



**PvuI (7)**  
**SgfI (6)**  
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAAGTGGCGGGGTAAGTGGAAAGTGTGTCTGTACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **PvuII (239)**  
201 GTGAACGTTCTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

**BspHI (560)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTCATCATGAATTCATAAAGGACAATAGCCGAGCCCTATTCA  
1 M N F I K D N S R A L I Q

**AgeI (552)**  
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 GAGCAGGATGCTGCTAGAGGGATCATTACATGATTTTAAAAAGGGTTCAGAGTCTGTAACCTCTTCTTAAATCCCTTAAGGAGTGGAACTATCCTC  
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

**NruI (663)**  
801 TATTTGAGGACTTGAATGGCAAAGTCTTTTTCATCAGACATCAGAAGGAGACTTGGACGATTTGGCTCAGGATTTAAAGGACTTGTACCATACCCCATC  
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

**Tth111I (818)**  
1001 CACCGGTGGAGCAGCTGACCCTGAATGGCCTCCTGCAGGCTCTTCAGAGCCCTGCATCATTGAAGGGGAATCTGGCAAAGGCAAGTCCACTCTGCTGC  
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

**BspHI (1562)**  
1401 CCACTGAGTGCCTGAGGCACATACGGCAGTTTGGTGCCTGACTGCTGAGGTGGGGATATGACAGAAGACAGCGCCAGGCTCTCATCCGAGAAGTGC  
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 ATCCAGATGGGTGAAAGTGAATTCACACTCTCACACAAAACACGCTGTTCCATACCTTCTATGATCTGTTGATACAGAAAAACAAACACAAACATAAAG  
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)**  
1701 GTGTGGCTGCAAGTACTTCATTCGGAGCCTGGACCACTGTGGAGACCTAGCTCTCGAGGGTGTGTTCTCCACAAGTTTGATTTGAACTGCAGGATGT  
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 GTCCAGCGTGAATGAGGATGTCCTGCTGACAACCTGGGCTCCTCTGTAATATACAGCTCAAAGTTTCAAGCCAAAGTATAAATCTTTTCAAGTCACTT  
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 TTTCCGACATTACACTTATAGCAGCTGCTCCGGTACACCTGTGGGTACTCTGTGGAAGCCACCAGGGCTGTTATGAAGCACCTCGCAGCAGTGT  
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 TCAACACGGCTGCTTCTCGGACTTTCCATCGCCAAGAGGCTCTGAGAGACAGGAATCTTTGCAAAGTGTAAAAACACCACTGAGCAAGAAATCTG  
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 AAGTAAAAGCTTATATCAACTCAGGAAACATCCCGGATTACTTATTTGACTTCTTTGAACATTTGCCAATTTGCAAGTGCCTGGACTTTCATTA  
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 ACTGGACTTTTATGGGGAGCTATGGCTTTCATGGGAAAAGGCTGCAGAAGACACAGGTGGAATCCACATGGAAGAGGCCCCAGAAACCTACATCCCAGC  
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

**Spl (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 CAGAATCAACGGCTGCCGGTGGTCTGACTGACAGCTTGGGTAACCTTGAAGAACCTTACAAGCTCATAATGGATAACATAAAAGATGAATGAAGAAGATG  
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 CTATAAACTAGTGAAGGCCTGAAAAACCTGAAGAAGATGTGTTTATTCATTTGACCCACTTGTCTGACATTGGAGAGGGAATGGATTACATAGTCAA  
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 GTCTCTGCAAGTGAACCTGTGACCTTGAAGAAATCAATTAGTCTCTGCTGCTTGTCTGCAAATGCAGTAAAATCTAGCTCAGAATCTTCAAAAT  
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 AGCTCACCGCACTGATGCTGCCCTGGGGCTGTGACGTGCAAGGCAGCTGAGCAGCCTGTTGAAACATTTGGAGGAGGTCACCAACTCGTCAAGCTTGG  
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 GTTAAAACTGGAGACTCACAGATACAGAGATTAGAATTTTAGTGCATTTTTTGGAAAAGAACCTCTGAAAAACTTCAGCAGTTGAATTTGGCGGA  
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 AATCGTGTGAGCAGTGATGGATGGCTTGCCTTCATGGGTGATTTTGAAGATCTTAAGCAATTAGTGTTTTTGACTTTAGTACTAAAAGATTTCTACCTG  
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 ATCCAGCATTAGTCAGAAAACCTAGCCAAGTGTATCCAAGTTAACTTTCTGCAAGAAGCTAGGCTTGTGGGTGGCAATTTGATGATGATGATCTCAG  
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 TGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACCTGATTTCATT  
3801 TTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTTAAAATACAGCATAGCAAACTT  
3901 TAACCTCAAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCT  
4001 CACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCAAGTTTGAAGTACTGCTTTCATTTCTTTATGTTTTAAATGCAGTACCTCCCACATTCCC

*HpaI* (3775)

4101 TTTTAGTAAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATA  
4201 TCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCCTGGTGTACTTGA  
141▶ N R T Y K L

*SspI* (4110) *SwaI* (4124)

4301 GGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCGCACAT  
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

*BstXI* (4414)

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 GCAGACCAATGGCAATGGCTTCAAGCAGACAGTACCTGCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGCTGATGG  
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 CATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTG  
14 M

*SacI* (4814)

4801 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGGAAAG  
4901 TCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGT

*SpeI* (4912)

5001 ACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCA  
5101 GGGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCCAAGTGGGAGTTTACCGTAAATACTCCACC  
5201 CATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTATTATTGACGTCAATGGCGGGGGTCTTGGCGGTGAGCCAGGCGGGC

*SnaBI* (5040)

5301 CATTACCCTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAAGGCCAGCAAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCG  
5401 TTTTCCATAGGCTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTC  
5501 CCCCTGGAAGTCCCTCGTGGCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCATAG

**ApaI (5655)**

5601 CTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTCAGCCCCACCGCTGCGCCTTATCCGGT  
5701 AACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTA  
5801 CAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGG  
5901 TAGCTCTTGATCCGGCAAACAACCCAGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCT

**EagI (6091)**

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

6001 TTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAA  
6101 TAAAATATCTTTATTTTCATTACATCTGTGTGTTGTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTA  
6201 GCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA