



PvuI (7)
SgfI (6)
MfeI (82)

1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203)
HindIII (245)
Bsu36I (291)

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGGCC

301 GCCATCCACGCCGTTGAGTTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

BstEII (555)
AgeI (552) **NcoI (560)**

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTACCCATGGGCCAGACTGGGAAGAAATCTGAGAAGGGACCAGT

601 TTGTTGGCGGAAGCGTGTAAATCAGAGTACATGCGACTGAGACAGCTCAAGAGGTTGACAGAGCTGATGAAGTAAAGAGTATGTTAGTTCCAATCGT

130 M G Q T G K K S E K G P V
130 C W R K R V K S E Y M R L R Q L K R F R R A D E V K S M F S S N R

701 CAGAAAAATTTGGAAAGAACGAAATCTTAAACCAAGAATGAAACAGCGAAGGATACAGCCTGTGCACATCCTGACTTCTGTGAGCTCATTGCGCGGGA

470 Q K I L E R T E I L N Q E W K Q R R I Q P V H I L T S V S S L R G

ApaLI (763)

801 CTAGGGAGTGTTCCGGTGACCAGTGACTTGGATTTTCCAACACAAGTATCCCATTAAGACTCTGAATGCAGTTGCTTCAGTACCCATAATGTATTCTTG

800 T R E C S V T S D L D F P T Q V I P L K T L N A V A S V P I M Y S W

901 GTCCTCCCTACAGCAGAAATTTATGGTGAAGATGAACTGTTTACATAACATTCCTTATATGGGAGATGAAGTTTTAGATCAGGATGGTACTTTTATT

1130 S P L Q Q N F M V E D E T V L H N I P Y M G D E V L D Q D G T F I

1001 GAAGAATAATAAAAAATATGATGGAAAGTACACGGGATAGAGAATGTGGGTTTATAAATGATGAAATTTTGTGGAGTTGGTGAATGCCCTTGGTC

1470 E E L I K N Y D G K V H G D R E C G F I N D E I F V E L V N A L G

BglII (1164)

1101 AATATAATGATGATGACGATGATGATGATGAGACGATCCTGAAGAAAGAGAAGAAAAGCAGAAAGATCTGGAGGATCACCGAGATGATAAAGAAAGCCG

1800 Q Y N D D D D D D D G D D P E E R E E K Q K D L E D H R D D K E S R

1201 CCCACCTCGAAATTTCTTCTGATAAAAATTTTGAAGCCATTTCTCAATGTTTCCAGATAAGGGCAGCAGAGAAGAACTAAAGGAAAAATATAAGAA

2130 P P R K F P S D K I F E A I S S M F P D K G T A E E L K E K Y K E

HindIII (1389)

1301 CTCACCGAACAGCAGCTCCAGGCGCACTTCTCCTGAATGTACCCCAACATAGATGGACCAATGCTAAATCTGTTTCAGAGAGAGCAAAAGCTTACACT

2470 L T E Q Q L P G A L P P E C T P N I D G P N A K S V Q R E Q S L H

1401 CCTTTCATACGCTTTTCTGTAGGCGATGTTTAAATATGACTGCTTCTACATCGTAAGTGAATTTCTTTTCATGCAACACCCCAACTTATAAGCG

2800 S F H T L F C R R C F K Y D C F L H R K C N Y S F H A T P N T Y K R

XbaI (1518)
BsrBI (1597)

1501 GAAGAACACAGAAACAGCTCTAGACAACAACTTGTGGACCACAGTGTACCAGCATTGGAGGGAGCAAAGGAGTTTGTGCTGCTCACCAGTGGAG

3130 K N T E T A L D N K P C G P Q C Y Q H L E G A K E F A A A L T A E

AseI (1684)
XcmI (1682)

1601 CGGATAAAGACCCACAAAACGTCCAGGAGGCCGAGAAGAGGACGGCTTCCAATAACAGTAGCAGGCCAGCACCCACCATTAAATGTGCTGGAAT

3470 R I K T P P K R P G G R R R G R L P N N S S R P S T P T I N V L E

1701 CAAAGGATACAGACAGTATAGGGAAGCAGGGACTGAAACGGGGGAGAGAACAATGATAAAGAAGAAGAAGAAGAAAGATGAACTTCGAGCTCCTC

3800 S K D T D S D R E A G T E T G G E N N D K E E E E K K D E T S S S S

SspI (1843)

1801 TGAAGCAAATTCGGTGTCAAACCAATAAAGATGAAGCAAATATTGAACCTCCTGAGAATGTGGAGTGGAGTGGTGTGAAAGCCTCAATGTTTAGA

4130 E A N S R C Q T P I K M K P N I E P P E N V E W S G A E A S M F R

1901 GTCCTCATTGGCACTTACTATGACAATTTCTGTGCCATTGCTAGGTTAATTGGGACAAAACATGTAGACAGTGTATGAGTTTAAAGTCAAAGAATCTA

4470 V L I G T Y Y D N F C A I A R L I G T K T C R Q V Y E F R V K E S

AgeI (2063)
PvuII (2095)

2001 GCATCATAGCTCCAGCTCCCGCTGAGGATGTGGATACTCCTCAAGGAAAAAGAGGAAACACCGGTTGTTGGCTGCACACTGCAGAAAGATACAGCT

4800 S I I A P A P A E D V D T P P R K K K R K H R L W A A H C R K I Q L

2101 GAAAAAGGACGGCTCCTCTAACCATGTTTACAACATCAACCTGTGATCATCCACGGCAGCCTTGTGACAGTTCTGTCCTTGTGTGATAGCACAAAAT

5130 K K D G S S N H V Y N Y Q P C D H P R Q P C D S S C P C V I A Q N

2201 TTTTGTGAAAAGTTTGTCAATGTAGTTCAGAGTGTCAAACCGCTTTCCGGGATGCCGCTGCAAAGCACAGTGAACACCAAGCAGTGGCCGTGCTACC

5470 F C E K F C Q C S S E C Q N R F P G C R C K A Q C N T K Q C P C Y

PshAI (2323)

2301 TGGCTGTCGAGAGTGTGACCCTGACCTCTGTCTTACTTGTGGAGCCGCTGACCATTGGGACAGTAAAAATGTGTCCTGCAAGAACTGCAGTATTACGG

5800 L A V R E C D P D L C L T C G A A D H W D S K N V S C K N C S I Q R

BsaBI (2451)
EcoRI (2482)

2401 GGGCTCCAAAAAGCATCTATTGCTGGCACCATCTGACGTGGCAGGCTGGGGGATTTTTATCAAAGATCCTGTGCAGAAAAATGAATTCATCTCAGAATAC

6130 G S K K H L L L A P S D V A G W G I F I K D P V Q K N E F I S E Y

2501 TGTGGAGAGATTATTTCTCAAGATGAAGCTGACAGAAGAGGAAAGTGTATGATAAATACATGTGCAGCTTTCTGTTCAACTGAACAATGATTTTGTGG
647▶ C G E I I S Q D E A D R R G K V Y D K Y M C S F L F N L N N D F V

HpaI (2680)

2601 TGGATGCAACCCGCAAGGTAACAAAATTCGTTTTGCAAAATCATTGCGTAAATCCAACTGCTATGCAAAAGTTATGATGGTTAACGGTGATCACAGGAT
680▶ V D A T R K G N K I R F A N H S V N P N C Y A K V M M V N G D H R I

SapI (2734)

2701 AGGTATTTTTGCAAGAGAGCCATCCAGACTGGCGAAGAGCTGTTTTGATTACAGATACAGCCAGGCTGATGCCCTGAAGTATGTCGGCATCGAAAGA
713▶ G I F A K R A I Q T G E E L F F D Y R Y S Q A D A L K Y V G I E R

MscI (2843)

NheI (2837)

2801 GAAATGGAATCCCTTGACATCTGCTACCTCCTCCCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAG
747▶ E M E I P •

HpaI (2975) MfeI (2986)

2901 TGAAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACACAACAATTGCATTCATT

EcoRI (3071)

3001 TTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTTAAAATACAGCATAGCAAACTT

3101 TAACCTCAAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCT

SapI (3253)

3201 CACCTTCTTTCATGGAGTTTAAGATATAGTGTATTTTCCCAAGTTTGAACACTAGCTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTC

SspI (3310) SmaI (3324) EcoO109I (3385)

3301 TTTTATAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATA

3401 TCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGA
141▶ • N R T Y K L

3501 GGGGATGAGTTCCTCAATGGTGGTTTTGACCAGTTCGCAATTCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACAT
134▶ 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 M

3601 GCCACAGGGGTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCCTCTGCCCGTTGCTCACA
101▶ 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 V

StuI (3749)

3701 GCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGG
67▶ 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 A

BbsI (3895)

XmnI (3891)

3801 CGCCCCGACATGGTGCTTGTGCTCATAGAGCATGGTGATCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTT
34▶ 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 K

AseI (3957)

3901 CATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTG
1▶ M

4001 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCTACCGCCATTTCGCTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAG

SpeI (4112)

4101 TCCCGTTGATTTACTAGTCAAAACAACCTCCATTGACGTCAATGGGGTGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGT

SnaBI (4240)

4201 ACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCCATAGGTCATGTAAGTGGGCATAATGCCA

NdeI (4345)

4301 GCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTAAGTGGGAGTTTACCGTAAATACTCCACC

4401 CATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGAAACATACGTATTATTGACGTCAATGGGCGGGGTCGTTGGCGGTGAGCCAGGCGGGC

PaeI (4531)

SdaI (4523)

4501 CATTTACCGTAAGTTATGTAACGCTGACGTTAATAAAGAACATGTGAGCAAAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGCCGCTTGTGGCG
4601 TTTTCCATAGGCTCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTC

4701 CCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAG

ApaLI (4855)

4801 CTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCGACCCTGCGCCTTATCCGGT

4901 AACTATCGTCTTGTAGTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTA

5001 CAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGG

5101 TAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCT

EagI (5291)

PacI (5271) SmaI (5280) **NotI (5290)**

5201 TTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAA

5301 TAAAATATCTTTATTTTCATTACATCTGTGTGGTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTA

5401 GCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA