



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)**  
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCCTACCTGAGGCC  
**PvuII (239)**  
**Bsu36I (291)** 301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

**SmaI (592)**  
**EcoO109I (592)** 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTCAACATGTCTGCGGGAGACCCCGCGTGGGATCCGGGTCCCT  
**AgeI (552)** 1► M S A G D P R V G S G S L  
**BamHI (586)**  
**EagI (692)** 601 GGACTCCTTCATGTTCTCCATACCTTGGTCGCGCTTAACGTGGGAGTGAGGCGCCGCTATCGCTGTTCTTGAACCTCGGACGCCGCGTGGCGCCGAC  
13► D S F M F S I P L V A L N V G V R R R L S L F L N P R T P V A A D

**BstXI (617)**  
701 TGGACCTTGTGCGGAGGAGATGGGCTTCGAGTACTTGGAGATCCGAGAGCTGGAAACGCGCCTGACCCACTCGCAGTTTGTGGATGCCTGGCAGG  
47► W T L L A E E M G F E Y L E I R E L E T R P D P T R S L L D A W Q  
**ScaI (731)** 801 GGCCTCTGGCGCTGTGCGCAGGCTGCTAGAGCTGCTGCCCTTGTAGACCGTGAGGATATACTGAAGGAGCTGAAGTCGCGCATCGAGGAGGACTG  
80► G R S G A S V G R L L E L L A L L D R E D I L K E L K S R I E E D C

**MscI (953)**  
901 CCAGAAATACTTAGGTAAGCAGCAGAACCAGGAGTCCGAGAAGCCTTTACAGGTGGCCAGAGTGAAAGCAGTGTCCACAAACAAAGGAACTGGGAGGC  
113► Q K Y L G K Q Q N Q E S E K P L Q V A R V E S S V P Q T K E L G G

**AvrII (1020)** 1001 ATCACCACCCTTGATGACCCCTAGGACAAACGCGGAACTTTTGCATGCCTTATCTGCTACTGCCCAATGATATCGAGTTTGTGACGAGATGATCC  
147► I T T L D D P L G Q T P E L F D A F I C Y C P N D I E F V Q E M I  
**EcoRV (1072)** 1101 GGCAACTAGAACAGACAGACTATCGGCTTAAGTTGTGTGTCCGACCGTGACGTCCTGCCGGCACCTGTGTCTGGTCCATTGCCAGCGAGTAATTGA  
180► R Q L E Q T D Y R L K L C V S D R D V L P G T C V W S I A S E L I E  
1201 GAAAAGGTGTCGCGCATGGTGGTGGTGTTCGACGATTATCTACAGAGCAAGGAATGTGACTTCCAGACCAAGTTTGCCTCAGCCTGTCTCCAGGT  
213► K R C R R M V V V V S D D Y L Q S K E C D F Q T K F A L S L S P G  
1301 GTC AACAGAAA CGACTGATTCCTATTAATAACAAGGCGATGAAGAAGGACTTTCCAGTATCTGCGGTTTCATCTATATGCGACTATACCAACCTT  
247► V Q Q K R L I P I K Y K A M K K D F P S I L R F I T I C D Y T N P

**MscI (1459)** 1401 GCACCAAGTCTGGTTCTGGACCCGCTTGCCAAGGCTTTGTCCTGCCTGAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAAC  
280► C T K S W F W T R L A K A L S L P •

**NheI (1453)**  
**HpaI (1591)** 1501 CACA ACTAGAATGCAGTGA AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAAC

**MfeI (1602)** 1601 AACAAATGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCAAAATA  
**EcoRI (1687)**  
1701 CAGCATAGCAAACTTTAACCTC AAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCAT

**SapI (1869)**  
1801 TAGCTGTTTGACGCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTACTGCTCTTCATTTCTTTATGTTTAAATGCACT

**SspI (1926)** 1901 GACCTCCACATTCCTTTTATGAAAATATTCAGAAAATATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTC  
**Swal (1940)**

**EcoO109I (2001)** 2001 AAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAG  
141► •  
2101 TTCCTGGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGA  
139► N R T Y K L 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

**SacI (2201)** 2201 TGAGCTCTGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCCTT  
106► L E R C M 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  
**BstXI (2230)**

**StuI (2365)** 2301 CTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCAGACAGTACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCA  
73► Q G N S V 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  
2401 GTCTTGGTCTGATGGCCGCCCCGACATGGTGGTGTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAG  
39► T K T R I A 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

**BbsI (2511)** 2501 AGATGTTGAAGGTTCTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGC  
**XmnI (2507)** 6► I N F T K M  
**AseI (2573)**

2601 GTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTT  
SacI (2630)

2701 ACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTAT  
SpeI (2728)

2801 CCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGAAAGTCCCATAAAGTCATGT  
SnaBI (2856)

2901 ACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTAAGTGGGCAGTTTA  
NdeI (2961)

3001 CCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGAAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGC

3101 GGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAA  
PacI (3147)  
PstI (3140) SdaI (3139) BspLU11I (3157)

3201 GCGCGCTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAA

3301 AGATACCAGGCGTTTCCCTGGAAGCTCCCTCGTGGCTCTCTGTCCGACCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCG

3401 TGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCG  
ApaLI (3471)

3501 CTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGG

3601 TATGTAGGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCT

3701 TCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGG

3801 ATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTT  
PacI (3887) SmaI (3896)

3901 AAATCAGCGGCCGAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAAC  
EagI (3907)  
NotI (3906)

4001 GAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTCAAGTGCAAGTGCCAGAGTCCAGAACATTTCTCTATCGAA