



PvuI (7)
SgfI (6)
1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGACTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) **PvuII (239)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACCGCGCCGCCCTACCTGAGGGC
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAATGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) **BspHI (561)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCTACCTGAGATCACCGGTCCATCATGATGTCTGCGCCTGGCTGGGACTCTGATCC
1▶ M M S A S R L A G T L I

NcoI (603) **NsiI (679)**
601 CAGCCATGGCCTTCTCTCTGCGTGAGACCGAAAGCTGGGAGCCCTGCGTGAGGTTGTTCTTAATATTACTTATCAATGCATGGAGCTGAATTTCTA
13▶ P A M A F L S C V R P E S W E P C V E V V P N I T Y Q C M E L N F Y

BstXI (729) **Bsu36I (757)**
701 CAAAATCCCCGACAACCTCCCTTCTCAACCAAGAACCTGGACCTGAGCTTTAATCCCCTGAGGCATTTAGGCAGCTATAGCTTCTTCAAGTTCCAGAA
46▶ K I P D N L P F S T K N L D L S F N P L R H L G S Y S F F S F P E

PstI (800)
801 CTGAGGTTGCTGGATTTATCCAGGTGTGAAATCCAGACAATGAAGATGGGGCATATCAGAGCCTAAGCCACCTCTCTACCTTAATATTGACAGGAAACC
80▶ L Q V L D L S R C E I Q T I E D G A Y Q S L S H L S T L I L T G N
901 CCATCCAGAGTTTAGCCCTGGGAGCCTTTCTGGACTATCAAGTTTACAGAAGCTGGTGGCTGTGGAGACAAATCTAGCATCTCTAGAGAACTTCCCAT
113▶ P I Q S L A L G A F S G L S S L Q K L V A V E T N L A S L E N F P I
1001 TGGACATCTCAAACCTTTGAAAGAACCTAATGTGGCTCACAATCTTCAATCTTTCAAATACCTGAGTATTTTCTAATCTGACCAATCTAGAGCAC
146▶ G H L K T L K E L N V A H N L I Q S F K L P E Y F S N L T N L E H
1101 TTGGACCTTTCCAGCAACAAGATTCAAAGTATTTATTGCACAGACTTGCGGTTTCTACATCAAATGCCCTACTCAATCTCTCTTTAGACCTGTCCTGA
180▶ L D L S S N K I Q S I Y C T D L R V L H Q M P L L N L S L D L S L
1201 ACCCTATGAACCTTATCAACAGGTCATTTAAAGAAATTAGCTTCATAAGCTGACTTTAAGAAATAATTTTGATAGTTTAAATGTAATGAAAACCTG
213▶ N P M N F I Q P G A F K E I R L H K L T L R N N F D S L N V M K T C

EcoO109I (1395)
1301 TATTCAAGGCTGGCTGGTTTAGAAGTCCATCGTTTGGTTCTGGGAGAATTTAGAAATGAAGGAAACTTGGAAAAGTTTGACAAATCTGCTCTAGAGGGC
246▶ I Q G L A G L E V H R L V L G E F R N E G N L E K F D K S A L E G

EcoRI (1421)
1401 CTGTGCAATTTGACCATTGAAGAATCCGATTAGCATACTTAGACTACTACCTCGATGATATTATTGACTTATTTAATTGTTTGACAAATGTTTCTTCAT
280▶ L C N L T I E E F R L A Y L D Y Y L D D I I D L F N C L T N V S S

HpaI (1574)
1501 TTTCCCTGGTGTGACTATTGAAAGGTTAAAAGACTTTTCTTATAATTTTCGGATGGCAACATTTAGAATTAGTTAACTGTAATTTGGACAGTTTCC
313▶ F S L V S V T I E R V K D F S Y N F G W Q H L E L V N C K F G Q F P

BglII (1696)
1601 CACATTGAAACTCAAATCTCTCAAAGGCTTACTTTCACCTCCAACAAAGGTGGGAATGCTTTTTTCAGAAGTTGATCTACCAAGCCTTGAGTTTCTAGAT
346▶ T L K L K S L K R L T F T S N K G G N A F S E V D L P S L E F L D

BglII (1774)
1701 CTCAGTAGAAATGGCTTGTGATTTCAAAGGTTGCTGTTCTCAAAGTGATTTTGGGACAACCAGCCTAAAGTATTTAGATCTGAGCTTCAATGGTGTATTATTA
380▶ L S R N G L S F K G C C S Q S D F G T T S L K Y L D L S F N G V I
1801 CCATGAGTTCAAACCTTTGGGCTTGAACAACACTAGAACATCTGGATTCCAGACTTCCAATTTGAAACAAATGAGTGAGTTTTCAGTATTTCTATCACT
413▶ T M S S N F L G L E Q L E H L D F Q H S N L K Q M S E F S V F L S L
1901 CAGAACTCATTTACCTTGACATTTCTCATACTCACACCAGAGTTGCTTTCAATGGCATCTTCAATGGCTTGTCCAGTCTCGAAGCTTGAAATGGCT
446▶ R N L I Y L D I S H T H T R V A F N G I F N G L S S L E V L K M A

EcoRV (2030)
2001 GGCAATCTTTCCAGGAAAACCTTCCAGATATCTTACAGAGCTGAGAAAACCTGACCTTCTGGACCTCTCTCAGTGTCAACTGGAGCAGTTGTCTC
480▶ G N S F Q E N F L P D I F T E L R N L T F L D L S Q C Q L E Q L S

BbsI (2124)
2101 CAACAGCATTTAACTCACTCTCCAGTCTTCCAGTACTAAATATGAGCCACAACAACCTCTTTTCATTGGATACGTTTCTTATAAGTGTCTGAACTCCCT
513▶ P T A F N S L S S L Q V L N M S H N N F F S L D T F P Y K C L N S L
2201 CCAGGTTCTTGATTACAGTCTCAATCACATAATGACTTCCAAAAACAGGAACACAGCATTTTCCAAGTAGTCTAGCTTTCTTAAATCTTACTCAGAA
546▶ Q V L D Y S L N H I M T S K K Q E L Q H F P S S L A F L N L T Q N
2301 GACTTTGCTTGTACTTGTGAACACCAGAGTTTCTGCAATGGATCAAGGACCAGAGGCAGCTCTTGGTGGAAAGTTGAACGAATGGAATGTGCGACACCTT
580▶ D F A C T C E H Q S F L Q W I K D Q R Q L L V E V E R M E C A T P

SphI (2412) **BstAPI (2407)**
2401 CAGATAAGCAGGGCATGCCTGTGCTGAGTTTGAATATCACCTGTCAGATGAATAAGACCATCATTGGTGTGCTGGTCCCTCAGTGTGCTGTAGTATCTGT
613▶ S D K Q G M P V L S L N I T C Q M N K T I I G V S V L S V L V V S V

MscI (2591)

NheI (2585)

2501 TGTAGCAGTTCTGGTCTATAAGTTCTATTTTCACCTGATGCTTCTTGCTGGCTGCATAAAGTATGGTAGAGGTGAAAACATCTGAGCTAGCTGGCCAGCA
646▶ V A V L V Y K F Y F H L M L L A G C I K Y G R G E N I •

2601 ATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAA

HpaI (2723)

2701 CCATTATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCATTCAATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAA

EcoRI (2819)

2801 CCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGG
▶ ◀

2901 CATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCTCTTTTCATGGAGTTAAGATATAGTGATTTTTCCCAAGGTTTGAAGT

SapI (3001) **SwaI (3072)**

3001 AGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATA

EcoO109I (3133)

3101 AATGTTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAT

3201 TGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAAT
141◀ • N R T Y K L P I L E E I T T K V L K G N M E I

SacI (3333) **BstXI (3362)**

3301 GAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGG
117◀ 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 V E D S Y P

StuI (3497)

3401 TGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAAATGGCAATGGCTTCCAGCAGACAGTACCCTGCCAATGTAGG
83◀ 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 V R G I Y A

3501 CCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGT
50◀ 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 M T I K E T

BspHI (3647)

BbsI (3643)

XmnI (3639)

3601 GGCACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGC
17◀ A V E V L E L D Q Q S I N F T K M ◀

AseI (3705) **SacI (3762)**

3701 CGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTA

SpeI (3860)

3801 CCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCCATTGACGTCAATGGGGTGGAA

SnaBI (3988)

3901 GACTTGAAATCCCCTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTA

NdeI (4093)

4001 CTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGA

4101 TACACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCA

PacI (4279)

PstI (4272)

SdaI (4271) **BspLUIII (4289)**

4201 TTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAGAACATGTGAGCA
▶ ◀

4301 AAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAA

4401 GTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGG

4501 ATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGTTCGTTCCGCTCAAGCTGGGC

ApaLI (4603)

4601 TGTGTGCACGAACCCCCGTTGAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAG

4701 CAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCCTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAAGCAGTATT

4801 TGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAACAAACCACCGCTGGTAGCGGTGTTTTTTTGT

4901 TGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGAACGAAAACCTCACGTTAAG

EagI (5039)

PacI (5019) SwaI (5028) **NotI (5038)**

5001 GGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTGTGTGAATCG
5101 TAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATC
5201 GAA