



PvuI (7)
SgfI (6) 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
AgeI (552) 501 TCTGTTCTGCGCGCTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTACCATTGGGGCGGCTTTGCACCAAGTTCCTGACCTCTGTGGG
1 M G R L C T K F L T S V G

BbrPI (687)
601 CTGCTGATTTTGTGTTGGTACTGGATCTGGGAGCATCAAGTCTGGGTGAGCCACCTGCTTCTGACTACATCCGACTTCCAGTGTGAGTGG
13 C L I L L L V T G S G S I K V L G E P T C F S D Y I R T S T C E W

NsiI (783)
NdeI (780)
701 TTCCTGGATAGCGCGTGGACTGCAGTTCTCAGCTCCGCCTGCACTACAGGTGATGTTCTTCGAGTTCTCTGAAAACCTCATATGCACTCCCGAGGAACA
47 F L D S A V D C S S Q L R L H Y R L M F F E F S E N L I C I P R N

DraIII (807)
801 GCGCCAGCACCGTGTGTGTGCCACATGAAATGAATAGCCGGTCCAGTCAGACAGATACCAGATGAACTGTGGGCTGAGCAGACAGCTGTGGCA
80 S A S T V C V C H M E M N R P V Q S D R Y Q M E L W A E H R Q L W Q
901 GGGCTCCTTCAGCCCAAGTGGTAATGTGAAGCCCTAGCTCCAGACACCTCACACTCCACCAATGTGTCCGACGAATGGCTGCTGACCTGGAATAAC
113 G S F S P S G N V K P L A P D N L T L H T N V S D E W L L T W N N

BsrGI (1022) **NcoI (1040)** **EcoRI (1075)**
1001 CTGTACCCATCGAACAACCTACTGTACAAGACCTCATCTCCATGGTCAACATCTCCAGAGAGGACAACCCTGCAGAATTCATGCTATAATGTGACCT
147 L Y P S N N L L Y K D L I S M V N I S R E D N P A E F I V Y N V T

BsaBI (1125)
1101 ACAAGGAACCCAGGTGAGCTTCCCGATCAACATCCTGACGTCAGGGGTCTACTATACGGCGGTGTGAGGGTCCAGATCCAGATACTCACTGGCACCTG
180 Y K E P R L S F P I N I L T S G V Y Y T A R V R V R S Q I L T G T W

BbrPI (1221) **BstEII (1272)**
1201 GAGTGAGTGGAGTCTAGCATCACGTGGTACAACCACTTCCAGCTGCCCTGATACAGCGCCTTCCACTGGGGTCCACATCTCTGCCTCTGCATCCCG
213 S E W S P S I T W Y N H F Q L P L I Q R L P L G V T I S C L C I P
1301 TTGTTTTGCTGTCTGTACTTACGATTACCAAGATTAAGAAGATATGGTGGGACCAGATCCACCCAGCAGCAGTCCCTTGGTGCCATCATCA
247 L F C L F C Y F S I T K I K K I W W D Q I P T P A R S P L V A I I

XbaI (1479)
1401 TTCAGGATGCACAGGTGCCCTCTGGGATAAGCAGACCCGAAGCCAGGAGTCAACCAAGTACCCGCACTGGAAAACCTGTCTAGACAAGCTGCTGCCCTG
280 I Q D A Q V P L W D K Q T R S Q E S T K Y P H W K T C L D K L L P C

BbsI (1524) **NcoI (1592)**
1501 CTTGCTGAAGCACAGAGTAAAGAAGACAGACTTCCCGAAGGCTGCCCAACCAAGTCTCCAGAGTCTGGAAAGGGGGCTGGTGTCCCATGGAG
313 L L K H R V K K K T D F P K A A P T K S P Q S P G K A G W C P M E
1601 GTCAGCAGGACCGTCTCTGGCCAGAGAATGTTAGTGTAGTGTGGTGCCTGTATGGAGCTGTTTGGGCCCCAGTACAGAGTGTGGAGGAGGAAGA
347 V S R T V L W P E N V S V S V V R C M E L F E A P V Q S V E E E E
1701 ATGAGATGTCAAAGAGGACCTGAGCATGTACCTGAGAACAGCGGAGGCTGCGGCTTCCAGGAGAGCCAGGCAGACATCATGGCTCGGCTCACTGAGAA
380 D E M V K E D L S M S P E N S G G C G F Q E S Q A D I M A R L T E N
1801 CCTGTTTTCCGACTTGTGGAGGCTGAGAATGGGGGCTTGGCCAGTCAAGCTTGGCAGAGTCACTCCCTCTGCCTTCAGGAGTGGGAGGCTTCT
413 L F S D L L E A E N G G L G Q S A L A E S C S P L P S G S G Q A S

Bsp120I (1924)
NcoI (1919)
1901 GTATCCTGGGCTGCCTCCCATGGGCCCCAGTGGAGGCCACATGCCAGGTACAGAGCAGCCTTACACCCAGACCTCTTTCAGGCAGCCAGCCC
447 V S W A C L P M G P S E E A T C Q V T E Q P S H P D P L S G S P A

ApaLI (2003)
2001 AGAGTGCACCTACTCTGGCTTGCACGCAGGTCCCACTTGTCTTGCAGACAATCTGCCTACCGAGTTTTAGTACTGCTGTAGCCCGCCCAATCC
480 Q S A P T L A C T Q V P L V L A D N P A Y R S F S D C C S P A P N P
2101 TGGAGAGCTGGCTCCAGAGCAGCAGGCTGATCATCTGGAAGAAGAGGACCTCAAGCCCGGCTGACCCCATCTCAGGGCCACCAATGCAGCCA
513 G E L A P E Q Q A D H L E E E E P S P A D P H S S G P P M Q C P
2201 GTGGAGAGCTGGGAGCAGATCCTTACATGAGTGTCTGCAGCATGGGCGAGTGTGGCTCCACCCAGCCCTGCCGGTGGCTACCAGGAGTTTGTGC
547 V E S W E Q I L H M S V L Q H G A A A G S T P A P A G G Y Q E F V

BamHI (2325) **XhoI (2379)**
2301 AGGCAGTGAAGCAGGGTCCGCCAGGATCCTGGGCTGCTGGTGTGAGCCTTCTGGAGACCCGGTTACAAGCCCTTCTGAGCCCTGCTCAGCAGCAA
580 Q A V K Q G A A Q D P G V P G V R P S G D P G Y K A F S G L L S S N

SacII (2406)
2401 TGGCATCCGCGGGACACAGCAGCGGGGACTGACCGTGGGCATGGAGGCTACAAGCCCTTCCAGAATCCTGTTCTTAACCAGTCCCCTAGCTCCGTTG
613 G I R G D T A A A G T D G G H G G Y K P F Q N P V P N Q S P S S V
2501 CCCTTATTACTTTTCGACTAGACAGGCTGTACCCAGTCCCTGAACTCAGACCCACCCAAAAGCCCCAGAATGCCTTGGTCTGGAGCTGGGGC
647 P L F T F G L D T E L S P S P L N S D P P K S P P E C L G L E L G
2601 TCAAAGGAGTACTGGTGAAGGCCCTCCTCTGCAGATCAGTGGCCAAAGCCCTTTGGGATGACCTGGGCTTGGTATTGTGACTCGTCCCTCAC
680 L K G G D W V K A P P P A D Q V P K P F G D D L G F G I V Y S S L T

2701 TTGCCACTTGTGTGGCCACCTGAAGCAACACCACAGCCAGGAGGAAGGTGGCCAGAGCCCATCGTTGCTAGCCCTGGCTGTGGCTGCTGCTATGATGAC
713▶ C H L C G H L K Q H H S Q E E G G Q S P I V A S P G C G C C Y D D
BsaBI (2801) Bsu36I (2845)
2801 AGATCACCATCCCTGGGAGCCTCTCGGGGCCTTGGAAAGCTGTCTGAGGGGAATACCACCAGAAGCCAACCTCATGTCAGCACCCAAGACACCCTCAA
747▶ R S P S L G S L S G A L E S C P E G I P P E A N L M S A P K T P S
Bsp120I (2919)
2901 ACTTGTACAGGGAGGGCAAGGGCCCTGGTCACTCTCTGTTCCAGCCAGACACCGAGGTGCCTGTGGGCGCCTGGCATTGCTGTTTCTTAGGTGAG
780▶ N L S G E G K G P G H S P V P S Q T T E V P V G A L G I A V S •
SpeI (3032)
3001 TGAGTGTGCTGTTGTTGCTGAGGTCTGTGCTGACTAGTCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGA
3101 AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACA
HpaI (3201) MfeI (3212) EcoRI (3297)
3201 AGTTAAACAACAACAAATTGCATTCAATTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAA
3301 TTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGC
SapI (3479)
3401 CAATGTGCATTAGCTGTTTGACGCTCACCTTCTTTCATGAGGTTAAGATATAGTGATTTTTCCCAAGGTTTGAACCTAGCTCTTCATTCTTTATGTTT
SspI (3536) SwaI (3550)
3501 TAAATGCACTGACCTCCACATTCCTTTTTAGTAAAAATTCAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTATTAGGCAGAAT
3601 CCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGACTTAGGGAACAAAGGAACCTTTAATAGAAATTTGACAGCAAGAAAGCGAGCTT
3701 CTAGCTTTAGTTCCTGGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTCCATTCACTCAATGAGCACAAGCAGTCAGGAGCA
-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 D P A
SacI (3811)
3801 TAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGT
109▶ 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 V I T D
3901 CAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACGACAGACAGTACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGAT
76▶ 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 V A S I
4001 GATCTCCCAAGTCTGGTCTGATGGCCGCCGACATGGTGTCTGTTGCTCATAGAGCATGGTATCTTCTCAGTGGCGACTCCACCAGCTCCAGA
43▶ 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 L E L
BbsI (4121) XmnI (4117) AseI (4183)
4101 TCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAG
9▶ D Q Q S I N F T K M
SacI (4240)
4201 CGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCTACCGCCATTTGCGTCAATGGGG
SpeI (4338)
4301 CGGAGTTGTTACGACATTTGGAAAGTCCCCTGATTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTC
SnaBI (4466)
4401 AAACCGTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGGAAAGTCCCAT
NdeI (4571)
4501 AAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTAAGTCCAAAGT
4601 GGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGAAACATACGTCATTATTGACGTCAATGGGCGGGG
PaeI (4757) SdaI (4749) BspLU11I (4767)
4701 GTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGA
4801 ACCGTAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGAC
4901 AGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGGCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCT
ApaLI (5081)
5001 TCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTGCTCCAAGCTGGGCTGTGTGCACGAAACCCCGTTC
5101 AGCCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAG
5201 CAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAG
5301 CCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCA
5401 GAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAACTCACGTTAAGGGATTTTGGTCAATGGCTAGTTA
PaeI (5497)
EagI (5517) SwaI (5506) NotI (5516)
5501 ATTAACATTTAAATC AGCGGCCGAATAAAATATCTTTATTTTTCATTACATCTGTGTGGTTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATC
5601 AAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA