



PvuI (7)
SgfI (6)
 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
 101 GAGAAGGTGGCGCGGGTAAACTGGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) **PvuII (239)** **Bsu36I (291)**
 201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCCTTACAGCGCCCGCCGCCCTACCTGAGGGCC
 301 GCCATCCACGCGCGTTGAGTGCGGTTCTGCCGCCTCCCGCCTGTGGTGCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

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

NcoI (603) **NsiI (679)**
 601 CAGCCATGGCCTTCTCTCTGCGTGAGACCCGAAAGCTGGGAGCCCTGCGTGAGGTTGGTTCCTAATATTACTTATCAATGCATGGAGCTGAATTTCTA
 12▶ 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 CAAATCCCCGACAACTCCCTTCTCAACCAAGAACCTGAGCCTGAGCTTTAATCCCTGAGGCATTTAGGCAGCTATAGCTTCTTCAAGTTCCAGAA
 45▶ 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 CTGAGGTGCTGGATTTATCCAGGTGTGAAATCCAGACAATTGAAGATGGGGCATATCAGAGCCTAAGCCACCTCTCTACCTTAATATTGACAGGAAACC
 79▶ 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 CCATCCAGAGTTTAGCCCTGGGAGCCTTTTCTGGACTATCAAGTTTACAGAAGCTGGTGGCTGTGGAGACAAATCTAGCATCTCTAGAGAACTTCCCAT
 112▶ 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 TGGACATCTCAAAACTTTGAAAGAACCTAATGAGGCTCACAATCTTCAATCTTTCAAATTAAGTATTTTCTAATCTGACCAATCTAGAGCAC
 145▶ 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 TTGGACCTTCCAGCAACAAGATTCAAAGTATTTATTGACAGACTTGGCGGTTCTACATCAAATGCCCTACTCAATCTCTTTAGACCTGTCCTGA
 179▶ 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 ACCCTATGAACCTTATCAACAGGTCATTTAAAGAAATTAGGCTTATAAGCTGACTTTAAGAAATAATTTTGATAGTTTAAATGTAATGAAAACCTG
 212▶ 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 TATTCAAGTCTGGCTGTTTAGAAGTCCATCGTTTGGTCTGGGAGAATTTAGAAATGAAGGAAACTTGAAAAAGTTTGACAAATCTGCTCTAGGGCC
 245▶ 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 CTGTGCAATTTGACCATTGAAGAATCCGATTAGCATACTTAGACTACTACCTCGATGATATTATTGACTTATTTAATGTTTGACAAATGTTTCTTCAT
 279▶ 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 TTTCCCTGGTGTGACTATTGAAAGGGTAAAAGACTTTTCTTATAATTTCCGATGGCAACATTTAGAAATGTAATTTGACAGTTTCC
 312▶ 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 CACATTGAAACTCAAATCTCTAAAAGGCTTACTTTCACTTCCAACAAAGGTGGGAATGCTTTTTCAGAAGTTGATCTACCAAGCCTTGAGTTTCTAGAT
 345▶ 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

BglIII (1774)
 1701 CTCAGTAGAAATGGCTTGTGAGTTTCAAAGTTGCTGTTCTCAAAGTATTTGGGACAACCAGCCTAAAGTATTTAGATCTGAGCTTCAATGGTGTATTA
 379▶ 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 CCATGAGTTCAAACCTTCTGGGCTTAGAACAAC TAGAACATCTGGATTCCAGCATTCCAATTTGAAACAAATGAGTGAGTTTTCAGTATTCTATCACT
 412▶ 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 CAGAAACCTCATTTACCTTGACATTTCTCATACTCACACCAGAGTTGCTTTCAATGGCATCTCAATGGCTTCCAGTCTCGAAGTCTTGAATGGCT
 445▶ 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 GGCAATCTTTCCAGGAAAACCTCCCTCCAGATATCTCACAGAGCTGAGAAAACCTGACCTTCCCTGGACCTCTCTCAGTGTCAACTGGAGCAGTTGTCTC
 479▶ 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 CAACAGCATTTAACTCACTCTCCAGTCTCAGGTAATAATATGAGCCACAACAACCTCTTTTTCATTGGATACGTTTCTTATAAGTGTCTGAACTCCCT
 512▶ 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 CCAGGTTCTTGATTACAGTCTCAATCACATAATGACTTCCAAAAAACAGGAACACAGCATTTCCTCAAGTAGTCTAGCTTTCTTAAATCTTACTCAGAAT
 545▶ 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 GACTTTGTGTAAGTGTGAACACCAGAGTTTCTGCAATGGATCAAGGACCAGAGGCTCTTGGTGAAGTTGAACGAATGGAATGTGCGACACCTT
 579▶ 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 CAGATAAGCAGGGCATGCCTGTGCTGAGTTTGAATATCACCTGTCAGATGAATAAGACCATCATTGGTGTGTCGGTCCCTCAGTGTCTGTAGTATCTGT
612▶ 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

BamHI (2582)
2501 TGTAGCAGTTCTGGTCTATAAGTTCTATTTTACCTGATGCTTCTTGTGGTGCATAAAGTATGGTAGAGGTGAAAACATCGGATCC**TATCCCTATGAT**
645▶ 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 G S Y P Y D

MscI (2685)
NdeI (2622)
NheI (2679)
2601 **GTGCCAGACTATGCTGGCTATCCATATGATGTTCTCTGATTATGCTGGATACCCTTATGATGTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGATA**
679▶ V P D Y A G Y P Y D V P D Y A G Y P Y D V P D Y A •

2701 **AGATACATTGATGAGTTTGGACAAACCACTAGAAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTA**

HpaI (2817)
2801 **TAAGCTGCAATAAAACAAGTTAACAAACAATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTA**

EcoRI (2913)
2901 **CAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGG**

SapI (3095)
3001 **CATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGGTTTGAACTAGCTCT**

SwaI (3166)
3101 **TCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTT**

EcoO109I (3227)
3201 **TTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACA**

3301 **GCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGTTGCCATTCTCAATGAGCAC**
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 (3427) **BstXI (3456)**
3401 **AAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTG**
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 (3591)
3501 **ACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACGACAGACAGTACCCTGCCAATGTAGGCCTCAA**
81◀ 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 I

3601 **TGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGGTCTTGTGTCCTCATAGAGCATGGTATCTTCTCAGTGGCGAC**
48◀ 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 (3741) **BbsI (3737)**
XmnI (3733) **AseI (3799)**
3701 **CTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGA**
15◀ E V L E L D Q Q S I N F T K M

SacI (3856)
3801 **TTAATTGTCAAACACGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCC**

SpeI (3954)
3901 **ATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTG**

SnaBI (4082)
4001 **GAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCA**

NdeI (4187)
4101 **AGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACT**

4201 **TGATGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTG**

PacI (4373) **PstI (4366)** **SdaI (4365)** **BspLU11I (4383)**
4301 **ACGTCAATGGGCGGGGGTCTGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGC**

4401 **CAGCAAAAGGCCAGGAACCGTAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGA**

4501 **GGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTCCCCCTGGAAGTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCT**

4601 GTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTG
4701 CACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCA
4801 CTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTAT
4901 CTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTTCGCAAG
5001 CAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTT

EagI (5133)

PacI (5113) SwaI (5122) **NotI (5132)**

5101 TGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTAATCGTAACTA
5201 ACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA