



PvuI (7)
SgfI (6) 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGTACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC
PvuII (239)
Bsu36I (291)
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTCCTGACCCTGCTTCTCAACTCTACGCTTTGTTTCGTTT

AgeI (552) 501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGGCCAGCATGCTACGAGCTCTTTGGCTCTTGGATC
SphI (568) 1► M L R A L W L F W I
SapI (587)

BsrBI (683)
601 TTGGTGGCCATAACAGTCTCTTTCAGCAAACGCTGTTCTGCTCAGGAGTCTCTGTCATGTGATGCTTCTGGGTGTGTGATGGCCGCTCCAGGCTTTTCA
11► L V A I T V L F S K R C S A Q E S L S C D A S G V C D G R S R S F

BstEII (777)
NeoI (773)
701 CCTCTATTCCCTCCGACTCACAGCAGCCATGAAAAGCCTTGACCTGTCTTTCAACAAGATCACCTACATTGGCCATGGTACCTCCGAGCGTGTGGCAA
44► T S I P S G L T A A M K S L D L S F N K I T Y I G H G D L R A C A N
801 CCTCCAGTTCGATTTTGAAGTCCAGCAGAATCAATACAATAGAGGGAGACGCCCTTTATTCTCTGGGCAGTCTTGAACATTTGGATTTGTCTGATAAT
77► L Q V L I L K S S R I N T I E G D A F Y S L G S L E H L D L S D N

Bsp120I (930)
EcoO109I (930)
901 CACCTATCTAGTTTATCTTCTCCTCGGTCGGGCCCTTCTCTTTGAAATACTTAACTTAATGGGAAATCCTTACCAGACACTGGGGTAAACATCGC
111► H L S S L S S W F G P L S S L K Y L N L M G N P Y Q T L G V T S

Bsu36I (1028)
1001 TTTTTCCAATCTCACAATTTACAAAACCTCAGGATAGGAAATGTAGAGACTTTCAGTGAGATAAGGAGAATAGATTTTGTGGGCTGACTTCTCTCAA
144► L F P N L T N L Q T L R I G N V E T F S E I R R I D F A G L T S L N
1101 TGAAC TTGAAATTAAGGCATTAAGTCTCCGGAATTATCAGTCCCAAAGTCTAAAGTCGATCCGCGACATCCATCACCTGACTTTCACCTAAGCGAGTCT
177► E L E I K A L S L R N Y Q S Q S L K S I R D I H H L T L H L S E S
1201 GCTTTCCTGCTGGAGATTTTGCAGATATTCTGAGTTCGTGAGATATTTAGAATAAGAGATACTTGGCCAGGTTCCAGTTTCCACTGCCCGC
211► A F L L E I F A D I L S S V R Y L E L R D T N L A R F Q F S P L P

HindIII (1361)
1301 TAGATGAAGTCAGCTCACCGATGAAGAAGCTGGCATTCCGAGGCTCGGTTCTCACTGATGAAAGCTTTAACGAGCTCCTGAAGCTGTTGCGTTACATCTT
244► V D E V S S P M K K L A F R G S V L T D E S F N E L L K L L R Y I L
1401 GGAAGTGTCCGAGGTAGATTCGACGACTGTACCCTCAATGGGCTCGGCGATTTCAACCCCTCGGAGTCAGACGATGTAGCGAGCTGGGTAAGTAGAA
277► E L S E V E F D D C T L N G L G D F N P S E S D V V S E L G K V E

ScaI (1554)
1501 ACAGTCACTATCCGGAGTTGCATATCCCCAGTTCATTTGTTTTATGACCTGAGTACTGTCTATTTCCCTCCTGGAGAAGGTGAAGCGAATCACAGTAG
311► T V T I R R L H I P Q F Y L F Y D L S T V Y S L L E K V K R I T V

BbsI (1611) 1601 AGAACAGCAAGTCTTCTCGTTCCCTGCTCGTTCCTCCAGCATTTAAATCATTAGAATCTTAGACCTCAGCGAAAATCTGATGGTTGAAGAATATTT
344► E N S K V F L V P C S F S Q H L K S L E F L D L S E N L M V E E Y L
EcoRI (1656) 1701 GAAGAAGTCAAGGAGCCTGGCCTTCTACAAACCTAGTTTTGAGCCAGAATCATTGAGATCAATGCAAAAAACAGGAGAGATTTTGTCTG
377► K N S A C K G A W P S L Q T L V L S Q N H L R S M Q K T G E I L L

PvuII (1859)
PshAI (1857)
1801 ACTCTGAAAAACCTGACCTCCCTTGACATCAGCAGGAACACTTTTCATCCGATGCCCGACAGCTGTCAAGTGGCCAGAAAAGATGCGCTTCTGAATTTGT
411► T L K N L T S L D I S R N T F H P M P D S C Q W P E K M R F L N L

BamHI (1909)
1901 CCAGTACAGGGATCCGGGTGGTAAAAACGTGCATTCTCAGACGCTGGAGGTGTTGGATGTTAGTAACAACAATCTTGACTCATTTTCTTTGTTCTTGGC
444► S S T G I R V V K T C I P Q T L E V L D V S N N N L D S F S L F L P

BspHI (2077)
2001 TCGGCTGCAAGAGCTCTATATTTCCAGAAAATAGCTGAAAACACTCCAGATGCTTCTGTTGTTCCCTGTGTTGCTGGTCATGAAAATCAGAGAGAATGCA
477► R L Q E L Y I S R N K L K T L P D A S L F P V L L V M K I R E N A

ScaI (2103)
2101 GTAAGTACTTTCTTAAAGACCAACTTGGTCTTTTCCAAAACCTGGAGACTCTGGAAGCAGGCACAACCACTTTGTTTGTCTCTGCAACTCCTATCCT
511► V S T A T T F S K D Q L G S F P K L E T L E A G D N H F V C S C E L L S
2201 TTAATATGGAGACGCCAGCTCTGGCTCAAATCTGGTGTGACTGGCCAGACAGTACCTGTGTGACTCTCCGCCTCGCTGCACGGCCACAGGCTTCAGGA
544► F T M E T P A L A Q I L V D W P D S Y L C D S P P R L H G H R L Q D
2301 TGCCCGCCCTCCGCTTGTGAATGTACCAGGCTGCACTGGTGTCTGGAGTCTGCTGTGCCCTTCTCTGTTGATCTTGTCTGATAGGTCGCCCTGTGCCAC
577► A R P S V L E C H Q A A L V S G V C C A L L L L I L L V G A L C H

2401 CATTTCACGGACTGTGGTACCTGAGAATGATGTGGCGTGGCTCCAGGCCAAGAGGAAGCCCAAGAAAGCTCCCTGCAGGGACGTTTAGCTAGCTGGCC
 611▶ H F H G L W Y L R M M W A W L Q A K R K P K K A P C R D V • —
 2501 AGACATGATAAGATACATTGATGAGTTTGGACAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATT

2601 **Acc65I (2416)** PstI (2474) SdaI (2473) **NheI (2489)**
 GTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAAATTGCATTCAATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGT

2701 **HpaI (2627)** MfeI (2638)
 AAAACCTCTACAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAAT
 2801 AAGGCATAGGCATCAGGGGCTGTTGCCAATGTCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGGTTTG

2901 **EcoRI (2723)**
 AACTAGCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAA
 3001 **SapI (2905)** **SspI (2962)** **SwaI (2976)**
 AATAAATGTTTTTTATTAGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAG
 3101 **EcoO109I (3037)**
 AAATTGGACAGCAAGAAAGCGAGCTTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCT
 141◀ • N R T Y K L P I L E E I T T K V L K G N M E

3201 **BstXI (3266)**
 CAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTA
 118◀ 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 D V E D S Y
 3301 GGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATG
 85◀ 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 V T V R G I

3401 **StuI (3401)**
 TAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGGTCTTGTGTCCTCATAGAGCATGGTATCTTCT
 51◀ 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 Y L M T I K E

3501 **BbsI (3547)** **XmnI (3543)**
 CAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACT
 18◀ T A V E V L E L D Q Q S I N F T K M

3601 **AseI (3609)**
 ATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAAACGAGCTCTGCTTATATAGACCTCCACCGTACAG

3701 **SpeI (3764)**
 CCTACCGCCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGG

3801 **SnaBI (3892)**
 TGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCGCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGA

3901 **NdeI (3997)**
 TGTACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTACCCTGATTGACGTCAATAGGGGGCTACTTGGCAT
 4001 ATGATACACTTGTACTGCTCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATAC

4101 **PstI (4176)** **SdaI (4175)** **PacI (4183)** **BspLU11I (4193)**
 GTCATTATTGACGTCAATGGCGGGGGTCTGGGCGGTCAGCCAGGCGGCCATTTACCCTAAGTTATGTAACGCCTGCAGGTTAATAAGAACATGTG
 4201 AGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGC
 4301 TCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTCCGACCCTGCCGCTTA
 4401 CCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCT

4501 **ApaLI (4507)**
 GGGCTGTGTGCACGAACCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGGTCCAAACCCGGTAAGACACGACTTATCGCCACTG
 4601 GCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAG
 4701 TATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTCCGCAAAACAAACCCGCTGGTAGCGGTGTTTTTT
 4801 TGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGT

EagI (4943)

PacI (4923) SwaI (4932) NotI (4942)

4901 TAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGA
5001 ATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTC
5101 TATCGAA