



PvuI (7)
SgfI (6)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **PvuII (239)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

BspHI (560)
AgeI (552)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCATCATGAATTCATAAAGGACAATAGCCGAGCCCTATTCA
1 M N F I K D N S R A L I Q
NruI (663)
601 AAGAATGGGAATGACTGTTATAAAGCAAATCACAGATGACCTATTTGTATGGAATGTTCTGAATCGCGAAGAAGTAAACATCATTGCTGCGAGAAGGTG
13 R M G M T V I K Q I T D D L F V W N V L N R E E V N I I C C E K V
701 GAGCAGGATGCTGCTAGAGGGATCATTACATGATTTTTGAAAAAGGGTTCAGAGTCTGTAACCTCTTCTTAAATCCCTTAAGGAGTGGAACTATCCTC
47 E Q D A A R G I I H M I L K K G S E S C N L F L K S L K E W N Y P
Tth111I (818)
801 TATTTGAGGACTTGAATGGCAAAGTCTTTTTCATCAGACATCAGAAGGAGACTTGGACGATTTGGCTCAGGATTTAAAGGACTTGTACCATAACCCATC
80 L F Q D L N G Q S L F H Q T S E G D L D D L A Q D L K D L Y H T P S
901 TTTTCTGAACTTTTATCCCTTGGTGAAGATATTGACATTATTTTAACTTGAAGAACCTTTCACAGAACCTGCTGTGGAGGAAGGACCAACACCAT
113 F L N F Y P L G E D I D I I F N L K S T F T E P V L W R K D Q H H
DraIII (1000) **PvuII (1012)** **SdaI (1032)**
1001 CACCGCGTGGAGCAGCTGACCCTGAATGGCCTCCTGCAGGCTCTTCAGAGCCCTGCATCATTGAAGGGGAATCTGGCAAAGGCAAGTCCACTCTGCTGC
147 H R V E Q L T L N G L L Q A L Q S P C I I E G E S G K G K S T L L
BspEI (1123) **Bsp120I (1181)**
1101 AGCGCATTGCCATGCTCTGGGGCTCCGAAAGTGCAAGGCTCTGACCAAGTTCAAATTCGCTTCTTCTCCGTCTCAGCAGGGCCAGGGTGGACTTTT
180 Q R I A M L W G S G K C K A L T K F K F V F F L R L S R A Q G G L F
MscI (1259)
1201 TGAACCCCTCTGTGATCAACTCCTGGATATACCTGGCACGATCAGGAAGCAGACATTCATGGCCATGCTGCTGAAGCTGCGGCAGAGGGTCTTTTCTTCT
213 E T L C D Q L L D I P G T I R K Q T F M A M L L K L R Q R V L F L
1301 CTTGATGGCTACAATGAATTCAGGCCCAAGAACTGCCAGAAATCGAAGCCCTGATAAAGGAAAACACCGCTTCAAGAACATGGTCATCGTCAACCACTA
247 L D G Y N E F K P Q N C P E I E A L I K E N H R F K N M V I V T T
DraIII (1401)
1401 CCACTGAGTGCCTGAGGCACATACGGCAGTTTGGTGCCTGACTGCTGAGGTGGGGATATGACAGAAGACAGCGCCAGGCTCTCATCCGAGAAGTGCT
280 T T E C L R H I R Q F G A L T A E V G D M T E D S A Q A L I R E V L
BspHI (1562)
1501 GATCAAGGAGCTTGTGAAGGCTTGTGCTCCAAATTCAGAAATCCAGGTGCTTGAAGAACTCATGAAGACCCCTCTCTTTGTGGTCATCACTTGTGCA
313 I K E L A E G L L L Q I Q K S R C L R N L M K T P L F V V I T C A
1601 ATCCAGATGGGTGAAAGTGAATTCACCTCTCACACAAAACACGCTGTTCCATACCTTCTATGATCTGTTGATACAGAAAAACAAACATAAAG
347 I Q M G E S E F H S H T Q T T L F H T F Y D L L I Q K N K H K H K
XhoI (1753) **BstBI (1783)**
Bsp119I (1783)
1701 GTGTGGCTGCAAGTGACTTCATTCGGAGCCTGGACCACTGTGGAGACCTAGCTCTCGAGGGTGTGTTCTCCACAAGTTTGATTTGAACTGCAGGATGT
380 G V A A S D F I R S L D H C G D L A L E G V F S H K F D F E L Q D V
1801 GTCCAGCGTGAATGAGGATGTCCTGCTGACAACCTGGGCTCCTCTGTAATATACAGCTCAAAGGTTCAAGCCAAAGTATAAATCTTTTCAAGTCACTTC
413 S S V N E D V L L T T G L L C K Y T A Q R F K P K Y K F F H K S F
BspHI (1944) **BstEII (1959)**
1901 CAGGAGTACACAGCAGGACGAAGACTCAGCAGTTTATTGACGTCTCATGAGCCAGAGGAGGTGACCAAGGGGAATGGTACTTGCAGAAAATGGTTTCCA
447 Q E Y T A G R R L S S L L T S H E P E E V T K G N G Y L Q K M V S
2001 TTTCCGACATTACACTTATAGCAGCTGCTCCGGTACACCTGTGGGTACTCTGTGGAAGCCACAGGGCTGTTATGAAGCACCTCGCAGCAGTGTGA
480 I S D I T S T Y S S L L R Y T C G S S V E A T R A V M K H L A A V Y
2101 TCAACACGGCTGCTTCTCGACTTTCCATCGCCAAGAGGCTCTGAGAGACAGGAATCTTTGCAAAGTGTGAAAAACACCACTGAGCAAGAAATCTG
513 Q H G C L L G L S I A K R P L W R Q E S L Q S V K N T T E Q E I L
2201 AAAGCCATAAACATCAATTCCTTTGTAGAGTGTGGCATCCATTTATATCAAGAGAGTACATCCAAATCAGCCCTGAGCCAAGAATTTGAAGCTTTCTTT
547 K A I N I N S F V E C G I H L Y Q E S T S K S A L S Q E F E A F F
2301 AAGGTAAGCTTATATCAACTCAGGAAACATCCCGATTACTTATTTGACTTCTTTGAACATTTGCCAATTTGCAAGTGCCTGACCTTCATTA
580 Q G K S L Y I N S G N I P D Y L F D F F E H L P N C A S A L D F I K
2401 ACTGGACTTTTATGGGGAGCTATGGCTTCATGGGAAAAGGCTGCAGAAGACACAGGTGGAATCCACATGGAAGAGGCCCCAGAAACCTACATCCCAGC
613 L D F Y G G A M A S W E K A A E D T G G I H M E E A P E T Y I P S
EcoRV (2594)
2501 AGGGCTGTATCTTTGTTCTTCAACTGGAAGCAGGAATTCAGGACTCTGGAGGTCACACTCCGGGATTTTCAGCAAGTTGAATAAGCAAGATATCAGATATC
647 R A V S L F F N W K Q E F R T L E V T L R D F S K L N K Q D I R Y
SspI (2607)
2601 TGGGAAAATATTCAGCTCTGCCACAAGCCTCAGGCTGCAAAATAAGAGATGTGCTGGTGTGGCTGGAAGCCTCAGTTTGGTCTCAGCACCTGTAAGAA
680 L G K I F S S A T S L R L Q I K R C A G V A G S L S L V L S T C K N

2701 CATTATTCTCTCATGGTGAAGCCAGTCCCCCTCACCATAGAAAGATGAGAGGCACATCACATCTGTAACAAACCTGAAAACCTTGAGTATTCATGACCTA
713▶ I Y S L M V E A S P L T I E D E R H I T S V T N L K T L S I H D L
2801 CAGAATCAACGGCTGCCGGTGGTCTGACTGACAGCTTGGGTAACCTGAAAGACCTTACAAAGCTCATAATGGATAAACATAAAGATGAATGAAGAAGATG
747▶ Q N Q R L P G G L T D S L G N L K N L T K L I M D N I K M N E E D
2901 CTATAAACTAGTGAAGGCCTGAAAAACCTGAAGAAGATGTGTTTATTTTCAATTTGACCCACTTGTCTGACATTGGAGAGGGAATGGATTACATAGTCAA
780▶ A I K L A E G L K N L K K M C L F H L T H L S D I G E G M D Y I V K
3001 GTCTCTGCAAGTGAACCTGTGACCTTGAAGAAATCAATTAGTCTCTGCTGCTTGTCTGCAAATGCAGTAAAATCTAGCTCAGAATCTTCACAAT
813▶ S L S S E P C D L E E I Q L V S C C L S A N A V K I L A Q N L H N

BspHI (2790)

3101 TTGGTCAAACCTGAGCATTCTTGATTATCAGAAAATTACCTGGAAAAAGATGGAAATGAAGCTCTTCATGAACCTGATGACAGGATGAACGTGCTAGAAC
847▶ L V K L S I L D L S E N Y L E K D G N E A L H E L I D R M N V L E
3201 AGCTCACCGCACTGATGCTGCCCTGGGGCTGTGACGTGCAAGGCAGCTGAGCAGCCTGTTGAAACATTTGGAGGAGTCCCACAACCTCGTCAAGCTTGG
880▶ Q L T A L M L P W G C D V Q G S L S S L L K H L E E V P Q L V K L G
3301 GTTAAAACTGGAGACTCACAGATACAGAGATTAGAATTTTAGTGCATTTTTTGGAAAGAACCCTCTGAAAAACTTCAGCAGTTGAATTTGGCGGA
913▶ L K N W R L T D T E I R I L G A F F G K N P L K N F Q Q L N L A G

BspHI (3165)

3401 AATCGTGTGAGCAGTGATGGATGGCTTGCCTTCATGGGTGATTTTGAAGATCTTAAGCAATTAGTGTTTTTGACTTTAGTACTAAAGAATTTCTACCTG
947▶ N R V S S D G W L A F M G V F E N L K Q L V F F D F S T K E F L P

HpaI (3540) *BsaBI* (3586)

3501 ATCCAGCATTAGTCAGAAAACCTAGCCAAGTGTATCCAAGTTAACTTTTCTGCAAGAAGCTAGGCTTGTGGGTGGCAATTTGATGATGATGATCTCAG
980▶ D P A L V R K L S Q V L S K L T F L Q E A R L V G W Q F D D D D L S

MscI (3643)

3601 TGTATTACAGGTGCTTTTAAACTAGTAACTGCTTAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAG
1013▶ V I T G A F K L V T A •

SpeI (3621) *NheI* (3637)

3701 TGAATAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACCTGATTTCATT
3801 TTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTTAAAATACAGCATAGCAAACTT
3901 TAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCT
4001 CACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCAAGTTTGAAGTACTGCTTTCATTTCTTTATGTTTTAAATGCAGTACCTCCCACATTCCC

SspI (4110) *SwaI* (4124)

4101 TTTTATGTAATAATTCAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATA
4201 TCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTTCTGGTGTACTTGA
141▶ 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

SacI (4385)

4301 GGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACAT
134▶ 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
4401 GCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACA
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
4501 GCAGACCAATGGCAATGGCTTGCAGCACAGACAGTACCTGCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGCTGATGG
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
4601 CCGCCCCGACATGGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTT
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 (4757)

4701 CATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTG
14 M ▶

SacI (4814)

4801 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGGAAAG
4901 TCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGT

SpeI (4912)

5001 ACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCA
5101 GCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCCAAGTGGGAGTTTACCGTAAATACTCCACC
5201 CATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTATTATTGACGTCAATGGCGGGGGTCTTGGCGGTCAGCCAGGCGGGC

SnaBI (5040)

5301 CATTACCCTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCG
5401 TTTTCCATAGGCTCCGCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTC
5501 CCCCTGGAAGTCCCTCGTGGCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAG

ApaI (5655)

5601 CTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGT
5701 AACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTA
5801 CAGAGTTCTTGAAGTGGTGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGG
5901 TAGCTCTTGATCCGGCAAACAACCCCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCT

EagI (6091)

PacI (6071) SwaI (6080) **NotI (6090)**

6001 TTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAA
6101 TAAAATATCTTTATTTTCATTACATCTGTGTGTTGTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTA
6201 GCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA