCCA
 480▶ G N S F Q N N L L P D I F T E L T N L T V L D L S K C Q L E Q V A Q

BspEI (2198)

2101 GACAGATTTCACTCCCTCTAGCCTTCAAGTGTGAATATGAGTCAACAACAACTCTTGTCACTGGATACATTTCTTTATGAACCACTCCACTCGCTC
 513▶ T A F H S L S S L Q V L N M S H N K L L S L D T F L Y E P L H S L

BamHI (2201)
NsiI (2297)

2201 CGGATCCTAGACTGCAGTTTCAACCGTATCATGGCCTCTAAGGAGCAAGAAGTACAGAATTTGCCAAGGAGCCTCACTTGGCTAAATCTTACTCAGAATG
 547▶ R I L D C S F N R I M A S K E Q E L Q N L P R S L T W L N L T Q N
 2301 CATTGCTTGTGTTTGTGAACATCAGAGTTTCTCAGTGGGTCAAGGACAGAGGCAGCTCTTGGTGGGAGCTGAGCAAATGATGTGTGAGAGCCTTT
 580▶ A F A C V C E H Q S F L Q W V K D Q R Q L L V G A E Q M M C A E P L

PvuII (2446)

2401 AGATATGGAGGACATGCCAGTGTCTAGTTTTCAGGAACGCCACTGTGACGTGAGCAAGACGATCATCAGTGTGTCGGTGGTCACTGTGCTCCTGGTGTCT
 613▶ D M E D M P V L S F R N A T C Q L S K T I I S V S V V T V L L V S
 2501 GTGGTAGGGTCTAGTCTACAAGTTCTATTTCCACCTGATGCTTCTTGTGCTGCTGCAAAAAGTATGGCAGGGGCGAGACACCTATGATGCCTTTGTCA
 647▶ V V G V L V Y K F Y F H L M L L A G C K K Y G R G E S T Y D A F V

XhoI (2604)

2601 TCTACTCGAGCCAGGATGAAGACTGGGTGCGGAATGAAGTGGTAAAGAACTTGGAGGAGGGCGTCCCCCTTTTCACTCTGCCTTCACTACAGGGACTT
 680▶ I Y S S Q D E D W V R N E L V K N L E E G V P P F Q L C L H Y R D F

MscI (2711)

2701 TATTCTGGGGTGGCCATCGCCGCAATATCATCCAGGAGGTTTCCACAAAAGCCGTAAGGTTATTGTCGTGGTGTCCAGCACTTTCATCCAGAGCCGA
 713▶ I P G V A I A A N I I Q E G F H K S R K V I V V V S Q H F I Q S R

2801 TGGTGTATCTTCGAGTATGAGATTGCCAGACCTGGCAGTTTCTGAGCAGCCGTGCTGGCATCATCTTCATCGTCTGCAGAAGCTGGAGAAGTCTCTCC
747▶ W C I F E Y E I A Q T W Q F L S S R A G I I F I V L Q K L E K S L

Tth111I (2959)

2901 TGGCGCAGCAGGTGGAGCTCTATCGCCTTCTGAGCAGGAACACCTACCTGGAGTGGGAGGACAGTGTCTTGGGGCGGCATGTCTTCTGGAGAAGACTCAG
780▶ L R Q Q V E L Y R L L S R N T Y L E W E D S V L G R H V F W R R L R

3001 AAAAGCCTTGCTGGCTGGTAAACCCAGAGTCCAGAAGGAACAGCAGATGCAGAAACCAACCCGAAGAAGCGACAACCTCCACCTGAGGAGGAGAATCC
813▶ K A L L A G K P Q S P E G T A D A E T N P Q E A T T S T •

MseI (3114)

3101 CCTGATGTGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAATTTG

HpaI (3246) MfeI (3257)

3201 TGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACCAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGG

EcoRI (3342)

3301 GAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAAT

3401 CCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAG

SapI (3524) SwaI (3595)

3501 TGTATTTTCCAAGGTTTGAAGTACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCTTTTATAGTAAAATTCAGAAAATATTTA

3601 AATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGA

3701 ACAAAGGAACCTTAAATAGAAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTG

141 • N R T Y K L P I L E E I T T K

3801 ACCAGCTTGCCATTCATCTCAATGAGCACAAGCAGTCAAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGCTGACCACCTGATGGATC
124▶ 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 R I S R

3901 TGCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACA
91▶ 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 A E A C

StuI (4020)

4001 GACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTGTTGTCTCA
58▶ 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 N D E

XmnI (4162)

4101 TAGAGCATGGTATCTTCTCAGTGGCGACCTCCACAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCCTATAGTGAGTCGTAT
24▶ 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

AseI (4228)

4201 TATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAAACGAGCTCTGCTTATAT

SpeI (4383)

4301 AGACCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAAGTCCCGTTGATTTACTAGTCAAAACAAACT

4401 CCCATTGACGTCAATGGGGTGGAGACTTGAAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATA

SnaBI (4511)

4501 GCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCAATTGACGTCAA

NdeI (4616)

4601 TAGGGGGCGTACTTGGCATATGATACACTTGTACTGCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAAGTCCCTATTGG

SdaI (4794)

4701 CGTACTATGGGAACATACGTCAATATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCA

PacI (4802) BspLU11I (4812)

4801 GGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGA

4901 GCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGCTTCCCCCTGGAAGCTCCCTCGTGGCTCTCCT

5001 GTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTACGCTGTAGGTATCTCAGTTCGGTGT

ApaLI (5126)

5101 AGGTGCTTCGCTCCAAGTGGGCTGTGTGCACGAACCCCGTTCAGCCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGGTAAG

5201 ACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTAC

5301 GGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCCG

5401 CTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCA

EagI (5562) NotI (5561)

5501 GTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCAATGGCTGTAATTAATTAATTAATCAGCGGCCGCAATAAAAATATCTTTATTTTATTACATCTGT

5601 GTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCGAGTCAAGTGC

5701 AGGTGCCAGAACATTTCTCTATCGAA