



PvuI (7)

SgfI (6)

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203)

201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTCACGCGCCCGCCGCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCCGCCCTCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTGTTTCGTTT

AgeI (552)

501 TCTGTTTGGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGGCCACCATGGTGTTCGATGTGGACACGGAAGAGA
601 CAAATTTTATCTTTTTAAATATGCTCTTAGTTCAGAGTCTTTGGGTTTCGATGGTTTCCTAAAACCTACCTTGTGAAGTAAAGTAAATATCCCAG
111 Q I L I F L N M L L V S R V F G F R W F P K T L P C E V K V N I P
701 AGGCCATGTGATCGTGGACTGCACAGACAAGCATTGACAGAAATCCCTGAGGGCATTCCACTAACACCACCAATCTTACCCTTACCATCAACCACAT
441 E A H V I V D C T D K H L T E I P E G I P T N T T N L T L T I N H I

ClaI (849)

801 ACCAAGCATCTCCAGATTCCTCCGTAGGCTGAACCATCTGGAAGAAATCGATTTAAGATGCAATTGTGTACTGTCTACTGGGGTCAAAGCCAAAT
771 P S I S P D S F R R L N H L E E I D L R C N C V P V L L G S K A N
901 GTGTGTACCAAGAGGCTGCAGATTAGACCTGGAAGCTTTAGTGGACTCTGTACTTAAAGCCCTTTACCTGGATGGAACCAACTTCTGGAGATACCAC
111 V C T K R L Q I R P G S F S G L S D L K A L Y L D G N Q L L E I P
1001 AGGATCTGCCATCCAGCTTACATCTTCTGAGCCTTGGAGCTAACAAATCTTCCATCAGGAAGGAGAATCTAACAGAACTGGTCAACATTGAAACT
144 Q D L P S S L H L L S L E A N N I F S I T K E N L T E L V N I E T L
1101 CTACCTGGGTCAAACCTGTTATTATCGAAATCCTTGAATGTTTCTATTCTATTGAAAAAGATGCTTTCCTAGTTATGAGAAATTTGAAGTTCTCTCA
177 Y L G Q N C Y Y R N P C N V S Y S I E K D A F L V M R N L K V L S
1201 CTAAGATAACAATGTCACAGCTGTCCCAACCTTTGCCACCTAATTTACTAGAGCTCTATCTTTATAACAATATCATTAAAGAAAATCAAAGAAAATG
211 L K D N N V T A V P T T L P P N L L E L Y L Y N N I I K K I Q E N

DraIII (1381)

BsrGI (1377)

1301 ATTTTAATAACCTCAATGAGTTGCAAGTCTTGACCTAAGTGGAAATTGCCCTCGATGTTATAATGTCCCATATCCGTGTACACCGTGTGAAAATAATTC
244 D F N N L N E L Q V L D L S G N C P R C Y N V P Y P C T P C E N N S
1401 CCCCTTACAGATCCATGACAATGCTTTCAATTCATTGACAGAAATTAAGTTTACAGTTTACACAGTAATCTCTTCCAGCATGTGCCCAACATGGTTT
277 P L Q I H D N A F N S L T E L K V L R L H S N S L Q H V P P T W F
1501 AAAAAATGAGAAACCTCCAGGAAGTACCTCTCCAAAACCTACTTGGCCAGAGAAATGAGGAGGCCAAATTTTTGCAATTTCTTCCCAACCTTGTG
311 K N M R N L Q E L D L S Q N Y L A R E I E E A K F L H F L P N L V

NsiI (1639)

1601 AGTTGGATTTTTCTTTCAATTATGAGCTGCAGGTCTACCATGCATCTATAACTTTACCACATTCACTCTTTCATTGGAAAACCTGAAAATCTGCGTGT
344 E L D F S F N Y E L Q V Y H A S I T L P H S L S S L E N L K I L R V
1701 CAAGGGTATGCTTTAAAGAGCTGAAAACCTCCAGTCTTTCTGTATTGCACAAGCTCCCAGGCTGGAAGTCTTGACCTTGGCACTAATCTCATAAAA
377 K G Y V F K E L K N S S L S V L H K L P R L E V L D L E V L D L E V L P T F I K
1801 ATTGCTGACCTCAACATATTCAAACATTTTAAAACCTCAAACCTCATAGACCTTTTCAAGTAAAGATATCTCCTTCAAGAGAGTCAAGAGAAGTTGGCT
411 I A D L N I F K H F E N L K L I D L S V N K I S P S E E S R E V G

Bsp120I (1935)

StuI (1951)

1901 TTTGTCCTAATGCTCAAACCTTCTGTAGACCGTCATGGGCCAGGTCCTTGGAGCCTTACACTATTTCCGATACGATGAATATGCACGGAGCTGCAGGTT
444 F C P N A Q T S V D R H G P Q V L E A L H Y F R Y D E Y A R S C R F

BstXI (2045)

2001 CAAAAACAAAGAGCCACCTTCTTTCTTGCTTTGAATGCAGACTGCCACATATATGGGCAGACCTTAGACTTAAAGTAGAAATAACATATTTTTTATTTAA
477 K N K E P P S F L P L N A D C H I Y G Q T L D L S R N N I F F I K
2101 CCTTCTGATTTTCAAGCATCTTTTCTTCAATGCCTCAACTTATCAGGAAACACCTTGGCCAACTCTTAATGGCAGTGAAGTCTGGCCGTTGAGAG
511 P S D F Q H L S F L K C L N L S G N T I G Q T L N G S E L W P L R

SapI (2259)

2201 AGTTGCGTACTTAGACTTCTCCAACAACCGGCTTGATTTACTCTACTCAACAGCCTTTGAAGAGCTCCAGAGTCTTGAAGTCTGGATCTAAGTAGTAA
544 E L R Y L D F S N N R L D L L Y S T A F E E L Q S L E V L D L S S N

BspHI (2374)

2301 CAGCCACTATTTTCAAGCAGAAGGAATTAATCAGTGTAACTTTTACCAAGAAATACGGCTTCTGGACAACTCATGATGAATGATAATGACATCTCT
577 S H Y F Q A E G I T H M L N F T K K L R L L D K L M M N D N D I S

BstBI (2434)

2401 ACTTCGGCCAGCAGGACCATGAAAGTGACTCTCTCGAATTCGGAGTTCAGAGGCAACCATTTAGATGTTCTATGGAGAGCCGGTGATAACAGATACT
611 T S A S R T M E S D S L R I L E F R G N H L D V L W R A G D N R Y

XmnI (2513)
2501 TGGACTTCTTCAAGAATTTGTTCAATTTAGAGGTATTAGATATCTCCAGAAATTCCTGAATTCCTTGCCTCCTGAGGTTTTTGAGGGTATGCCGCCAAA
644▶ L D F F K N L F N L E V L D I S R N S L N S L P P E V F E G M P P N
2601 TCTAAAGAATCTCTCCTTGGCCAAAAATGGGCTCAAATCTTTCTTTGGGACAGACTCCAGTTACTGAAGCATTGGAAATTTGGACCTCAGCCATAAC
677▶ L K N L S L A K N G L K S F F W D R L Q L L K H L E I L D L S H N

SspI (2791)
2701 CAGCTGACAAAAGTACCTGAGAGATTGGCCAACTGTTCCAAAAGTCTCACAACACTGATTCTTAAGCATAATCAAATCAGGCAATTGACAAAATATTTTC
711▶ Q L T K V P E R L A N C S K S L T T L I L K H N Q I R Q L T K Y F

BbsI (2861)
2801 TAGAAGATGCTTTGCAATTGCGCTATCTAGACATCAGTTCAAATAAAATCCAGGTCATTGAGAAGACTAGCTCCAGAAAATGCCTCAACAATCTGGA
744▶ L E D A L Q L R Y L D I S S N K I Q V I Q K T S F P E N V L N N L E

HpaI (2964)
2901 GATGTTGGTTTTACATCACAATCGCTTTCTTTGCAACTGTGATGCTGTGTGGTTTGTCTGGTGGGTTAACCATACAGATGTTACTATTCCATACCTGGCC
777▶ M L V L H H N R F L C N C D A V W F V W W V N H T D V T I P Y L A

Bst1107I (3062) BglIII (3077)
3001 ACTGATGTGACTTGTGTAGGTCCAGGAGCACACAAAGGTCAAAGTGTGATATCCCTTGATCTGTATACGTGTGAGTTAGATCTCACAAACCTGATTCTGT
811▶ T D V T C V G P G A H K G Q S V I S L D L Y T C E L D L T N L I L
3101 TCTCAGTTTCCATATCATCAGTCCCTCTTTCTTATGGTAGTTATGACAACAAGTACCTCTTTTCTGGGATGTGGTACATTATTATTTTGGAAAGC
844▶ F S V S I S S V L F L M V V M T T S H L F F W D M W Y I Y Y F W K A

BamHI (3240) NdeI (3280)
3201 AAAGATAAAGGGGTATCAGCATCTGCAATCCATGGAGTCTGGATCCTATCCCTATGATGTGCCAGACTATGCTGGCTATCCATATGATGTTCTCTGATTAT
877▶ K I K G Y Q H L Q S M E S G S Y P Y D V P D Y A G Y P Y D V P D Y

NheI (3337)
3301 GCTGGATACCCTTATGATGTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAG
911▶ A G Y P Y D V P D Y A •

HpaI (3475)
3401 TGAAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAGTTAACACAACAATTGCATTCATT
3501 TTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTT
3601 TAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCT

SapI (3753)
3701 CACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGTTTGAAGTACTGCTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCC

SspI (3810) SmaI (3824)
3801 TTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATA
3901 TCCCCAGTTTAGTAGTTGGACTTAGGGAAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCAGCTTCTAGCTTTAGTTCTCTGGTGTACTTGA
4001 GGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACAT
134▶ P I L E E I T 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

BstXI (4114)
4101 GCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACA
101▶ 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 F D K Q G N S V

StuI (4249)
4201 GCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGG
67▶ 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 I E G T K T R I A

BspHI (4399)
4301 CCGCCCCGACATGGTGCTTGTGCTCCTCATAGAGCATGGTGTCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTT
34▶ A G V H H K N 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

XmnI (4391)
4401 CATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTG
1▶ M

AseI (4457)
4501 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAG

SpeI (4612)
4601 TCCCGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGT

SnaBI (4740)
4701 ACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCA

4801 GGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACC
4901 CATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGC

PacI (5031)
5001 CATTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGGAAACCGTAAAAAGGCCGCGTTGCTGGCG
5101 TTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTC
5201 CCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGCGCTTTCTCATAG

ApaLI (5355)
5301 CTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTAGCCCGACCGCTGCGCCTTATCCGGT
5401 AACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTA
5501 CAGAGTTCCTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGATTGG
5601 TAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCT

EagI (5791)
5701 TTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACTCACGTTAAGGGATTTTGGTGTAGTTAATTAAACATTTAAATCAGCGGCCGCAA
5801 TAAAAATCTTTATTTTTCATTACATCTGTGTGGTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAAACAAAACGAAACAAAACAACTA
5901 GCAAATAGGCTGTCCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA