



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

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCAGCCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

BspHI (560)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTATCATGAGAGGCGCTCGCGCGCCTGGGATCTGCTCGCT
AgeI (552)
1 M R G A R G A W D L L C V

MscI (618)
601 CCTGTTGGTCTGCTCCGTGGCCAGACAGCCAGTCTCAGCCATCTGCAAGTCCAGGGGAGCCGTCTCCGCCATCCATCCATCCAGCACAATCAGAGTTA
13 L L V L L R G Q T A T S Q P S A S P G E P S P P S I H P A Q S E L

Tth111I (745)
701 ATAGTTGAAGCTGGCGACACCCTCAGCCTGACGTGCATTGATCCCGACTTTGTGAGATGGACTTTCAAGACCTATTTCAATGAAATGGTTGAGAATAAAA
47 I V E A G D T L S L T C I D P D F V R W T F K T Y F N E M V E N K

BamHI (809) **BbrPI (849)**
801 AAAATGAATGGATCCAGGAAAAAGCCGAGGCCACTCGCACGGGCACATACACGTGCAGCAACAGCAATGGCCTCACGAGTTCTATTTACGTGTTTGTAG
80 K N E W I Q E K A E A T R T G T Y T C S N S N G L T S S I Y V F V R

XcmI (908)
901 AGATCCTGCCAACTTTTCTGGTTGGCCTTCCCTTGTGGCAAAGAAGACAGCGACGCGCTGGTCCGCTGCCCTCTGACAGACCCACAGGTGTCCAAT
113 D P A K L F L V G L P L F G K E D S D A L V R C P L T D P Q V S N

PshAI (1044) **BssHII (1092)**
1001 TATTCCTCATCGAGTGTGATGGAAATCTCTCCACGGACCTGACGTTTGTCCAAACCCCAAGGCTGGCATCACCATCAAAAACGTGAAGCGCGCCT
147 Y S L I E C D G K S L P T D L T F V P N P K A G I T I K N V K R A
1101 ACCACCGGCTCTGTGCTCCGCTGTGCTCAGCGTGCAGGTACATGGTGCATTCTGACAAATTCACCCTCAAAGTGGCGGACGCCATCAAGGCTATCCC
180 Y H R L C V R C A A Q R D G T W L H S D K F T L K V R A A I K A I P
1201 TGTGTGTCTGTGCTGAAACAAGTACCTCCTTAAGAAAGGGACACATTTACGGTGGTGTGCACCATAAAAGATGTGTCTACATCCGTGAAGTCCATG
213 V V S V P E T S H L L K K G D T F T V V C T I K D V S T S V N S M
1301 TGGCTAAAGATGAACCTCAGCCTCAGCACATAGCCAGGTAAAGCACAAATAGCTGGACCGGGGTGACTTCAATTATGAACGCCAGGAGACGCTGACTA
247 W L K M N P Q P Q H I A Q V K H N S W H R G D F N Y E R Q E T L T
1401 TCAGCTCGCAAGAGTTGACGAGTTGAGAGTGTTCATGTTATGCAATAACTTTTGGATCAGCAATGTCAACAACCTTGAAGTAGTAGAAAA
280 I S S A R V D D S G V F M C Y A N N T F G S A N V T T T L K V V E K
1501 AGGATTCATCAACATCTCCCTGTGAAGAACACTACAGTATTTGTAACCGATGGAGAAAACGTAGATTTGGTTGTTGAATACGAGGCCACCCAAACCC
313 G F I N I S P V K N T T V F V T D G E N V D L V V E Y E A Y P K P
1601 GAGCACCAGCAGTGGATATATGAACAGGACCTCGGCTAACAAAGGGAAGGATTATGTCAAATCTGATAACAAAAGCAACATCAGATATGTGAACCAAC
347 E H Q Q W I Y M N R T S A N K G K D Y V K S D N K S N I R Y V N Q

Psp1406I (1786)
1701 TTCGCTGACCAGATTAAGGACAGAAAGGAGGCACTTATACCTTTCTGGTGTCCAACCTCTGATGCCAGTGTCTCCGTGACATTCAACGTTTACGTGAA
380 L R L T R L K G T E G G T Y T F L V S N S D A S A S V T F N V Y V N

BsiWI (1820) **SphI (1841)** **BsrGI (1897)**
1801 CACAAAACAGAAATCCTGACGTACGACAGGCTATAAATGGCATGCTCCAGTGTGTGGCAGAGGGATTCCCGAGCCCAACAATAGATTGGTATTTTGT
413 T K P E I L T Y D R L I N G M L Q C V A E G F P E P T I D W Y F C
1901 ACAGGAGCAGAGCAAAGTGTACCACTCCTGTCTCACCAGTGGACGTACAGGTCCAGAATGTATCTGTGTACCATTGGAAAACCTGGTGGTTAGAGTT
447 T G A E Q R C T T P V S P V D V Q V Q N V S V S P F G K L V V Q S
2001 CCATAGACTCCAGCGTCTTCCGGCACACGGCAGGTGGAGTGAAGGCTCCAACGATGTGGCAAGAGTTCGCGCTTCTTTAACTTTGCATTTAAAGG
480 S I D S S V F R H N G T V E C K A S N D V G K S S A F N F A F K G

BsaBI (2175)
2101 TAACAACAAGAGCAAATCCAGGCCCACTCTGTTACGCGCGTCTCATTGGCTTTGTGGTGCAGCTGGCGCGATGGGGATCATTGTGATGGTGCTC
513 N N K E Q I Q A H T L F T P L L I G F V V A A G A M G I I V M V L
2201 ACCTACAAATATTTGCAGAAACCATGTATGAAGTACAATGGAAGTTGTGAGGAGATAAATGGAAACAATTATGTTTACATAGACCCGACCACTTC
547 T Y K Y L Q K P M Y E V Q W K V V E E I N G N N Y V Y I D P T Q L

NdeI (2393)
2301 CTTATGATCACAATGGGAGTTTCCAGAAACAGGCTGAGTTTTGAAAGACATTGGGAGCTGGTGCCTTCGGGAAGGTCGTTGAGGCCACTGCATATGG
580 P Y D H K W E F P R N R L S F G K T L G A G A F G K V V E A T A Y G
2401 CTTGATTAAGTCCGATGCTGCCATGACAGTTGCCGTGAAGATGCTCAAACCAAGTGCACATTTAACAGAAAGAGAGCCCTAATGTCCGAACTGAAGGTC
613 L I K S D A A M T V A V K M L K P S A H L T E R E A L M S E L K V

SphI (2545) **Bsp120I (2560)**
2501 CTGAGCTACCTGGGCAATCAGATGAATATTGTAACCTGCTGGCGCATGCACGGTGGGAGGGCCACCTGGTCAATCAGAAATATTGTTGCTATGGTG
647 L S Y L G N H M N I V N L L G A C T V G G P T L V I T E Y C C Y G
2601 ATCTTTTGAATTTTTGAGAAGGAAAGCGTGACTCGTTTATTTCTCAAAGCAAGAAGAGCAGGAGAAGCGGCACCTTTATAAGAACCTTCTGCACTCAAC
680 D L L N F L R R K R D S F I F S K Q E E Q A E A A L Y K N L L H S T
2701 GGAGCCTTCTGTGACAGTTCAAATGAATATATGGACATGAAGCCTGGCGTTTCTACGTGGTCCAACCAAGACAGACAAGAGGAGATCCGCAAGAATA
713 E P S C D S S N E Y M D M K P G V S Y V V P T K T D K R R S A R I

MscI (2894)
2801 GACTCGTACATAGAAAGAGACGTGACTCCTGCCATCATGGAAGATGACGAGCTGGCTCTGGACCTGGATGATTTGCTGAGCTTCTCCTACCAGGTGGCCA
747 D S Y I E R D V T P A I M E D D E L A L D L D L L S F S Y Q V A

2901 AGGGCATGGCGTTCTCGCTCCAAGAATTGTATTCACAGAGATTTGGCAGCCAGGAATATCCTCCTCACTCACGGGCGGATCACAAAGATTTGCGATTT
780▶K G M A F L A S K N C I H R D L A A R N I L L T H G R I T K I C D F
NheI (3003) BstBI (3027)
3001 CGGGCTAGCCAGAGACATCAGGAATGATTCGAATTACGTGGTCAAAGGAAATGCACACTGCCCGTGAAGTGGATGGCACCAGAGAGCATTTTCAGCTGC
813▶ G L A R D I R N D S N Y V V K G N A R L P V K W M A P E S I F S C
BsrGI (3101) Bsu36I (3158) SalI (3190)
3101 GTGTACACATTTGAAAGTGTGTCTGGTCTATGGGATTTTCTCTGGGAGCTTTCTCCTTAGGAAGCAGCCCTACCAGGGATGCCGGTGCAGTCCA
847▶ V Y T F E S D V W S Y G I F L W E L F S L G S S P Y P G M P V D S
BspEI (3227) BspHI (3272)
3201 AGTTCTACAAGATGATCAAGGAAGGCTTCCGGATGGTCAGCCCGGAGCAGCGCCTGCCGAAATGTATGACGTCATGAAGACTTGTGGGACGCTGACCC
880▶K F Y K M I K E G F R M V S P E H A P A E M Y D V M K T C W D A D P
BglII (3347)
3301 CTTGAAAAGGCCAACATTCAAGCAGTTGTCCAATTATTGAGAAGCAGATCTCGGACAGCACCAAGCACATTTACTCCAATTGGCAAACCTGCAACCCC
913▶ L K R P T F K Q V V Q L I E K Q I S D S T K H I Y S N L A N C N P
BstAPI (3471)
3401 AACCCAGAGAACCCCGTGGTGGTGGACATTCCGTGAGGGTCAACTCGGTGGCAGCAGCGCCTCTTCTACGCAGCCCTGCTCGTGCACGAAGATGCCT
947▶ N P E N P V V V D H S V R V N S V G S S A S S T Q P L L V H E D A
NheI (3540)
EcoRI (3534)
3501 GAGCAGAAACCAAGTCCAACAGGCTTTGCTGCTGAATTTCGCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAACCAACTAGAAATGCAGT
980▶ •
3601 GAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAA
HpaI (3703) MfeI (3714) EcoRI (3799)
3701 CAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGG
3801 AATTCTAAAATACAGCATAGCAAACTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTT
3901 GCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTACTGCTCTTCATTTCTTTATGT
SwaI (4052)
4001 TTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGA
4101 ATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAAATTGGACAGCAAGAAAGCGAGC
4201 TTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAG
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
4301 CATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGT
110▶ 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
4401 GTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAAATGGCAATGGCTTCAGCACAGCAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAG
77▶ 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 V A S
4501 ATGATCTCCCAAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTGCTCTCATAGAGCATGGTATCTTCTCAGTGGCAGCTCCACCAGCTCCA
43▶ 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 L E L
XmnI (4619) AseI (4685)
4601 GATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACATGCCGATATACTATGCCGATGATTAATTGTCAAAC
10▶ D Q Q S I N F T K M
4701 AGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTGCGTCAATGG
SpeI (4840)
4801 GCGGAGTTGTTACGACATTTGGAAAGTCCCGTTGATTTACTAGTCAAACAACACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAG
SnaBI (4968)
4901 TCAAACCGCTATCCACGCCATTGATGTAAGTCCAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCC
NdeI (5073)
5001 ATAAGTTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCCTGATGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCTGCA
5101 GTGGGAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATATTGACGTCAATGGGCGG
PacI (5259)
PstI (5252) SdaI (5251) BspLU11I (5269)
5201 GGGTCTTGGGCGTCCAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAG
5301 GAACCGTAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCAAACCGG
5401 ACAGGACTATAAAGATACAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCC
5501 CTTCCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCCGCTCAAGCTGGGTGTGTGCACGAACCCCGT
5601 TCAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCAACCCGGTAAGACAGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATT
5701 AGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAAGTATTTGGTATCTGCGCTCTGCTGA
5801 AGCCAGTTACCTCGAAAAAGAGTTGGTAGCTCTGATCCGGCAAACAACCCCGCTGGTAGCGGTGGTTTTTTTGTGCAAGCAGCAGATTACGCG

5901 CAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACACGTTAAGGGATTTTGGTCATGGCTAGT

EagI (6019)

Swal (6008) NotI (6018)

6001 TAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCA
6101 TCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA