



125

PvuI (7)
SgfI (6)
1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGTACTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACCGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGGTCTTCCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552) **BspHI (560)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCATCATGAATCCTTCCAGAAAAATGAGTCCAAGGAACTCT
1 M N P F Q K N E S K E T L

Acc65I (624)
601 TTTTTCACCTGTCTCCATTGAAGAGGTACCACCTCGACCACCTAGCCCTCAAAGAAGCCATCTCCGACAATCTGTGGCTCCAACATCCACTGAGCATT
13 F S P V S I E E V P P R P P S P P K K P S P T I C G S N Y P L S I

Eco47III (728)
701 GCCTTCATTGTGGTGAATGAATTCTGCGAGCGCTTTTCTATTATGGAATGAAAGCTGTGCTGATCCTGTATTTCTGTATTTCTGCAGTGGAAATGAAG
47 A F I V V N E F C E R F S Y Y G M K A V L I L Y F L Y F L H W N E

BstAPI (862)
801 ATACCTCCACATCTATATACCATGCCTTCAGCAGCCTCTGTTATTTTACTCCCATCTGGGAGCAGCCATTGCTGACTCGTGGTTGGGAAAAATCAAGAC
80 D T S T S I Y H A F S S L C Y F T P I L G A A I A D S W L G K F K T

MscI (930)
901 AATCATCTATCTCCTTGGTGTATGTGCTTGGCCATGTGATCAAGTCTTGGGTGCCTTACCAATACTGGGAGGACAAGTGGTACACACAGTCTATCA
113 I I Y L S L V Y V L G H V I K S L G A L P I L G G Q V V H T V L S
1001 TTGATCGGCCTGAGTCTAATAGCTTTGGGACAGGAGGCATCAACCCCTGTGCGAGCTTTTGGTGGAGACCAGTTGAAGAAAAACATGCAGAGGAAC
147 L I G L S L I A L G T G G I K P C V A A F G G D Q F E E K H A E E
1101 GGACTAGATACTTCTCAGTCTTCTACCTGTCCATCAATGCAGGGAGCTTGATTCTACATTTATCACCCCATGCTGAGAGGAGATGTGCAATGTTTTGG
180 R T R Y F S V F Y L S I N A G S L I S T F I T P M L R G D V Q C F G

NsiI (1211)
1201 AGAAGACTGCTATGCATTGGCTTTTGGAGTCCAGGACTGCTCATGGTAATTGCATTGTTGTGTTTGAATGGGAAGCAAAATATAACAATAAACCCACC
213 E D C Y A L A F G V P G L L M V I A L V V F A M G S K I Y N K P P
1301 CCTGAGGAAACATAGTGGCTCAAGTTTCAAATGTATCTGGTTTCTGATTTTCCAATCGTTTCAAGAACCGTTCTGGAGACATTCCAAGCGCAGCAGCT
247 P E G N I V A Q V F K C I W F A I S N R F K N R S G D I P K R Q H
1401 GGCTAGACTGGGCGCTGAGAAAATCCAAAGCAGCTCATTATGGATGAAAGGCACTGACCAGGGTACTATTCCTTTATATCCCATTGCCCATGTTCTG
280 W L D W A A E K Y P K Q L I M D V K A L T R V L F L Y I P L P M F W
1501 GGCTCTTTTGGATCAGCAGGGTTCACGATGGACTTTGCAAGCCATCAGGATGAATAGGAATTTGGGGTTTTTGTGCTTCAGCCGGACCAGATGCAGGTT
313 A L L D Q Q G S R W T L Q A I R M N R N L G F F V L Q P D Q M Q V

Tth111I (1639)
1601 CTAATCCCITTTCTGGTCTTATCTTCATCCCGTTGTTGACTTTGTCAATTATCGTCTGGTCTCCAAGTGTGGAATTAACCTCTCATCACTTAGGAAAA
347 L N P F L V L I F I P L F D F V I Y R L V S K C G I N F S S L R K

EcoO109I (1788)
1701 TGGCTGTTGGTATGATCCTAGCGTGCCTGGCATTGTCAGTTGCGGCAGCTGTAGAGATAAAAAATAATGAAATGGCCCGCCAGCCAGGTCAGGTCAGGAA
380 M A V G M I L A C L A F A V A A A V E I K I N E M A P A Q S G P Q E
1801 GGTTCCTACAAGTCTTGAATCTGGCAGATGATGAGGTGAAGGTGACAGTGGTGGGAAATGAAAACAATTCTCTGTTGATAGAGTCCATCAATCCTTT
413 V F L Q V L N L A D D E V K V T V V G N E N N S L L I E S I K S F

BstAPI (1995)
1901 CAGAAAACACCACACTATTCCAAACTGCACCTGAAAACAAAAAGCCAGGATTTTCACTTCCACCTGAAATATCACAATTTGTCTCTACACTGAGCATT
447 Q K T P H Y S K L H L K T K S Q D F H F H L K Y H N L S L Y T E H

BstXI (2057)
2001 CTGTGCAGGAGAAGAAGTGGTACAGTCTTGTCAATCGTGAAGATGGGAACAGTATCTCCAGCATGATGGTAAAGGATACAGAAAGCAAAACAACCAATGG
480 S V Q E K N W Y S L V I R E D G N S I S S M M V K D T E S K T T N G

HpaI (2119)
2101 GATGACAACCGTGAAGTTTGTAAACACTTTGCATAAAGATGTCAACATCTCCCTGAGTACAGATACCTCTCTCAATGTTGGTGAAGACTATGGTGTGCT
513 M T T V R F V N T L H K D V N I S L S T D T S L N V G E D Y G V S

ApaLI (2236)
PstI (2231) **XbaI (2283)**
2201 GCTTATAGAAGTGTGCAAAGAGGAGAATACCCTGCAGTGCAGTGTAGAACAGAAAGATAAAGAACTTTTCTCTGAATTTGGGCTTCTAGACTTTGGTGCAG
547 A Y R T V Q R G E Y P A V H C R T E D K N F S L N L G L L D F G A

StuI (2342)
2301 CATATCTGTTTGTATTACTAATAACACCAATCAGGGTCTTCAGGCCTGGAAGATTGAAGACATTCCAGCCAACAAAATGTCCATTGCGTGGCAGCTACC
580 A Y L F V I T N N T N Q G L Q A W K I E D I P A N K M S I A W Q L P
2401 ACAATATGCCCTGTTACAGCTGGGAGGTCATGTTCTGTGCACAGGCTTGTAGTTTTCTATTCTCAGGCTCCCTTAGCATGAAATCTGTGCTCCAG
613 Q Y A L V T A G E V M F S V T G L E F S Y S Q A P S S M K S V L Q

2501 GCAGCTTGGCTATTGACAATTGCAGTTGGGAATATCATCGTGCTTGTGGCACAGTTCAGTGGCCTGGTACAGTGGGCCGAATTCATTTTGTTCCT
647▶ A A W L L T I A V G N I I V L V V A Q F S G L V Q W A E F I L F S
2601 GCCTCCTGCTGGTATCTGCCTGATCTTCTCCATCATGGGCTACTACTATGTTCTGTAAAGACAGAGGATATGCGGGTCCAGCAGATAAGCACATTCC
680▶ C L L L V I C L I F S I M G Y Y Y V P V K T E D M R G P A D K H I P
MscI (2788)
NheI (2782)
2701 TCACATCCAGGGGAACATGATCAAAGTACAGACCAAGAAGACAAAACCTGATGACTCCCTAGATTCTGTCCTGACCCCAATGCTAGCTGGCCAGACATG
713▶ H I Q G N M I K L E T K K T K L •
2801 ATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCA

HpaI (2920)
2901 TTATAAGCTGCAATAAACAAAGTTAACAAACAATTGCATTCAATTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCT

3001 CTACAAATGTGGTATGGAATTCTAAATACAGCATAGCAAACCTTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCAT

SapI (3198)
3101 AGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAGATATAGTGTATTTTCCCAAGGTTTGAACCTAGC

SspI (3255) SwaI (3269)
3201 TCTTCATTTCTTTATGTTTTAAATGCAGTACCTCCACATCCCTTTTTAGTAAATATTTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAAT

EcoO109I (3330)
3301 GTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGG

3401 ACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGCTGACTTACTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTTCATCTCAATGAG
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

SacI (3530) BstXI (3559)
3501 CACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGC
116◀ V F C D P A 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

StuI (3694)
3601 CTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTACAGCACAGACAGTACCTGCCAATGTAGGCCT
82◀ R V A V I T 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
3701 CAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGC
49◀ I H V A S 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
3801 GACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGTGCTATTATACTATGCCGATATACTATGCCGA
16◀ V E V L E L D Q Q S I N F T K M

AseI (3902) SacI (3959)
3901 TGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCG

SpeI (4057)
4001 CCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGAC

SnaBI (4185)
4101 TTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTG

NdeI (4290)
4201 CCAAGTAGGAAAGTCCATAAGGTCATGACTGGGCATAATGCCAGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATAC

4301 ACTTGATGACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTA

PaeI (4476)
PstI (4469)
SdaI (4468) BspLU11I (4486)
4401 TTGACGTCAATGGGCGGGGTCGTTGGGCGTCAGCCAGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAA
4501 GGCCAGCAAAAGCCAGGAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTC

4601 AGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATA

4701 CCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGATAGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGT

ApaLI (4800)
4801 GTGCACGAACCCCCGTTAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAG

4901 CCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGG

5001 TATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACCAACCCGCTGGTAGCGGTGTTTTTTTGTTC

5101 AAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACTCACGTTAAGGGA

EagI (5236)

Pacl (5216) SwaI (5225) **NotI (5235)**

5201 TTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGAATCGTAA
5301 CTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA