



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

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **PvuII (239)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGGCC
EcoNI (287)

301 GCCATCCACGCCGGTTGAGTGCAGTCTGCCGCCTCCCGCCTGTGGTGCCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

AgeI (552) **BspHI (568)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTAGGAGGGCCATCATGACCAAAGACAAAGAACCTATTGTTAAA
1 M T K D K E P I V K

601 AGCTTCCATTTTGTTCCTTATGATCATAATAGTTGGAACAGAAATCCAGTTTCTCCGACGGAATGAATTTGCAGTAGACAAGTCAAAAAGAGGTCTTA
11 S F H F V C L M I I I V G T R I Q F S D G N E F A V D K S K R G L
701 TTCATGTTCCAAAAGACCTACCGCTGAAAACCAAAGTCTAGATATGCTCAGAACTACATCGCTGAGCTTACAGTCTCTGACATGAGCTTTCTATCAGA
44 I H V P K D L P L K T K V L D M S Q N Y I A E L Q V S D M S F L S E
801 GTTGACAGTTTGTGACTTTCCATAACAGAAATCCAGTACTTGTATTAAGTGTTCGAAATCAACCAGGATTTAGAATATTTGGATTTATCTCATAAT
77 L T V L R L S H N R I Q L L D L S V F K F N Q D L E Y L D L S H N

EcoRV (911) **BglIII (947)** **EcoO109I (970)**
901 CAGTTGCAAAGATATCCTGCCATCCTATTGTGAGTTTACGGCATTAGATCTCTCATTCAATGATTTCAAGGCCCTGCCCATCTGTAAGGAATTTGGCA
111 Q L Q K I S C H P I V S F R H L D L S F N D F K A L P I C K E F G
1001 ACTTATCACAACCTGAATTTCTGGGATTGAGTGTATGAAGCTGCAAAAATTAGATTTGCTGCCAATTGCTCACTTGCATCTAAGTTATATCCTTCTGGA
144 N L S Q L N F L G L S A M K L Q K L D L L P I A H L H L S Y I L L D
1101 TTTAAGAAATTTATATAAAAAGAAATGAGACAGAAAGTCTACAAATTTCTGAATGCAAAAACCTTCACCTGTTTTTACCACCACTAGTTTATTCGCT
177 L R N Y Y I K E N E T E S L Q I L N A K T L H L V F H P T S L F A

PshAI (1266)
1201 ATCCAAGTGAACATATCAGTTAATACTTTAGGGTGCTTACAACGACTAATATTAATTAAGTGAATGATGACAACGTCAAGTTTTTATTAAATTTTATCAG
211 I Q V N I S V N T L G C L Q L T N I K L N D D N C Q V F I K F L S
1301 AACTCACCAGAGTTCAACCTTACTGAATTTTACCCTCAACACATAGAAACGACTGGAAATGCCTGGTCAGAGTCTTTCAATTTCTTTGGCCCAAAC
244 E L T R G S T L L N F T L N H I E A T T W K C L V R V F Q F L W P K P
1401 TGTGGAATATCTCAATATTTACAATTTAACAATAATTGAAAGCATTGTAAGAAGATTTTACTTATTCTAAAACGACATTGAAAGCATTGACAATAGAA
277 V E Y L N I Y N L T I I E S I R E E D F T Y S K T T L K A L T I E

BsrGI (1540) **HpaI (1574)**
1501 CATATCACGAACCAAGTTTTTCTGTTTTACAGACAGCTTTGTACACCGTGTTCCTGAGATGAACATTATGATGTTAACCATTTTACAGATACACCTTTTA
311 H I T N Q V F L F S Q T A L Y T V F S E M N I M M L T I S D T P F

Psp1406I (1656)
1601 TACACATGCTGTGCTCCTCATGCACCAAGCACATTCAAGTTTTTGAACCTTACCAGAACGTTTTTACAGATAGTATTTTTGAAAAATGTTCCACGTTAGT
344 I H M L C P H A P S T F K F L N F T Q N V F T D S I F E K C S T L V

BspHI (1759)
1701 TAAATGGAGACACTTATCTTACAAAAGAAATGATTAAGAGCTTTTCAAAGTAGGCTCATGACGAAGGATATGCCTTCTTTGAAAATACTGGATGTT
377 K L E T L I L Q K N G L K D L F K V G L M T K D M P S L E I L D V

EcoRI (1805)
1801 AGCTGGAATCTTTGGAATCTGGTAGACATAAAGAAAACCTGCACTTGGGTTGAGAGTATAGTGGTGTAAATTTGCTTCAAATATGCTTACTGACTCTG
411 S W N S L E S G R H K E N C T W V E S I V V L N L S S N M L T D S
1901 TTTTACAGATGTTTACCTCCAGGATCAAGGTACTTGTATCTTACAGCAATAAAAATAAAGAGCGTTTCTAAACAAGTCGTAACCTGGAAGCTTTGCAAGA
444 V F R C L P P R I K V L D L H S N K I K S V P K Q V V K L E A L Q E
2001 ACTCAATGTTGCTTTCAATTTTAACTGACCTTCTGGATGTGGCAGCTTTAGCAGCCTTTCTGTATTGATCATTGATCACAATTCAGTTTCCACCCA
477 L N V A F N S L T D L P G C G S F S S L S V L I I D H N S V S H P
2101 TCGGCTGATTTCTCCAGAGCTGCCAGAAGATGAGTCAATAAAAAGCAGGGGACAACTTCAATGATACCTGTGAGCTAAGAGAATTTGTCAAATAA
511 S A D F F Q S C Q K M R S I K A G D N P F Q C T C E L R E F V K N

BspLU11I (2296)
2201 TAGACCAAGTATCAAGTGAAGTGTAGAGGGCTGGCCTGATTCTTATAAGTGTGACTACCCAGAAAAGTATAGAGGAAGCCCACTAAAGGACTTTTACAT
544 I D Q V S S E V L E G W P D S Y K C D Y P E S Y R G S P L K D F H M

XcmI (2350)
2301 GTCTGAATTATCCTGCAACATAACTCTGCTGATCGTCACCATCGGTGCCACCATGCTGGTGTGGCTGTGACTGTGACCTCCCTCTGCATCTACTTGGAT
577 S E L S C N I T L L I V T I G A T M L V L A V T V T S L C I Y L D
2401 CTGCCCTGGTATCTCAGGATGGTGTGCCAGTGGACCCAGACTCGGCGCAGGGCCAGGAACATACCTTAGAAGAACTCAAAGAAACCTCCAGTTTCATG
611 L P W Y L R M V C Q W T Q T R R R A R N I P L E E L Q R N L Q F H

Acc65I (2549) **BspHI (2588)**
2501 CTTTTATTTTATATAGTGAACATGATTCTGCCTGGGTGAAAAGTGAATTTGGTACCTTACCTAGAAAAAGATATACAGATTTGCTTTCATGAGAGAAA
644 A F I S Y S E H D S A W V K S E L V P Y L E K E D I Q I C L H E R N
2601 CTTTGTCCCTGGCAAGAGCATTGTGAAAATATCATCAACTGCATTGAGAAGAGTTACAAGTCCATCTTTGTTTTGTCTCCCACTTTGTCCAGAGTGAG
677 F V P G K S I V E N I I N C I E K S Y K S I F V L S P N F V Q S E

BspHI (2741)
2701 TGGTGCCATTACGAACTCTATTTTGGCCATCACAATCTTTTTCATGAAGGATCTAATAACTTAATCCTCATCTTACTGGAACCCATTCCACAGAACAGCA
711 W C H Y E L Y F A H H N L F H E G S N N L I L I L L E P I P Q N S

BspHI (2830)
2801 TTCCAACAAGTACCACAAGCTGAAGGCTCTCATGACGACGGGACTTATTTGCAAGTGGCCCAAGGAGAAAAGCAAACGTGGGCTTTTTGGGCTAACAT
744 I P N K Y H K L K A L M T Q R T Y L Q W P K E K S K R G L F W A N I

XcmI (2989)

2901 TAGAGCCGCTTTTAAATATGAAATTAACACTAGTCACTGAAAACAATGATGTGAAATCTTAAAAAATTTAGGAAATTCAACTTAAGAAACCATTATTTAC
777▶ R A A F N M K L T L V T E N N D V K S •

MscI (3057)
NheI (3051)

3001 TTGGATGATGGTGAATAGTACAGTCGTAAGTNACTGTCTGGAGGTGCCTCCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGCAAACCA

HpaI (3189)

3101 CAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACA

EcoRI (3285)

3201 CAATTGCATTCATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAATACA
3301 GCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTGAACTCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTGCCAATGTGCATTA

SapI (3467)

3401 GCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTCTTTCATTTCTTTATGTTTTAAATGCACTGA

SwaI (3538) EcoO109I

3501 CCTCCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAA
3601 GGCCCTTCATAATATCCCCAGTTTAGTAGTTGGAAGTACTAGGAAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTT
141 • N

SacI (3799)

3701 CCTGGTGTACTTGAGGGGATGAGTTCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATG
139▶ 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 Y D S I
3801 AGCTCTCTGCACATGCCACAGGGGTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCT
105▶ 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 F D K Q

StuI (3963)

3901 GCCCCTTGTCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGT
72▶ 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 I E G T
4001 CTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAG
39▶ 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 D Q Q S

AseI (4171)

4101 ATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGT
5▶ I N F T K M

SacI (4228)

4201 CTCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTAC
4301 GACATTTTGAAAGTCCCCTTGATTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCC

SnaBI (4454)

4401 ACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGGAAAGTCCATAAGGTACATGTAC

NdeI (4559)

4501 TGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCCAAGTGGGCAGTTTACC
4601 GTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGCGGGGGTCTTGGGCGG

PacI (4745)

PstI (4738) SdaI (4737) BspLU11I (4755)

4701 TCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGG
4801 CCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAATAATCGACGCTCAAGTCAAGGTTGGCGAAACCCGACAGGACTATAAG
4901 ATACCAGGCGTTTCCCCCTGGAAGTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTG

ApaLI (5069)

5001 GCGCTTTCTCATAGCTCACGCTGAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCT
5101 GCGCCTTATCCGGTAACTATCGTCTTGAAGTCCAAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTA
5201 TGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTC
5301 GGAAAAAGAGTTGGTAGCTCTTATCCGCAAAACAAACCAGCTGGTAGCGGTGTTTTTTTTTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGAT

PacI (5485) SwaI (5494)

5401 CTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAA

EagI (5505)
NotI (5504)

5501 ATCAGCGCCGCAATAAAATATCTTTATTTTACATCTGTGTGGTTTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAAACAAAACGA
5601 AACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA