



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

Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTCACGCGCCCGCCCTACCTGAGGCC
HindIII (245)
Bsu36I (291)

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGTTAAGTTTAAAGCTCAGGTCGAGACC
NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGCGAAGGAGGGCCACCATGTACAGGATGCAACTCCTGTCTTGA
SgrAI (551) 1► M Y R M Q L L S C
BsrGI (573)

601 TTGCACTAAGTCTTGCACTTGTACGAATTCGGCTCATACTCATCAGGACTTTCAGCCAGTGTCCACCTGGTGGCACTGAACACCCCTGTCTGGAGG
DraIII (665) 10► I A L S L A L V T N S A H T H Q D F Q P V L H L V A L N T P L S G G
SphI (699)
701 CATGCGTGGTATCCGTGGAGCAGATTTCCAGTCTCCAGCAAGCCGAGCCGTGGGCTGTCCGGCACCTCCGGGCTTCTGTCTCTAGGCTGCAG
43► M R G I R G A D F Q C F Q Q A R A V G L S G T F R A F L S S R L Q
801 GATCTCTATAGCATCGTGCGCCGTGTGACCGGGGTCTGTGCCATCGTCAACTGAAGGACGAGGTGCTATCTCCAGCTGGGACTCCCTGTTTCTG
77► D L Y S I V R R A D R G S V P I V N L K D E V L S P S W D S L F S

Bsp120I (924)
XmaI (920) 901 GCTCCCAGGTCAACTGCAACCCGGGCGCCGATCTTTCTTTTACGGCAGAGATGTCTGAGACACCCAGCTGGCCGAGAAGAGCGTATGGCACGG
110► G S Q G Q L Q P G A R I F S F D G R D V L R H P A W P Q K S V W H G
SapI (982)
1001 CTCGGACCCAGTGGCGGAGGCTGATGGAGAGTACTGTGAGACATGGCGAACTGAACTACTGGGCTACAGGTACGGCCTCCTCCTGTGTACGGC
143► S D P S G R R L M E S Y C E T W R T E T T G A T G Q A S S L L S G

BspHI (1167)
1101 AGGCTCCTGGAACAGAAAGTGCAGAGTCCACAACAGCTACATCGTCTGTGCATTGAGAATAGCTTCATGACCTCTTTCTCCAAGGTACCCGGAGTAG
177► R L L E Q K A A S C H N S Y I V L C I E N S F M T S F S K V P G V
XmnI (1159) 1201 GTACGAATTCGGTGTATCTGTCAAGATGTAAGACCGGCATCGCAACGGCTACAGAGGAACCATGTCCAGGACAAAGAGTGGTGTGCTGTCAAAAGTG
210► G T N S V Y L S E C K T G I G N G Y R G T M S R T K S G V A C Q K W
Acc65I (1186)
1301 GGTGCCACGTTCCCCACGTACCAACTACTCTCCAGTACACATCCCAATGAGGGACTAGAAGAGAAGTACTGTAGGAACCCAGACAATGATGAACAA
243► G A T F P H V P N Y S P S T H P N E G L E E N Y C R N P D N D E Q

BstAPI (1473)
BspEI (1423) 1401 GGGCCTTGGTGTACTACTACAGATCCGGACAAGAGATATGACTACTGCAACATTCCTGAATGTGAAGAGGAATGCATGTACTGCAGTGGAGAAAAGTATG
277► G P W A C Y A T T D P D K R Y D Y C N I P E C E E E C M Y C S G E K Y
NsiI (1471)
1501 AGGGCAAATCTCAAGACCATGTCTGGACTTGACTGCCAGGCTGGGATTCTCAGAGCCACATGCTCATGGATACATCCCTGCCAAATTTCCAAGCAA
310► E G K I S K T M S G L D C Q A W D S Q S P H A H G Y I P A K F P S K
1601 GAACTGAAGATGAATTATGCCGCAACCTGACGGGAGCCAAAGCCCTGGTGTTCACAACAGACCCACCAAACCTGGGAATCTGTGACATCCCC
343► N L K M N Y C R N P D G E P R P W C F T T D P T K R W E Y C D I P
1701 CGTGCACAACACCCCGCCCAACCCAGCCCAACCTACCAATGTCTGAAAGGAAGAGGTGAAAATTACCGAGGGACCGTGTCTGTACCCTGTCTGGGA
377► R C T T P P P P S P T Y Q C L K G R G E N Y R G T V S V T V S G

Eco47III (1809) 1801 AAACCTGTGAGGCTGGAGTGAAGCAACCCCTCATAGGCACAACAGGACACCAGAAAATTTCCCTGCAAAAATCTGGAAGAGAACTACTGCCGAACCC
410► K T C Q R W S E Q T P H R H N R T P E N F P C K N L E E N Y C R N P

ScaI (1953) 1901 AGATGGAGAACTGCTCCCTGGTGTATACCACTGACAGCCAGCTGAGGTGGGAGTACTGTGAGATTCATCCTGCGAGTCTCAGCATCACCAGACCAG
443► D G E T A P W C Y T T D S Q L R W E Y C E I P S C E S S A S P D Q
2001 TCAGATTCCTCAGTTCACCAGAGGAGCAAACCTGTGGTCCAGGAATGCTACCAGAGCGATGGGAGAGCTATCGGGGTACATCGTCCACTACCATCA
477► S D S S V P P E E Q T P V V Q E C Y Q S D G Q S Y R G T S S T T I

BbsI (2149)
BstBI (2146) 2101 CAGGGAAGAAGTGCAGTCTGGGCGAGCTATGTTTCCACACAGGCATTGCAAGACCCAGAGAATTTCCAGATGCTGGCTTGGAGATGAACTACTGCAG
510► T G K K C Q S W A A M F P H R H S K T P E N F P D A G L E M N Y C R

Bsp120I (2218) 2201 GAACCCGGATGGTGAAGGGCCCTTGGTGTACTACCACTGACCCGAGCGTCAGGTGGGAATACTGCAACCTGAAGCGGTGCTCAGAGACAGGAGGGAGT
543► N P D G D K G P W C Y T T D P S V R W E Y C N L K R C S E T G G S

MscI (2308)
NheI (2302) 2301 TAGCTAGTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTAAAAAATGCTTTATTTGTGAAATTTGTGATGC
577► •

HpaI (2440) MfeI (2451)

2401 TATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACCAAGTTAACACAACAATTGCATTATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTT

2501 TTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTT

▶ ◀

2601 CTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATT

SapI (2718) SspI (2775) SmaI (2789)

2701 TTCCAAGGTTTGAAGTACTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTATGAAAATATTCAGAAAATAATTTAAATACA

2801 TCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAG

2901 GAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGTTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGC

141 • N R T Y K L P I L E E I T T K V L

SacI (3050)

3001 TTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCA

122 ◀ 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 S R D V

3101 CCTCATCAGAGTAGGGTGCCTGACAGCCCAATGGTGTCAAAGTCTTCTGCCCGTTGCTCAGACAGACCAATGGCAATGGCTTCAGCACAGACAGT

89 ◀ 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 A C V T

3201 GACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTTCCTCATAGAGC

56 ◀ 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 D E Y L

BspHI (3364) BbsI (3360) XmnI (3356)

3301 ATGGTGATCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACT

22 ◀ M T I K E T A V E V L E L D Q Q S I N F T K M ◀

AseI (3422) SacI (3479)

3401 ATGCCGATATACTATGCCGATGATTAATTGTCAAACACGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCT

SpeI (3577)

3501 CCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATT

3601 GACGTCATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCCAAACCGCATCATCATGGTAATAGCGATG

SnaBI (3705)

3701 ACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCAATAAGTGCATGTAAGTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGG

NdeI (3810)

3801 GCGTACTTGGCATATGATACACTTGTACTGCAAGTGGGAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTAC

PacI (3996) SdaI (3988)

3901 TATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAA

BspLU11I (4006)

4001 ITAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCA

4101 CAAAAATCGACGCTCAAGTCAAGTCAAGGTTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGTCCCTCGTGGCTCTCCTGTTCCG

4201 ACCCTGCCGTTACCGGATACCTGTCCGCCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGC

ApaLI (4320)

4301 TTCGCTCAAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGGTAAGACACGA

4401 CTTATCGCCACTGGCAGCAGCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTAC

4501 ACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAACAAACCACCGCTGGTA

4601 GCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAA

EagI (4756) PacI (4736) SmaI (4745) NotI (4755)

4701 CGAAAACCTACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTG

4801 GTTTTTTGTGTAATCGTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGC

4901 CAGAACATTTCTCTATCGAA