



**EcoRI (23)**

**EcoRV (17)**

**SdaI (38)**

**NotI (2)**

**SalI (9)**

**XbaI (19)**

**BamHI (29)**

**SpeI (45)**

1 GCGGCCGCGTCGACGATATCTAGAATTCGGATCCTGCAGGGCCCACTAGTATCTGCAGAGGGCCCTGCGTATGA

75 GTGCAAGTGGGTTTTAGGACCAGGATGAGGCGGGGTGGGGGTGCCTACCTGACGACCGACCCCGACCCACTGGA

149 CAAGCACCCAACCCCAATCCCAAATTGCGCATCCCTATCAGAGAGGGGGAGGGGAAACAGGATGCGGCGAG

223 GCGCGTGCGCACTGCCAGCTTCAGCACCGCGGACAGTGCCTTCGCCCCGCTGGCGGCGCGGCCACCGCCG

297 CTCAGCACTGAAGGCGCGCTGACGTCCTGCGCGTCCCGCAAACCTCCCTTCCCGGCCACCTTGGTTCGCGT

371 CCGCGCCGCGCGGCCAGCCGACCGACCCACGCGAGGCGCGAGATAGGGGGCACGGGCGCGACCATCTGC

**SgrAI (453)**

**Eco47III (466)**

445 GCTGCGCGCGCGGCGACTCAGCGCTGCCTCAGTCTGCGGTGGGAGGAGTCTGTGCTGCTGAGAGCG

**AvrII (575)**

519 CAGCTGTGCTCCTGGGCACCGCGCAGTCCGCCCCGCGGCTCCTGGCCAGACCACCCTAGGACCCCTGCC

**NcoI (602)**

593 AAGTCGAGCCATGTTTCTGGGGCCCTGCATGCTGCTGCTGCTGCTGCTGGCCTGAGGCTACAGCTCTCC

1 M V L G P C M L L L L L L L G L R L Q L S

667 CTGGGCATCATCCCAGTTGAGGAGGAGAACCCGACTTCTGGAACCGCGAGGCAGCCGAGGCCCTGGGTGCCG

22 L G I I P V E E E N P D F W N R E A A E A L G A A

741 CAAGAAGCTGCAGCCTGCACAGACAGCCGCAAGAACCTCATCATCTTCTGGGCGATGGGATGGGGGTGTCTA

46 K K L Q P A Q T A A K N L I I F L G D G M G V S

**BamHI (830)**

815 CGGTGCAGCTGCCAGGATCCTAAAAGGGCAGAAGAAGGACAAACTGGGGCCTGAGATACCCCTGGCTATGGAC

71 T V T A A R I L K G Q K K D K L G P E I P L A M D

889 CGTTCCCATATGTGGCTCTGTCCAAGACATAACAATGTAGACAAACATGTGCCAGACAGTGGAGCCACAGCCAC

96 R F P Y V A L S K T Y N V D K H V P D S G A T A T

963 GGCCTACCTGTGCGGGTCAAGGGCAACTTCCAGACCATTGGCTTGAGTGCAGCCGCCGCTTTAACAGTGCA

120 A Y L C G V K G N F Q T I G L S A A A R F N Q C

1037 ACACGACACGCGCAACGAGGTCATCTCCGTGATGAATCGGGCAAGAAAGCAGGGAAGTCAGTGGGAGTGGA

145 N T T R G N E V I S V M N R A K K A G K S V G V V

1111 ACCACCACAGAGTGCAGCACGCTCGCCAGCCGGCACCTACGCCACACGGTGAACCGCAACTGGTACTCGGA

170 T T T R V Q H A S P A G T Y A H T V N R N W Y S D

1185 CGCCGACGTGCCTGCCTCGGCCCGCAGGAGGGGTGCCAGGACATCGCTACGAGCTCATCTCCAACATGGACA

194 A D V P A S A R Q E G C Q D I A T Q L I S N M D

1259 TTGATGTGATCCTGGGTGGAGGCCGAAAGTACATGTTTCGCATGGGAACCCAGACCCTGAGTACCCAGATGAC

219 I D V I L G G G R K Y M F R M G T P D P E Y P D D

1333 TACAGCCAAGGTGGGACCAGGCTGGACGGGAAGAATCTGGTGCAGGAATGGCTGGCGAAGCGCCAGGGTGCCCG

244 Y S Q G G T R L D G K N L V Q E W L A K R Q G A R

1407 GTATGTGTGGAACCGCACTGAGCTCATGCAGGCTTCCCTGGACCCGCTGTGACCCATCTCATGGGTCTCTTTG

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

1481 AGCCTGGAGACATGAAATACGAGATCCACCGAGACTCCACACTGGACCCCTCCCTGATGGAGATGACAGAGGCT

293 E P G D M K Y E I H R D S T L D P S L M E M T E A

1555 GCCCTGCGCCTGCTGAGCAGGAACCCCGCGGCTTCTTCTCTTCGTGGAGGGTGGTCGCATCGACCACGGTCA  
318▶ A L R L L S R N P R G F F L F V E G G R I D H G H  
1629 TCACGAAAGCAGGGCTTACCGGGCACTGACTGAGACGATCATGTTTCGACGACCCATTGAGAGGGCGGGCCAGC  
342▶ H E S R A Y R A L T E T I M F D D A I E R A G Q  
BbsI (1758)  
1703 TCACCAGCGAGGAGACACGCTGAGCCTCGTCACTGCCGACCACTCCCACGTCTTCTCTTCGGAGGCTACCCC  
367▶ L T S E E D T L S L V T A D H S H V F S F G G Y P  
1777 CTGCGAGGGAGCTCCATCTTCGGGCTGGCCCTGGCAAGGCCCGGGACAGGAAGCCTACACGGTCTCTCTATA  
392▶ L R G S S I F G L A P G K A R D R K A Y T V L L Y  
1851 CGGAAACGGTCCAGGCTATGTGCTCAAGGACGGCGCCCGCGGATGTTACCGAGAGCGAGAGCGGGAGCCCCG  
416▶ G N G P G Y V L K D G A R P D V T E S E S G S P  
1925 AGTATCGGCAGCAGTCAGCAGTGCCCTGGACGAAGAGACCCACGCAGGCGAGGACGTGGCGGTGTTTCGCGCGC  
441▶ E Y R Q Q S A V P L D E E T H A G E D V A V F A R  
1999 GGCCCGCAGGCGCACCTGTTTCACGGCGTGAGGAGCAGACCTTCATAGCGCACGTCATGGCCTTCGCCGCTG  
466▶ G P Q A H L V H G V Q E Q T F I A H V M A F A A C  
2073 CCTGGAGCCCTACACCGCCTGCGACCTGGCGCCCCCGCGGCACCACCGACGCCGCGCACCCGGGGCGGTCCC  
490▶ L E P Y T A C D L A P P A G T T D A A H P G R S  
NheI (2168)  
2147 GGTCCAAGCGTCTGGATTGAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAAC  
515▶ R S K R L D •  
2221 TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCT  
2295 GCAATAACAAGTTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTT  
2369 TAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTAATTCTAAAATACAGCATAGCAAACTTTAACCTCC  
2443 AAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGC  
2517 ATTAGCTGTTTGCAGCCTCACCTTCTTTTCATGGAGTTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTAGCT  
SspI (2647)  
2591 CTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCCTTTTTAGTAAAATATTTCAGAAAATAATTTAA  
2665 ATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCC  
2739 CCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAG  
2813 CTTATCCTCAGTCCTGCTCCTCTGCCACAAAGTGACGCGAGTTGCCGGCCGGGTCGCGCAGGGCGAACTCCCGC  
125▶ • D Q E E A V F H V C N G A P D R L A F E R  
2887 CCCACGGCTGCTCGCCGATCTCGGTTCATGGCCGGCCCGGAGGCGTCCCGGAAGTTCGTGGACACGACCTCCGA  
102▶ G W P Q E G I E T M A P G S A D R F N T S V V E S  
2961 CCACTCGGCGTACAGCTCGTCCAGGCCGCGCACCCACACCCAGGCCAGGGTGTGTCGGCACCACTGGTCTC  
78▶ W E A Y L E D L G R V W V W A L T N D P V V Q D Q  
SgrAI (3075)  
3035 GGACCGCGCTGATGAACAGGGTCACGTCGTCCCGGACCACACCGGCGAAGTCGTCTCCACGAAGTCCCGGGAG  
53▶ V A S I F L T V D D R V V G A F D D E V F D R S  
3109 AACCCGAGCCGGTCCGTCAGAACTCGACCGCTCCGGCGACGTCGCGCGCGGTGAGCACCCGAACGGCACTGGT  
28▶ F G L R D T W F E V A G A V D R A T L V P V A S T  
3183 CAAGTTGGCCATGATGGCTCCTCCTGTGAGGAGAGGAAAGAGAAGAAGGTTAGTACAATTGCTATAGTGAGTTG  
4▶ L K A M  
3257 TATTATACTATGCAGATATACTATGCCAATGATTAATTGTCAAAGTAGGGCTGCAGGTTAATTAAGAACATGTG  
3331 AGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCC  
3405 CTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCG  
3479 TTTCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCCTTTCT  
3553 CCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTGCTTCGCTCCA

3627 AGCTGGGCTGTGTGCACGAACCCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCC  
3701 AACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGG  
3775 CGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTC  
3849 TGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGT  
3923 GGTTTTTTTGTGGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTAC  
3997 GGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAAT  
4071 CA