



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA MfeI (82) EcoNI (96)

101 GAGAAGGTGGCGGGGTAACGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGGCCCGCCCTACCTGAGGCC EcoNI (287)

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
AgeI (552) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCCCTACCTGAGATCACCGGTACCATTGGAGTCTCAGGCAACCCAGAGAGCACCACCTTTTT 1► M E S S G N P E S T T F F

StuI (635)
601 T T A C T A T G A C C T T C A G A G C C A G C C G T G T G A G A A C C A G G C T G G G T C T T T G C T A C C C T C G C C A C C A C T G T C C T A T A C T G C C T G G T G T T T C C T C A G C C T A
13► Y Y D L Q S Q P C E N Q A W V F A T L A T T V L Y C L V F L L S L
701 G T G G G C A A C A G C C T G G T C C T G T G G G T C C T G G T G A A G T A T G A G A G C C T G G A G T C C C T C A C C A A C A T C T T C A T C C T A A C C T G T G C C T C T C A G A C C T G G T G T
47► V G N S L V L W V L V K Y E S L E S L T N I F I L N L G L C L S D L V
801 T C G C C T G C T T G C C T G T G T G G A T C T C C C A T A C C A T A C C A C T Y G G G T G G T G C T G G G A G A C T T C C T G C A A A C T C C T A A T A T G A T C L T T C C A T C A G C C T
80► F A C L L P V W I S P Y H W G W V L G D F L C K L L N M I F S I S L

BspHI (926)
901 C T A C A G C A G C A T C T T C T C T G A C C A T C A T G A C C A T C C A C C G T A C C T G T C G G T A G T G A G C C C C T C T C C A C C C T G C G C T C C C C A C C C T C C G C T G C C G G
113► Y S S I F F L T I M T I H R Y L S V V S P L S T L R V P T L R C R

NcoI (1010)
BstEII (1005) 1001 G T G C T G G T G A C C A T G G C T G T G T G G G T A G C C A G C A T C C T G T C C T C C A T C C T C G A C A C C A T C T T C C A C A A G G T G C T T T C T C G G G C T G T G A T T A T T C C G A A C
147► V L V T M A V W V A S I L S S I L D T I F H K V L S S G C D Y S E

Acc65I (1106)
BbrPI (1101) 1101 T C A C G T G G T A C C T C A C C T C C G T C T A C C A G C A C A A C C T C T T C T T C C T G T G C C C T G G G G A T T A C C T G T T C T G C T A C G T G G A G A T C C T C A G G A C C C T G T T
180► L T W Y L T S V Y Q H N L F F L L S L G I I L F C Y V E I L R T L F

BsrBI (1200)
SandI (1275) 1201 C C G C T C A C G C T C C A A G C G G C C C A C C G C A G C T C A A G C T A T C T T C G C C A T C G T G G T G G C C T A C T T C C T C A G T G G G G T C C C T A C A A C T T C A C C T G T T T
213► R S R S K R R H R T V K L I F A I V V A Y F L S W G P Y N F T L F

BspEI (1328)
1301 C T G C A G A C G C T G T T T C G G A C C A G A T C A T C C G G A G C T G C G A G G C C A A A C A G C A G C T A G A A T A C G C C T G C T A C T G C C G C A A C C T C G C C T T C C C A C T
247► L Q T L F R T Q I I R S C E A K Q Q L E Y A L L I C R N L A F S H

BbsI (1423)
BspLU1I (1458) 1401 G C T G C T T T A A C C C G G T G C T C T A T G T C T T C G T G G G G T C A A G T T C C G C A C A C C T G A A A C A T G T T C C G G C A G T T C T G G T T C T G C C G G C T G C A G G C A C C
280► C C F N P V L Y V F V G V K F R T H L K H V L R Q F W F C R L Q A P

MscI (1580)
NheI (1574) 1501 C A G C C C A G C C T C G A T C C C C A C T C C C C T G G T G C C T T C G C C T A T G A G G G C G C C T C T T C T A C T A G G G G C C T G T G G C T A G T G G C C A G A C A T G A T A A G A T A
313► S P A S I P H S P G A F A Y E G A S F Y •

1601 C A T T G A T G A G T T T G G A C A A C C A C A A C T A G A A T G C A G T G A A A A A A T G C T T T A T T T G T G A A A T T G T G A T G C T A T T G C T T A T T T G T A A C A T T A T A A G C

HpaI (1712) MfeI (1723)
1701 T G C A A T A A A C A A G T T A A C A C A C A A T T G C A T T C A T T T A T G T T C A G G T T C A G G G G A G G T G T G G G A G G T T T T T A A G C A A G T A A A C C T C T A C A A T

EcoRI (1808)
1801 G T G G T A T G G A A T T C T A A A A T A C A G C A T A G C A A A C T T T A A C C T C C A A A T C A A G C C T C T A C T T G A A T C C T T T T C T G A G G G A T G A A T A A G C A T A G G C A T C A

SapI (1990)
1901 G G G G C T G T T G C C A A T G T G C A T T A G C T G T T T G C A G C C T C A C C T T C T T C A T G G A G T T T A A G A T A T A G T G T A T T T C C C A A G G T T T G A A C T A G C T T C A T T

SspI (2047) SwaI (2061)
2001 T C T T T A T G T T T T A A A T G C A C T G A C C T C C C A C A T T C C T T T T A G T A A A A T A T T C A G A A A T A A T T T A A A T A C A T C A T T G C A A T G A A A A T A A A T G T T T T T A

2101 T T A G G C A G A A T C C A G A T G C T C A A G G C C T T C A T A A T A T C C C C C A G T T T A G T A G T T G G A C T T A G G G A C A A A G G A A C C T T T A T A G A A A T T G G A C A G C A A G

2201 A A A G C G A G C T T C T A G C T T T A G T T C C T G G T G T A C T T G A G G G G A T G A G T T C C T C A A T G G T G G T T T T G A C C A G C T T G C C A T T C A T C T C A A T G A G C A C A A A G C
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 F C

SacI (2322)
2301 A G T C A G G A G C A T A G T C A G A G A T G A G C T C T G C A C A T G C C A C A G G G G C T G A C C A C C T G A T G G A T C T G T C C A C C T C A T C A G A G T A G G G G T G C C T G A C A G C
113◄ 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 V A

StuI (2486)

2401 CACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGG
80 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 H
2501 ACAGCAGAGATGATCTCCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCA
46 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 E V

BbsI (2632)

XmnI (2628)

AseI (2694)

2601 CCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAAT
13 L E L D Q Q S I N F T K M

SacI (2751)

2701 TGTCAAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTG

SpeI (2849)

2801 CGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTACTAGTCAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAAT

SnaBI (2977)

2901 CCCCCTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAG

NdeI (3082)

3001 GAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTACCCTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATG

3101 TACTGCCAAGTGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTC

PacI (3268)

SdaI (3260)

BspLU11I (3278)

3201 AATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAAGCCAGCA

3301 AAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGG

3401 CGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCG

ApaLI (3592)

3501 CTTTTCTCCCTTCGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGA

3601 ACCCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGT

3701 AACAGATTAGCAGAGCGAGGTATGTAGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCG

3801 CTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCA

3901 GATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTC

EagI (4028)

PacI (4008)

SwaI (4017)

NotI (4027)

4001 ATGGCTAGTTAATTAACATTTAAATCAGCGGCCCAATAAAATATCTTTATTTTATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATA

4101 CGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCGAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA