



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

**MfeI (82)**  
101 GAGAAAGTGGCGGGGTAACCTGGAAAGTGTGTCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **HindIII (245)** **Bsu36I (291)**  
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC

301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

**AgeI (552)** **BspLU1I (568)** **SapI (581)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGGCAACATGTCCAAGCTGCTTCTCTGCACTTGCC

**BsrBI (611)** 1► M S K L L F L S L A

601 CTCTGGGACGCCCTCCCTGGTTACTGAAACAGCTCTCGTGGCTCTAAGCCAGCCAGAGTGAATGCCATGCTTCTCGGTATCCCGTGGCCGTGG

11► L W A S R S P G Y T E T A L V A L S Q P R V Q C H A S R Y P V A V

**MseI (775)**  
701 ACTGCTCTGGACTCCTCTCCAGGCTCCCAACTCCACCAGATCCACGTCCTTATTGCCACTTACAGGCTCGGTGTGGCCACCCAGCAGCAGAGCCAGCC

44► D C S W T P L Q A P N S T R S T S F I A T Y R L G V A T Q Q Q S Q P

**StuI (820)**  
801 CTGCCTACAACGGAGCCCCAGGCTCCCGATGCACCATCCCCGACGTGCACCTGTTCTCCACGGTGCCTACATGCTAAATGTCACTGCAGTGCACCCA

77► C L Q R S P Q A S R C T I P D V H L F S T V P Y M L N V T A V H P

**BspEI (959)** **FspI (976)** **SdaI (995)**  
901 GCGGCGCCAGCAGCAGCCTCTAGCCTTTGTGGTGTAGCGAATCATCAAGCCGACCTCCGGAAGGCGTGGCCTGCGCACAGCGGGACAGCGCCTGC

111► G G A S S S L L A F V A E R I I K P D P P E G V R L R T A G Q R L

1001 AGGTGCTCTGGATCCCCCTGCTTCTGGCCCTCCCGACATCTTCTCTCAAGTACCAGCTCCGCTACCGGCGCCGAGGAGCCTCTCACTCCGCCA

144► Q V L W H P P A S W P F P D I F S L K Y R L R Y R R R G A S H F R Q

**SandI (1103)** **Bsu36I (1130)**  
1101 GGTGGGACCCATTGAAGCCACGACTTTACCCTCAGGAACTCGAAACCCATGCCAAGTATTGCATCCAGGTGTGAGCTCAGGACCTCACAGATTATGGG

177► V G P I E A T T F T L R N S K P H A K Y C I Q V S A Q D L T D Y G

**Acc65I (1268)**  
1201 AAACCAAGTGACTGGAGCCTCCCTGGGCAAGTAGAAAAGTGCACCCATAAGCCGTTCTCTGGAGTAGGGTACCTGGAGTGGGCTTCCCAACAGACCCCC

211► K P S D W S L P G Q V E S A P H K P V P G V G V P G V G F P T D P

**FspI (1315)** **EcoRI (1323)**  
1301 TGAGCCTTCAAGAGTGGCAGGGAATTCACAGTCAGCCTGTACCTTCCAGGAAGTGTCTCTGAGGTTGAGGCTATGTCCACAGCTTTGCTGAATC

6► L S L Q E L R R E F T V S L Y L A R K L L S E V Q G Y V H S F A E S

1401 TCGATTGCCAGGAGTGAACCTGGACCTCCTGCCCTGGGATACCATCTTCCCAATGTTTCCCTGACTTCCAGGCATGGCATCACCTCTCTGACTCTGAG

39► R L P G V N L D L L P L G Y H L P N V S L T F Q A W H H L S D S E

**SandI (1557)**  
1501 AGACTCTGCTTCTCGTACCACACTTCGCGCCCTCCCTGCCATGCTGGGAGGGCTGGGACCCAGGGACCTGGACCAGCTCAGAGAGGGAGCAGCTGT

73► R L C F L A T T L R P F P A M L G G L G T Q G T W T S S E R E Q L

1601 GGGCCATGAGGCTGGATCTCCGGGACCTGCACAGGCACCTCCGCTTTCAGGTGCTGGTGCAGGATCAAATGTTCAAAGGAGGAGGAGGACAAGGAGGA

106► W A M R L D L R D L H R H L R F Q V L A A G F K C S K E E E D K E E

**AvrII (1736)**  
1701 AGAGGAAGAGGAGGAAGAAGAAGAAAAGAGCTGCCCTAGGGCTGTGGTGGCCCCAATCAGGTGTATCCCAAGTGTCTGGCCCCAGCTGCTCTAT

139► E E E E E E E K K L P L G A L G G P N Q V S S Q V S W P Q L L Y

**XcmI (1881)**  
1801 ACCTACCAGCTCCTTCACTCCCTGGAGCTGTCTGTCTCGGGCTGTTCCGGACCTGCTGCTGCTGCTCCTGCCAGGCGCCAGGCTCAGCCTGGGATT

173► T Y Q L L H S L E L V L S R A V R D L L L L S L P R R P G S A W D

**MscI (1911)**  
**NheI (1905)**  
1901 CCTAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGA

206► S •

**HpaI (2043)** **MfeI (2054)**  
2001 TGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACCTGCAATCATTATTTATGTTTCAGGTTCCAGGGGAGGTGTGGAG

**EcoRI (2139)**  
2101 GTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAATAACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTGAAATCCT

2201 TTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGT

**SapI (2321)** **SspI (2378)** **SwaI (2392)**  
2301 ATTTTCCAAGGTTTGAAGTACTGCTTTCATTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAATATTCAGAATAATTTAAAT

2401 ACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACA

2501 AAGGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACC

141► • N R T Y K L P I L E E I T T K V

**SacI (2653)**  
2601 AGCTTGCATTCTCAATGAGCAAAAGCAGTCAAGGAGCATAGTCAAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGT

123► L K G N M E I L 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

2701 CCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGAC  
90 V E D S Y P H 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  
StuI (2817)

2801 AGTGACCCTGCCAATGTAGGCCTCAATGTGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTCTTGTGCTCATAG  
57 T V R G I Y A E 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  
BbsI (2963)  
XmnI (2959)

2901 AGCATGGTATCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTAT  
23 L M T I K E T A V E V L E L D Q Q S I N F T K M  
AseI (3025) SacI (3082)

3001 ACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGA  
SpeI (3180)

3101 CCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCC  
3201 ATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCG  
SnaBI (3308)

3301 ATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAG  
NdeI (3413)

3401 GGGGCGTACTTGGCATATGATACTTGTACTGCAAGTGGGCGAGTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGT  
SdaI (3591) PacI (3599)

3501 TACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGGTCTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCGTGCAGGT  
BspLU11I (3609)

3601 TAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCA  
3701 TCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCCTGTT  
3801 CCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGG  
3901 TCGTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCCGCGGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACA  
4001 CGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGC  
4101 TACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTG  
4201 GTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTG  
EagI (4359)  
PacI (4339) SwaI (4348) NotI (4358)

4301 GAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCGCAATAAAATATCTTTATTTTATTACATCTGTGTG  
4401 TTGGTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGG  
4501 TGCCAGAACATTTCTCTATCGAA