



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGCAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCGACCTACCTGAGGCC
HindIII (245)
301 GCCATCCACGCGGGTTGAGTCGCGTTTCCGCGCTCCCGCTGTGGTGCCTCCTGAAGTCGCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

501 TCTGTTTGTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGTAGGAGGGCCACCATGGCCGGGGGGCCGGCCCGGGGAGGCC
AgeI (552) **SfiI (563)** 1 M A G G P G P G E P
601 GCAGCCCCGGCGCCAGCACTTCTGTACGAGGTGCCGCCCTGGGTATGTGCCGTTCTACAAAGTGATGGACGCCCTGGAGCCCGCCGACTGGTGC
11 A A P G A Q H F L Y E V P P W V M C R F Y K V M D A L E P A D W C

701 AGTTGCCGCCCTGATCGTGCAGACCAGACCGAGCTGCGGCTGTGCGAGCGCTCCGGGACGCGACGCCAGCGTCTGTGGCCTGGATCAACCGCAA
44 Q F A A L I V R D Q T E L R L C E R S G Q R T A S V L W P W I N R N
Eco47III (748)

801 CGCCCGTGTGGCCGACCTCGTGCACATCCTCACGACCTGCAGCTGCTCCGTGCGCGGGACATCATCACAGCCTGGCACCCTCCCGCCCCGTTCCGTCC
77 A R V A D L V H I L T H L Q L L R A R D I I T A W H P P A P L P S
901 CCAGGCACCACTGCCCGAGGCCAGCAGCATCCTGCACCCGCGAGGCCGAGGCTGGAGCCCCGGAAGTTGCCATCCTCAGCCTCCACCTTCTCT
111 P G T T A P R P S S I P A P A E A E A W S P R K L P S S A S T F L
1001 CCCAGCTTTTCCAGGCTCCAGACCCATTGAGGCTGAGCTCGGCCTGGTTCGAAGCCTGCTTCCCTGTGGCCTCCACCGCCATCTCCAGCCCTTC
144 S P A F P G S Q T H S G P E L G L V P S P A S L W P P P P S P A P S

1101 TTCTACCAAGCCAGGCCAGAGAGCTCAGTGTCCCTCTGCAGGGAGCCGCCCTCTCCGTTTTGCTGGCCCTCTGTGAGATTTCCGGGGACCCAC
177 S T K P G P E S S V S L L Q G A R P S P F C W P L C E I S R G T H
1201 AACTTCTCGGAGGAGCTCAAGATCGGGGAGGGTGGCTTTGGGTGCGTGTACCGGGCGGTGATGAGGAACACGGTGTATGCTGTGAAGAGGCTGAAGGAGA
211 N F S E E L K I G E G G F G C V Y R A V M R N T V Y A V K R L K E
1301 ACGCTGACCTGGAGTGGACTGCAGTGAAGCAGAGCTTCTGACCGAGGTGGAGCAGCTGTCAGGTTTCGACCCAAACATTGTGGACTTTGCTGGCTA
244 N A D L E W T A V K Q S F L T E V E Q L S R F R H P N I V D F A G Y

1401 CTGTGCTCAGAACGGCTTCTACTGCCTGGTGTACGGCTTCTGCCCAACGGCTCCCTGGAGGACCGTCTCCACTGCCAGACCCAGGCCTGCCACCTCTC
277 C A Q N G F Y C L V Y G F L P N G S L E D R L H C Q T Q A C P P L
XmnI (1409)

1501 TCCTGGCCTCAGCGACTGGACATCCTTCTGGGTACAGCCCGGCAATTAGTTTCTACATCAGGACAGCCCCAGCCTCATCCATGGAGACATCAAGAGTT
311 S W P Q R L D I L L G T A R A I Q F L H Q D S P S L I H G D I K S
1601 CCAACGTCCTTCTGGATGAGAGGCTGACACCAAGCTGGGAGACTTTGGCTGGCCCGGTTGACCGCTTTGCGGGTCCAGCCCCAGCCAGAGCAGCAT
344 S N V L L D E R L T P K L G D F G L A R F S R F A G S P S Q S S M
1701 GGTGGCCCGGACACAGACAGTGCAGGACCCCTGGCCTACCTGCCGAGGAGTACATCAAGACGGGAAGGCTGGCTGTGGACACGGACACCTTCAAGTTT
377 V A R T Q T V R G T L A Y L P E E Y I K T G R L A V D T D T F S F

1801 GGGTGGTAGTGCTAGAGACCTTGGCTGGTCAGAGGGCTGTGAAGACGCACGGTGCCAGGACCAAGTATCTGAAAGACCTGGTGAAGAGAGGCTGAGG
411 G V V V L E T L A G Q R A V K T H G A R T K Y L K D L V E E E A E
BbsI (1841)

1901 AGGCTGGAGTGGCTTTGAGAAGCACCCAGAGCACACTGCAAGCAGGTCTGGCTGCAGATGCCTGGGCTGCTCCATCGCCATGCAGATCTACAAGAAGCA
444 E A G V A L R S T Q S T L Q A G L A A D A W A A P I A M Q I Y K K H
2001 CCTGGACCCAGGCCCGGCCCTGCCACCTGAGCTGGCCTGGGCTGGGCGAGCTGGCCTGCTGCTGCCTGCACCGCCGGGCAAAAGGAGGCTCCTCCT
477 L D P R P G P C P P E L G L G L G Q L A C C C L H R R A K R R P P
2101 ATGACCCAGGTGTACGAGAGGCTAGAGAAGCTGCAGGACGTGGTGGCGGGGTGCCGGGCATTGGAGGCCAGCTGCATCCCCCTTCCCGCAGG
511 M T Q V Y E R L E K L Q A V V A G V P G H S E A A S C I P P S P Q

2201 AGAACTCCTACGTGTCCAGCACTGGCAGAGCCACAGTGGGGCTGCTCCATGGCAGCCCTGGCAGGCCATCAGGAGCCAGTCCCAGGAGCAGAGCA
544 E N S Y V S S T G R A H S G A A P W Q P L A A P S G A S A Q A A E Q
NcoI (2247)

2301 GCTGCAGAGAGGCCCAACCAGCCCGTGGAGAGTGACGAGAGCCTAGGCGGCCTCTGCTGCCTGCCTCCTGGCACTTACTCCTCAAGCTGCCCTCTG
577 L Q R G P N Q P V E S D E S L G G L S A A L R S W H L T P S C P L
AvrII (2342)

2401 GACCCAGCACCCCTCAGGAGGGCCGGCTGCTCCTCAGGGGACACGGCAGGAGAATCGAGCTGGGGAGTGGCCAGGATCCCGGCCACAGCCGTGGAAG
611 D P A P L R E A G C P Q G D T A G E S S W G S G P G S R P T A V E
NgoMIV (2421) **BamHI (2475)**

2501 GACTGGCCCTTGGCAGCTCTGCATCATCGTGTGTCAGAGCCACCGCAGATTATCATCAACCCTGCCGACAGAAGATGGTCCAGAAGCTGGCCCTGTACGA
644 G L A L G S S A S S S S E P P Q I I I N P A R Q K M V Q K L A L Y E
2601 GGATGGGGCCTGGACAGCCTGCAGCTGTGTCGTCACGCTCCCTCCAGGCTTGGGCTGGAACAGGACAGGCGGGCCCGAAGAAAGTGATGAATTT
677 D G A L D S L Q L L S S S S L P G L G L E Q D R Q G P E E S D E F

MseI (2746)

2701 CAGAGCTGATGTGTTACCTGGGAGATCCCCAAATCCGG**NheI (2740)**CTAGCTGGCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAAGTAGAATG
711▶ Q S •

HpaI (2878) MfeI (2889)

2801 CAGTGAIAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAAGTTAAACAACAACAATTGCATTC

EcoRI (2974)

2901 ATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAAA
3001 CTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAG

SapI (3156)

3101 CCTCACCTCTTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGGTTTGAAGTACTGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATT

SspI (3213) SwaI (3227)

3201 CCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATA
3301 ATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACT
3401 TGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCA
135▶ 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 L E R C

BstXI (3517)

3501 CATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTC
102▶ 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 G N S
3601 ACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGA
68▶ 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 K T R I

BbsI (3798)
XmnI (3794)

3701 TGGCCGCCCCGACATGGTGTGTTGTCTCATAGAGCATGGTGTCTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGGT
35▶ 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 I N F T

AseI (3860)

3801 CTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTAT
2▶ K M

3901 CTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGA

SpeI (4015)

4001 AAGTCCCCTTGATTACTAGTCAAACAAACTCCATTGACGTC AATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGA

SnaBI (4143)

4101 TGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTAAGTGGCATAATG

NdeI (4248)

4201 CCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTAAGTGGCAGTTTACCGTAAATACTCC
4301 ACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGCGGGGGTCTTGGCGGTCAGCCAGGCG

SdaI (4426) PacI (4434) **BspLU11I (4444)**

4401 GGCCATTTACCGTAAGTTATGTAACGCCCTGCAGGTTAA**TAAGAACATGTGAGCAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTG**
4501 GCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGT
4601 TTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCA

ApaLI (4758)

4701 TAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTTATCC
4801 GGTAACATATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTG
4901 CTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGT
5001 TGGTAGCTCTTGATCCGGCAAACAACACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGAT

EagI (5194)
PacI (5174) SwaI (5183) **NotI (5193)**

5101 CCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCG
5201 CAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAA
5301 CTAGCAAAATAGGCTGTCCCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA