



PvuI (7)
SgfI (6)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGGGGTAACGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMI (441) **NaeI (441)**
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTGTTTCGTTT

KasI (535) **AgeI (552)** **BspLU11I (560)** **NheI (582)** **HindIII (590)**
501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTCAACATGTCAGCACCAAGGATTTGGCTAGCGCAAGCTTTGCT
601 TTTTTCTCACCCTGAATCTATAGTCAACTTTTGGAAACCGTGTGGTTACATCTCACCCTGAATTTCCAGTTGTCCAGCGCGCTCGAACTTCACTGCC
13> F F L T T E S I G Q L L E P C G Y I Y P E F P V V Q R G S N F T A
701 ATTTGTGTCTGAAGGAGCGTGTCTGCAGCATTACTAGTGAATGCCAGTACATCGTGTGGAAGACCAACCATGCTGCTGTCCAGGGAGCAGGTA
47> I C V L K E A C L Q H Y Y V N A S Y I V W K T N H A A V P R E Q V
801 CTGTCATCAACAGAACCAGTCCAGTGTACGTTACAGACGTGGTCTCCGAGCGTGCAGCTCACCTGCAACATCCTGCTCTTTGGGAGATCGAGCA
80> T V I N R T T S S V T F T D V V L P S V Q L T C N I L S F G Q I E Q
901 GAATGTGTATGGAGTCCCATGCTTTCAGGCTTCTCCAGATAAACCTACAAATTTGACTTGCATTGTAATGAGGGGAAGAATATGCTGTGCCAGTGG
113> N V Y G V T M L S G F P P D K P T N L T C I V N E G K N M L C Q W

XcmI (1077)
1001 GACCCCGAAGGGAGACTTACCTTGAACAAACTACACTTTGAAATCAGAGTGGGCAACAGAGAAGTTTCTGATTGCCAGTCAAAGCATGGCACTTCAT
147> D P G R E T Y L E T N Y T L K S E W A T E K F P D C Q S K H G T S
1101 GTATGGTCAGCTACATGCCACCTATTATGTCAACATTGAAGTCTGGGTGGAAGCAGAGAATGCCCTTGGGAAGTCTCCTCAGAGTCTATCAATTTGA
180> C M V S Y M P T Y Y V N I E V W V E A E N A L G K V S S E S I N F D
1201 CCCCCTGATAAAGTGAACCCACCCACCATATAATTTACTGACCACTCAGAAGAATTATCCAGTATATAAAGTATCATGGGTGAGTTCAGG
213> P V D K V K P T P P Y N L S V T N S E L S S I L K L S W V S S G
1301 CTGGGCGGCTTTTGTAGTCTAAAGTCTGACATCCAATATAGGACCAAAGATGCCTCAACTTGGATCCAGTCCCTCTTGAAGATACAATGTCTCCTCGAA
247> L G G L L D L K S D I Q Y R T K D A S T W I Q V P L E D T M S P R
1401 CTTCTTCACTGTGCAGGACCTCAAGCCTTTTACAGAATATGTGTTTAGGATCCGGTCCATTAAGGACAGTGGGAAGGGCTACTGGAGTACTGGAGTGA
280> T S F T V Q D L K P F T E Y V F R I R S I K D S G K G Y W S D W S E

XcmI (1540) **NeoI (1572)**
1501 GGAGGCTAGTGGGACCACATACGAAGACAGACCATCCAGACCACCAAGTTTCTGGTATAAGACAAATCCATCCATGGCAGGAATATAGATCTGTACGG
313> E A S G T T Y E D R P S R P P S F W Y K T N P S H G Q E Y R S V R

NdeI (1602)
1601 CTCATATGGAAGGCACTGCCTCTTTCTGAGCCAAATGGGAAAATCTTGGATTATGAAGTGATTCTTACGAGTCAAAGTCCGTCTCACAAACGTACACAG
347> L I W K A L P L S E A N G K I L D Y E V I L T Q S K S V S Q T Y T
1701 TCACTGGCACAGAGCTGACCGTGAATCTACCAATGACCGCTATGTCGGCTCTCTAGCAGCAAGAAACAAGGTGGGCAATCAGTGCAGCTGTCTCAC
380> V T G T E L T V N L T N D R Y V A S L A A R N K V G K S A A A V L T
1801 CATCCCAGCCCCACGTACAGCTGCTTATTCTGTAGTGAATCTTAAAGCATTTCCAAAAGATAACCTGCTCTGGGTGGAATGGACACCTCCACCTAAA
413> I P S P H V T A A Y S V V N L K A F P K D N L L W V E W T P P P K

DraIII (1946)
1901 CCCGTGAGCAAGTACATCTTAGAGTGGTGTGTGTTGTGAGAGAAGCCCTGTGTTGAAGACTGGCAGCAGGAAGACGCTACCGTGAATCGGACCCACT
447> P V S K Y I L E W C V L S E N A P C V E D W Q Q E D A T V N R T H

Bsp120I (2062)
2001 TGAGAGGACGCCTCCTGGAGAGCAAGTGTATCAAATCACAGTAACTCCCGTATTGCGCACGGGGCCCGGAGGCTCTGAGTCTTGAAGGCGTACCTCAA
480> L R G R L L E S K C Y Q I T V T P V F A T G P G G S E S L K A Y L K

BsrBI (2105)
2101 ACAAGCGCTCCTGCCAGAGGACCGACTGTTCCGACAAAGAAAGTGGGAAAAATGAAGTGTCTTACGCTGGGACCAGATTCTGTGGACGACCAGAAT
513> Q A A P A R G P T V R T K K V G K N E A V L A W D Q I P V D D Q N
2201 GGCTTCATTAGAACTACTCCATATCTTACAGAACCAGCGTGGGAAAGGAGATGGTTGTGCATGTGGATTCTTCTCACACGGAGTACACGCTGTCTCTC
547> G F I R N Y S I S Y R T S V G K E M V V H V D S S H T E Y T L S S

BsrGI (2315) **EcoRI (2368)**
2301 TGAGTAGTACATGTTGATGTCGCAATGGCCGCTACACAGATGAAGTGGGAAAGATGGGCGGAATTCACCTTTACAACACCAAAGTTCGCTCA
580> L S S D T L Y M V R M A A Y T D E G G K D G P E F T T F T T P K F A Q
2401 AGGAGAAATAGAAGCCATAGTCGTGCTGTGTGCTTAGCCTTCTCCTGACAACCTGCTGGGCGTCTGTTCTGCTTTAAACAAACGAGACCTAATTTAA
613> G E I E A I V V P V C L A F L L T T L L G V L F C F N K R D L I K

BstEII (2552)
2501 AAACACATCTGGCCTAATGTTCTGATCCTTCCAAGAGTCATATTGCCAGTGGTCACTCACACCCCCCAAGGCACAAATTTAACTCCAAAGATCAAA
647> K H I W P N V P D P S K S H I A Q W S P H C T P P R H N F N S K D Q
2601 TGTACTCGGACGGCAATTTCACTGATGTAAGCGTTGTGAAAATAGAAGCAAACAAGAAGCCTTGTCCAGATGACCTGAAGTCCGTGGACCTGTTCAA
680> M Y S D G N F T D V S V V E I E A N N K K P C P D D L K S V D L F K

Ppu10I (2751) **NsiI (2751)**
2701 GAAGGAGAAAGTGAAGTACAGAAGGGCACAGCAGTGGCATCGGGGCTCTTCATGCATGCTCCTCCTCCAGGCCAGCATCTCCAGCAACGAGGAGAATGAG
713> K E K V S T E G H S S G I G G S S C M S S S R P S I S S N E E N E

2801 TCTGCTCAGAGCACCGCCAGCACGGTGCAGTACTCCACTGTGGTGCACAGCGGTACAGGCACCAGGTCCCCTCCGTGCAAGTGTCTCAAGGTCCGAGT
747▶ S A Q S T A S T V Q Y S T V V H S G Y R H Q V P S V Q V F S R S E
ScaI (2828) ApaLI (2842)
2901 CCACCCAGCCCCTGCTAGACTCGGAGGAGCGGCCAGAAGACCTGCAGCTGGTGGATAGTGTAGACGGTGGGGATGAGATCTTGCCAGGCAACCGTATTT
780▶ S T Q P L L D S E E R P E D L Q L V D S V D G G D E I L P R Q P Y F
BsrBI (2926)
3001 CAAGCAGAANTGCAGTCAGCCTGAAGCCTGTCCAGAGATTTACATTTTGAAGGTCAAACAGGTTTTGTCCGGCAATGAGGAGGATTTTGTGCACTG
813▶ K Q N C S Q P E A C P E I S H F E R S N Q V L S G N E E D F V R L
3101 AAGCAGCAGCAGGTTTCAGATCACATTTCTCAGCCCTATGGATCCGAGCAACGGAGGCTTTTCAGGAAGGCTCTACAGCGGATGCTCTTGGCACGGGG
847▶ K Q Q Q V S D H I S Q P Y G S E Q R R L F Q E G S T A D A L G T G
BsaBI (3218)
3201 CTGATGGACAGATGGAGAGATTTGAATCTGTTGGAATGGAGACCACAATTGATGAAGAAATCCCAAAGTTACTTGCCACAGACTGTAAGACAAGGTGG
880▶ A D G Q M E R F E S V G M E T T I D E E I P K S Y L P Q T V R Q G G
SpeI (3330)
3301 CTACATGCCCGCAGTGAAGGACTGGCTCCTGACTAGTCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAAATGCAGTGAAA
913▶ Y M P Q • 1▶ S T • • D T L M S L D K P Q L E C S E
HpaI (3499)
3401 AAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAAACCATTATAAGCTGCAATAAACAAG
20▶ K N A L F V K F V M L L L Y L • N L • C Y C F I C N H Y K L Q • T S
EcoRI (3595)
3501 TTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATT
53▶ • Q Q Q L H S F Y V S G S G G G V G G F L K Q V K P L Q M W Y
3601 CTAATAACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTGAACTCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTGCCA
3701 ATGTGCATTAGCTGTTTGACGCCTCACCTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGTTTGAAGTACTCTTCTTTATGTTTATGTTTAT
SspI (3834) SwaI (3848)
3801 AATGCACTGACCTCCACATTCCCTTTTATGATAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCC
3901 AGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATGGACAGCAAGAAAGCGAGCTTCT
4001 AGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTTCTCAATGGTGGTTTTGACCAGCTTGCCATTCACTCAATGAGCACAAGCAGTCAGGAGCATA
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 Y
SacI (4109)
4101 GTCAGAGATGAGCTCTCTGCACATGCCACAGGGGTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGCA
109▶ 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
StuI (4273)
4201 AAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCCAATGTGGACAGCAGAGATGA
75▶ 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 I
Eco147I (4273)
4301 TCTCCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTGCTTGTGCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACAGCTCCAGATC
42▶ 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 D
VspI (4481)
4401 CTGCTGAGAGATGTTGAAGGTCTTATGATGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCG
9▶ Q Q S I N F T K M
AseI (4481)
4501 TGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGC
SacI (4538)
4600 GGAGTTGTTACGACATTTTGAAAGTCCCCTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTC
SpeI (4636)
4699 AAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGGAAAGTCCCAT
SnaBI (4764)
Eco105I (4764)
4799 AAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCAATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCAAGT
NdeI (4869)
4899 GGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGAAACATACGTCATTATTGACGTCAATGGGCGGGG
SdaI (5047) PaeI (5055) BspLU11I (5065)
4999 GTCGTTGGGCGGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCCTG C A G G T T A A T T A A G A A C A T G T G A G C A A A A G C C A G C A A A A G C C A G
5097 GAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCG
5197 ACAGGACTATAAAGATACCAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCC
ApaLI (5379)
5297 CTTCCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTGCTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCCGT

5397 TCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATT

5497 AGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGA

5597 AGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCACCGCTGGTAGCGGTGGTTTTTTTGGTTCGCAAGCAGCAGATTACGCG

5697 CAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGT

PacI (5795)

EagI (5815)

Swal (5804) **NotI (5814)**

5797 TAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCA

5897 TCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA