



PvuI (7)
SgfI (6)
 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
 101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCTTTTTCCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTCACGCGCCCGCCCTACCTGAGGCC
 301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) **NcoI (568)**
 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGGCCACCATGGTTCTCCGTCGAAGGACTCTGCACCCC
 1► M V L R R R T L H P

Acc65I (648)
 601 TTGTCCTCCTGGTACAGGCTGCAGTGTGGCTGAGACTCTGGCCCTGGGTACCCTGCCTGCCTTCTACCCTGTGAGCTGAAGCCTCATGGCCTGGTGG
 11► L S L L V Q A A V L A E T L A L G T L P A F L P C E L K P H G L V
 701 ACTGCAATTGGCTGTTCTGAAGTCTGTACCCGTTTCTCTGCGGAGCATCTGCTCCAACATCACCCGCTCTCCTTGATCTCCAACCGTATCCACCA
 44► D C N W L F L K S V P R F S A A A S C S N I T R L S L I S N R I H H

Tth111I (813)
 801 CCTGCACAACCTCCGACTTCGTCCACCTGTCCAACCTGCGGAGCTGAACTCAAGTGAAGTGTCCACCCACTGGCCTTAGCCCCCTGCACCTTCTCTTGC
 77► L H N S D F V H L S N L R Q L N L K W N C P P T G L S P L H F S C

XcmI (916)
 901 CACATGACCATTGAGCCAGAACCTTCTGGCTATGCTGACTGAGGAGCTGAACCTGAGCTATAATGGTATCACCACTGTCCCCGACTGCCAGCT
 111► H M T I E P R T F L A M R T L E E L N L S Y N G I T T V P R L P S

XbaI (1040) **NgoMIV (1059)**
 1001 CCCTGGTGAATCTGAGCCTGAGCCACACCAACATCCTGGTTCTAGATGCTAACAGCCTCGCCGGCCTATACAGCCTGCGGTTCTCTCATGGACGGGAA
 144► S L V N L S L S H T N I L V L D A N S L A G L Y S L R V L F M D G N

BsrBI (1126) **BstEII (1136)**
 1101 CTGCTACTACAAGAACCCCTGCACAGGAGCGGTGAAGGTGACCCAGGCGCCCTCTGGGCTGAGCAATCTACCCATCTGTCTCTGAAGTATAACAAC
 177► C Y Y K N P C T G A V K V T P G A L L G L S N L T H L S L K Y N N

BbsI (1281)
 1201 CTCACAAAGTGCCCCGCAACTGCCCCCAGCCTGGAGTACCTCCTGGTGTCTATAACCTCATTGTCAAGCTGGGGCTGAAGACTGGCCAATCTGA
 211► L T K V P R Q L P P S L E Y L L V S Y N L I V K L G P E D L A N L

ScaI (1310)
 1301 CCTCCCTTCGAGTACTTGATGTGGTGGGAATTGCCGTGCTGCGACCATGCCCCCAATCCCTGTATAGAATGTGGCCAAAAGTCCCTCCACCTGCACCC
 244► T S L R V L D V G G N C R R C D H A P N P C I E C G Q K S L H L H P
 1401 TGAGACCTCCATCACCTGAGCCATCTGGAAGCCTGGTGTGCTGAAGGACAGCTCTCTCATACACTGAACTCTCCTGGTTCCAAGGTCTGGTCAACCTC
 277► E T F H H L S H L E G L V L K D S S L H T L N S S W F Q G L V N L

FspI (1576)
 1501 TCGGTGCTGGACCTAAGCGAGAAGTTTCTCTATGAAAGCATCAACCACACCAATGCCTTTGAGAACCTAACCCGCTGCGCAAGCTCAACCTGTCTTCA
 311► S V L D L S E N F L Y E S I N H T N A F Q N L T R L R K L N L S F

BsrBI (1697)
 1601 ATTACCGCAAGAAGGTATCCTTTGCCGCTCCACCTGGCAAGTTCCTTCAAGAACCTGGTGTCACTGCGAGGAGCTGAACATGAACGGCATCTTCTCCG
 344► N Y R K K V S F A R L H L A S S F K N L V S L Q E L N M N G I F F R
 1701 CTCGCTCAACAAGTACACGCTCAGATGGCTGGCCGATCTGCCAAACTCCACACTCTGCATCTTCAAATGAACTTCATCAACCAGGCACAGCTCAGCATC
 377► S L N K Y T L R W L A D L P K L H T L H L Q M N F I N Q A Q L S I

Acc65I (1803) **BstAPI (1890)**
 1801 TTTGGTACCTTCCGAGCCCTTGGCTTTGTGGACTTGTGAGACAATCGCATCAGTGGGCTTCAACGCTGTCAGAAGCCACCCCTGAAGAGGCAGATGATG
 411► F G T F R A L R F V D L S D N R I S G P S T L S E A T P E E A D D

BamHI (1925) **NcoI (1999)**
 1901 CAGAGCAGGAGGAGCTGTTGTCTGCGGATCCTCACCCAGCTCCACTGAGCACCCCTGCTTCTAAGAACTTCATGGACAGGTGTAAGAATTCAAGTTCAC
 444► A E Q E E L L S A D P H P A P L S T P A S K N F M D R C K N F K F T
 2001 CATGGACCTGTCTCGAACAACCTGGTACTATCAAGCCAGAGATGTTGTCAATCTCTCACGCTCCAGTGTCTTAGCCTGAGCCACAACCTCATTGCA
 477► M D L S R N N L V T I K P E M F V N L S R L Q C L S L S H N S I A

XmnI (2186)
 2101 CAGGCTGTCAATGGCTCTCAGTTCCTGCCGCTGACTAATCTGCAGGTGCTGGACCTGTCCATAACAACTGGACTTGACTGACCACTGGAATCGTTTCAGTG
 511► Q A V N G S Q F L P L T N L Q V L D L S H N K L D L Y H W K S F S
 2201 AGTACCACAGTTGCAGGCCCTGGACCTGAGCTACAACAGCCAGCCCTTTAGCATGAAGGGTATAGGCCACAATTTAGTTTTGTGGCCATCTGTCCAT
 544► E L P Q L Q A L D L S Y N S Q P F S M K G I G H N F S F V A H L S M
 2301 GCTACACAGCCTTAGCCTGGCACACAATGACATTACACCCGTGTCTCCTCACATCTCAACAGCAACTCAGTGAGGTTTCTTGACTTCAGCGGCAACGGT
 577► L H S L S L A H N D I H T R V S S H L N S N S V R F L D F S G N G

SfiI (2448)
XcmI (2444)
 2401 ATGGGCCGATGTGGATGAGGGGGCCCTTTATCTCCATTTCTTCAAGGCCCTGAGTGGCCTGCTGAAGCTGGACCTGTCTAAAATAACCTGCATATCC
 611► M G R M W D E G G L Y L H F F Q G L S G L L K L D L S Q N N L H I

2501 TCCGGCCCCAGAACCTTGACAACCTCCCAAGAGCCTGAAGCTGCTGAGCCTCCGAGACAACCTACCTATCTTTCTTTAACTGGACCAGTCTGCCTTCTCT
644▶ L R P Q N L D N L P K S L K L L S L R D N Y L S F F N W T S L S F L
2601 GCCAACCTGGAAGTCTAGACCTGGCAGGCAACCAGCTAAAGGCCCTGACCAATGGCACCCCTGCCTAATGGCACCCCTCCAGAACTGGATGTCAGC
677▶ P N L E V L D L A G N Q L K A L T N G T L P N G T L L Q K L D V S
2701 AGCAACAGTATCGTCTGTGGTCCCAGCCTTCTCGTCTGGCGTCTGAGCTGAAAGAGGTCAACCTCAGCCACAACATTCTCAAGACGGTGGATCGCT
711▶ S N S I V S V V P A F F A L A V E L K E V N L S H N I L K T V D R

Bsp120I (2808) XbaI (2834)

2801 CCTGGTTTGGGCCATTGTGATGAACCTGACAGTCTAGACGTGAGAAGCAACCTCTGCACTGTGCCTGTGGGGCAGCCTCTGAGACTTACTGTTGGA
744▶ S W F G P I V M N L T V L D V R S N P L H C A C G A A F V D L L L E
2901 GGTGCAGACCAAGGTGCCTGGCCTGGCTAATGGTGTGAAGTGTGGCAGCCCGGCCAGCTGCAGGGCCGTAGCATCTTCGCACAGGACCTGGCGCTGTGC
777▶ V Q T K V P G L A N G V K C G S P G Q L Q G R S I F A Q D L R L C
3001 CTGATGAGGTCTCTCTGGGACTGCTTGGCCTTCTACTCTGGCTGTGGCCGTGGCATGGTGGTGCCTATACTGCACCATCTCTGGCTGGGACG
811▶ L D E V L S W D C F G L S L L A V A V G M V V P I L H H L C G W D

BamHI (3177)

3101 TCTGGTACTGTTTTATCTGTGCTGGCATGGCTACCTTTGCTGGCCGACCGACGCGCCCAAGCTCTCCC**GGATCTACCCCTATGATGTGCC**
844▶ V W Y C F H L C L A W L P L L A R S R R S A Q A L P G S Y P Y D V P

NheI (3214)

3201 **AGACTACGCCTAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTGGACAACCCACAAC**TAGAATGCAGTGAAAAAATGCTTTATTTGTGA
877▶ D Y A •

HpaI (3352)

3301 **AATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACACAACAATTGCATTATTTATGTTTCAGGTT**CAGGGGGAG

EcoRI (3448)

3401 **GTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTAC**
3501 **TTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTAAG**

SapI (3630) SspI (3687)

3601 **ATATAGTGTATTTTCCCAAGTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTT**AGTAAATATTCAGAAAT

SwaI (3701)

3701 **AATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACT**

3801 **TAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTT**GAGGGGGATGAGTTCCTCAATGGTG
141▶ • N R T Y K L P I L E E I T

SacI (3962)

3901 **GTTTTGACAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGA**
126▶ T K 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
4001 **TGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTC**
93▶ S R 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
4101 **AGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTG**
60▶ A C 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

BbsI (4272) XmnI (4268)

4201 **TCCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAG**
26▶ D E 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 (4334) SacI (4391)

4301 **TCGTATTACTATGCCGATATACTATGCCGATGATTAATTGTCAA**AACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGC

SpeI (4489)

4401 **TTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAA**
4501 **CAAACCTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTA**CTGCCAAAACCGCATCATCATG

SnaBI (4617)

4601 **GTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAAGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGA**

NdeI (4722)

4701 **CGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCTGCAAGTGGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCC**
4801 **TATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGCGT**CAGCCAGCGGGCCATTTACCCTAAGTTATGTAACG

PacI (4908) SdaI (4900) BspLU11I (4918)

4901 **CCTGCAGGTTAA**TAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCC
5001 **TGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATAACAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCCG**
5101 **TCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCCTTCTCCCTTCGGAAAGCGTGGCGCTTCTCATAGCTCACGCTGATAGTATCTCAGTT**

ApaLI (5232)

5201 CGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCC
5301 GGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCT
5401 AACTACGGCTACTACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAA
5501 CCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGA

EagI (5668)

PacI (5648) SmaI (5657) **NotI (5667)**

5601 CGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTAC
5701 ATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGC
5801 AAGTGCAGGTGCCAGAACATTTCTATCGAA