



PvuI (7)
SgfI (6)
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACCGGCCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTTTCGCCGCTCCCGCCTGTGGTGCCTCCTGAACCTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTGTTTCGTTT

AgeI (552) **BspHI (561)**
501 TCTGTTTGTGGCCGTTACAGATCCAAGCTGTGACCGGCCCTACCTGAGATCACCGTCCATCATGACTAGCATCTTCCATTTGCCATTATCTTCATGT

601 TAATACTTCAGATCAGAATAACAATTATCTGAAGAAAGTGAATTTTTAGTTGATAGGTCAAAAACGGTCTCATCCAGTTCTCTAAAGACCTATCCCAGAA
13▶ L I L Q I R I Q L S E E S E F L V D R S K N G L I H V P K D L S Q K
701 AACAAATCTTAAATATATCGAAAATATATATCTGAGCTTTGGACTTCTGACATCTTACTGTCAAACTGAGGATTTTGATAATTTCTCATAAT
46▶ T T I L N I S Q N Y I S E L W T S D I L S L S K L R I L I I S H N

EcoRV (815)
801 AGAATCCAGTATCTTGATATCAGTGTTTTCAAATCAACCAGGAATTGGAATACTGGATTTGTCCACAACAAGTTGGTGAAGATTTCTTGCCACCCTA
80▶ R I Q Y L D I S V F K F N Q E L E Y L D L S H N K L V K I S C H P

BstAPI (935)
NsiI (933)
901 CTGTGAACCTCAAGCACTTGACCTGTCAATTAATGCATTTGATGCCCTGCCTATATGCAAAGAGTTTGGCAATATGTCTCAACTAAAATTTCTGGGGTT
113▶ T V N L K H L D L S F N A F D A L P I C K E F G N M S Q L K F L G L
1001 GAGCACCACACTTAGAAAAATCTAGTGTGCTGCCAATTGCTCAATTTGAATATCAGCAAGTCTTGTGGTCTTAGGAGAGACTTATGGGAAAAAGAA
146▶ S T T H L E K S S V L P I A H L N I S K V L L V L G E T Y G E K E

EcoO109I (1107)
Bsu36I (1103) **DraIII (1139)**
1101 GACCTGAGGGCCTTCAAGACTTAACTGAGAGTCTGCACATTGTGTTCCCCACAAACAAAGAATCCATTTTATTTGGATGTGTGAGTCAAGACTG
180▶ D P E G L Q D F N T E S L H I V F P T N K E F H F I L D V S V K T
1201 TAGCAATCTGGAATCTAATATCAATGTGTGCTAGAAGATAACAAATGTTCTTACTTCCTAAGTATTCTGGCGAACTTCAAACAAATCCAAAGTT
213▶ V A N L E L S N I K C V L E D N K C S Y F L S I L A K L Q T N P K L

XmnI (1336) **BamHI (1350)**
1301 ATCAAATCTTACCTTAAACAACATTGAAACAACCTGGAATCTTTTATTAGGATCCTCCAGCTGGTTTGGCATACTGATGGTATTTCTCAATTTCA
246▶ S N L T L N N I E T T W N S F I R I L Q L V W H T T V W Y F S I S

StuI (1461)
1401 AACGTGAAGCTACAGGGTACAGCTGGACTTCAGAGATTTTGATTATTCTGGCACTTCTTGAAGGCCTTGTCTATACACCAAGTTGTCAGCGATGTGTTCCG
280▶ N V K L Q G Q L D F R D F D Y S G T S L K A L S I H Q V V S D V F

BstBI (1531)
1501 GTTTTCCGCAAAGTTATATCTATGAAATCTTTTGAATATGAACATCAAAAATTTTACAGTGTCTGGTACACGCATGGTCCATGCTTTGCCATCCAA
313▶ G F P Q S Y I Y E I F S N M N I K N F T V S G T R M V H M L C P S K
1601 AATTAGCCCGTTCCTGCATTTGGATTTTCCAATAATCTCTTAACAGACACGGTTTTTGAATTTGGGGCACCTTACTGAGTTGGAGACACTTATTTTA
346▶ I S P F L H L D F S N N L L T D T V F E N C G H L T E L E T L I L
1701 CAAATGAATCAATTAAGAAGTCTTCAAAAATAGCTGAAATGACTACACAGATGAAGTCTCTGCAACAATTGGATATTAGCCAGAATTTCTGTAAGCTATG
380▶ Q M N Q L K E L S K I A E M T T Q M K S L Q Q L D I S Q N S V S Y
1801 ATGAAAAGAAAGGAGACTGTTCTTGACTAAAAGTTTATTAAGTTTAAATATGCTTCAAATATACTTACTGACACTATTTTTCAGATGTTTACCTCCCAG
413▶ D E K K G D C S W T K S L L S L N M S S N I L T D T I F R C L P P R

HindIII (1965)
1901 GATCAAGTACTTGATCTTCACAGCAATAAAAATAAAGAGCATTCTAAACAAGTCGTAACCTGGAAGCTTTGCAAGAACTCAATGTTGCTTTCAATTCT
446▶ I K V L D L H S N K I K S I P K Q V V K L E A L Q E L N V A F N S
2001 TTAAGTACCTTCTGGATGTGGCAGCTTTAGCAGCCTTTCTGTATTGATCATTGATCACAATTCAGTTTCCACCCATCGGCTGATTTCTTCCAGAGCT
480▶ L T D L P G C G S F S S L S V L I I D H N S V S H P S A D F F Q S
2101 GCCAGAAGATGAGTCAATAAAGCAGGGGACAATCCATTCATGTACCTGTGAGCTAGGAGAATTTGTCAAAAATATAGACCAAGTATCAAGTGAAGT
513▶ C Q K M R S I K A G D N P F Q C T C E L G E F V K N I D Q V S S E V

BspLU11I (2274)
2201 GTTAGAGGGCTGGCTGATTCTTATAAGTGTGACTACCCGAAAGTTATAGAGGAACCTACTAAAGGACTTTTACATGTCTGAATATCTGCAACATA
546▶ L E G W P D S Y K C D Y P E S Y R G T L L K D F H M S E L S C N I

XcmI (2328)
2301 ACTCTGCTGATCGTCACCATCGTTGCCACCATGCTGGTGTGGCTGTGACTGTGACCTCCCTCTGCAGCTACTGGATCTGCCCTGGTATCTCAGGATGG
580▶ T L L I V T I V A T M L V L A V T V T S L C S Y L D L P W Y L R M

BstXI (2325) **PstI (2362)**
2401 TGTGCCAGTGGACCCAGACCCGGCGCAGGGCCAGGAACATACCCTTAGAAGAACTCCAAGAAATCTCGGATCCTATCCCTATGATGTGCCAGACTATGC
613▶ V C Q W T Q T R R R A R N I P L E E L Q R N L G S Y P Y D V P D Y A

BamHI (2468)
2501 TGGCTATCCATATGATGTTCTGATTATGCTGGATACCCCTTATGATGTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGA
646▶ G Y P Y D V P D Y A G Y P Y D V P D Y A •

NdeI (2508) **NheI (2565)** **MscI (2571)**
2601 GTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAA

HpaI (2703)
2701 CAAGTTAAACAACAACATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGG
2801 AATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTT

SapI (2981)
2901 GCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTAAGATATAGTGATTTTTCCCAAGGTTTGAAGTACTAGCTCTTCATTTCTTTATGT

SspI (3038) **SwaI (3052)**
3001 TTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGA

EcoO109I (3113)
3101 ATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGC

3201 TTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTCAGGAG
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 A

SacI (3313) **BstXI (3342)**
3301 CATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGT
110▶ 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 T

StuI (3477)
3401 GTCAAAGTCTTCTGCCCCTTGCTCACAGCAGACCCAATGGCAATGGCTTCCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAG
77▶ 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

3501 ATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCCA
43▶ 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 L

BspHI (3627)
3601 GATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAAC
10▶ D Q Q S I N F T K M

XmnI (3619) **AseI (3685)**
3701 AGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGG

SpeI (3840)
3801 GGCGGAGTTGTTACGACATTTTGAAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAAATCCCCGTGAG

SnaBI (3968)
3901 TCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAAGTCCC

NdeI (4073)
4001 ATAAGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAA
4101 GTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGG

PacI (4259)
4201 GGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCCTGAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAG
4301 GAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTTCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCG
4401 ACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCC

ApaI (4583)

4501 **CTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGT**
4601 **TCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATT**
4701 **AGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGA**
4801 **AGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCG**
4901 **CAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGT**

PacI (4999)

EagI (5019)

Swal (5008) **NotI (5018)**

5001 **TAATTAACATTTAAATCAGCGGCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCA**
5101 **TCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAAGTGCCAGGATCCAGAACATTTCTCTATCGAA**