



EcoRI (23)

NotI (2)

XbaI (19)

SdaI (38)

SpeI (45)

1 GCGGCCGCGTCGACGATATCTAGAATTCGGATCCTGCAGGGCCCACTAGTTACCGACCACCCGCAAACAGCAGG

75 GTCCCTGGGCTTCCCAAGCCGCGCACCTCTCCGCCCGCCCTGCGCCCTCCTTCTCGCGTCTGCCCTCTC

SphI (188)

149 CCCCACCCGCTTCTCCCTCCCGCCCCAGCGGCGCATGCGCCGCGCTCGGAGCGTGTTTTTATAAAAGTCCG

SacII (227)

223 GCCGCGGCCAGAAACTTCAGTTTGTGGCTGCGGCAGCAGGTAGCAAAGTGACGCCGAGGGCCTGAGTGCTCCA

NcoI (328)

SphI (350)

297 GTAGCCACCGCATCTGGAGAACCAGCGGTTACCATGTTCTGGGGCCCTGCATGCTGCTGCTGCTGCTGCTGCT

▶ M V L G P C M L L L L L L L L

371 GGGCCTGAGGCTACAGCTCTCCCTGGGCATCATCCCAGTTGAGGAGGAGAACCCGGACTTCTGGAACCCGCGAGG

14▶ G L R L Q L S L G I I P V E E E N P D F W N R E

445 CAGCCGAGGCCCTGGGTGCCCAAGAAGCTGCAGCCTGCACAGACAGCCGCAAGAACCTCATCATCTTCTCTG

39▶ A A E A L G A A K K L Q P A Q T A A K N L I I F L

519 GGCGATGGGATGGGGTGTCTACGGTGCAGCTGCCAGGATCCTAAAAGGGCAGAAGAAGGACAAACTGGGGCC

64▶ G D G M G V S T V T A A R I L K G Q K K D K L G P

NdeI (623)

593 TGAGATACCCCTGGCTATGGACCGCTTCCCATATGTGGCTCTGTCCAAGACATACAATGTAGACAAACATGTGC

88▶ E I P L A M D R F P Y V A L S K T Y N V D K H V

667 CAGACAGTGGAGCCACAGCCACGGCCTACCTGTGCGGGTCAAGGGCAACTTCCAGACCATTGGCTTGAGTGCA

113▶ P D S G A T A T A Y L C G V K G N F Q T I G L S A

741 GCCGCCCCGCTTAAACCAGTGCAACACGACACGCGCAACGAGGTGCATCTCCGTGATGAATCGGGCCAAGAAAAGC

138▶ A A R F N Q C N T T R G N E V I S V M N R A K K A

815 AGGGAAGTCAGTGGGAGTGGTAACCACCACACGAGTGCAGCACGCTCGCCAGCCGGCACCTACGCCACACGG

162▶ G K S V G V V T T T R V Q H A S P A G T Y A H T

889 TGAACCGCAACTGGTACTCGGACGCCGACGTGCCTGCCTCGGCCCGCCAGGAGGGGTGCCAGGACATCGCTACG

187▶ V N R N W Y S D A D V P A S A R Q E G C Q D I A T

963 CAGCTCATCTCCAACATGGACATTGATGTGATCCTGGGTGGAGGCCGAAAGTACATGTTTCGCATGGGAACCC

212▶ Q L I S N M D I D V I L G G G R K Y M F R M G T P

1037 AGACCCTGAGTACCCAGATGACTACAGCCAAGGTGGGACCAGGCTGGACGGGAAGAATCTGGTGCAGGAATGGC

236▶ D P E Y P D D Y S Q G G T R L D G K N L V Q E W

1111 TGGCGAAGCGCCAGGGTCCCCGGTATGTGTGGAACCGCACTGAGCTCATGCAGGCTTCCCTGGACCCGTCTGTG

261▶ L A K R Q G A R Y V W N R T E L M Q A S L D P S V

1185 ACCCATCTCATGGGTCTCTTTGAGCCTGGAGACATGAAATACGAGATCCACCGAGACTCCAACTGGACCCCTC

286▶ T H L M G L F E P G D M K Y E I H R D S T L D P S

SacII (1310)

1259 CCTGATGGAGATGACAGAGGCTGCCCTGCGCCTGCTGAGCAGGAACCCCGCGGCTTCTTCTCTTCGTGGAGG

310▶ L M E M T E A A L R L L S R N P R G F F L F V E

1333 GTGGTCGCATCGACCACGGTCATCACGAAAGCAGGGCTTACCGGGCACTGACTGAGACGATCATGTTTCGACGAC

335▶ G G R I D H G H H E S R A Y R A L T E T I M F D D

1407 GCCATTGAGAGGGCGGGCCAGCTCACCAGCGAGGAGGACACGCTGAGCCTCGTCACTGCCGACCACTCCCACGT

360▶ A I E R A G Q L T S E E D T L S L V T A D H S H V

1481 CTTCTCCTTCGGAGGCTACCCCTGCGAGGGAGCTCCATCTTCGGGCTGGCCCTGGCAAGGCCCGGGACAGGA

384▶ F S F G G Y P L R G S S I F G L A P G K A R D R

1555 AGGCCTACACGGTCTCTATAACGAAACGGTCCAGGCTATGTGCTCAAGGACGGCGCCCGGGCGGATGTTACC

409▶ K A Y T V L L Y G N G P G Y V L K D G A R P D V T

1629 GAGAGCGAGAGCGGGAGCCCCGAGTATCGGCAGCAGTCAGCAGTGGCCCTGGACGAAGAGACCCACGCAGGCCA

434▶ E S E S G S P E Y R Q Q S A V P L D E E T H A G E

1703 GGACGTGGCGGTGTTTCGCGCGCGGCCCGCAGGCGCACCTGGTTTCACGGCGTGCAGGAGCAGACCTTCATAGCGC

458▶ D V A V F A R G P Q A H L V H G V Q E Q T F I A

1777 ACGTCATGGCCTTCGCCGCTGCCTGGAGCCCTACACCGCCTGCGACCTGGCGCCCCCGCCGGCACCAACCGAC

483▶ H V M A F A A C L E P Y T A C D L A P P A G T T D

NheI (1894)

1851 GCCGCGACCCGGGGCGGTCCCGTCCAAGCGTCTGGATTGAAGCTAGCTGGCCAGACATGATAAGATACATTG

508▶ A A H P G R S R S K R L D •

1925 ATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT

MfeI (2043)

1999 TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTTATGTTTCAGGTTCA

2073 GGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTAATTCTAAAATACA

2147 GCATAGCAAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCA
2221 TCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTTCATGGAGTTTAAGATATAGTGTAT
2295 TTTCCCAAGGTTTGAAGTACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCCTTTTTAGT
2369 AAAATATTTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGC
2443 TCAAGGCCCTTCATAATATCCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGA
2517 CAGCAAGAAAGCGAGCTTCTAGCTTATCCTCAGTCCTGCTCCTCTGCCACAAAGTGCACGCAGTTGCCGGCCGG

125↓ • D Q E E A V F H V C N G A P

2591 GTCGCGCAGGGCGAACTCCC GCCCCCACGGCTGCTCGCCGATCTCGGTCATGGCCGGCCCGAGGCGTCCC GGA
110↓ D R L A F E R G W P Q E G I E T M A P G S A D R F
2665 AGTTCGTGGACACGACCTCCGACCACTCGGCGTACAGCTCGTCCAGGCCGCGCACCCACACCCAGGCCAGGGTG
85↓ N T S V V E S W E A Y L E D L G R V W V W A L T

SgrAI (2801)

2739 TTGTCCGGCACCACCTGGTCTGGACCGCGCTGATGAACAGGGTCAAGTCTGCCGGACCACACCCGGCGAAGTC
60↓ N D P V V Q D Q V A S I F L T V D D R V V G A F D
2813 GTCCTCCACGAAGTCCCGGGAGAACC CGAGCCGGTCCGTCAGAACTCGACCGCTCCGGCGACGTCGCGCGCGG
36↓ D E V F D R S F G L R D T W F E V A G A V D R A T
2887 TGAGCACCGGAACGGCACTGGTCAACTTGGCCATGATGGCTCCTCCTGTGTCAGGAGAGGAAAGAGAAGAAGTTA
11↓ L V P V A S T L K A M

MfeI (2964)

2961 GTACAATTGCTATAGTGAGTTGATTATACTATGCAGATATACTATGCCAATGATTAATTGTCAA ACTAGGGCT

3035 GCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGCTGGCG

3109 TTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGAC

3183 AGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTA

3257 CCGGATACCTGTCCGCCTTTCTCCCTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGT

3331 TCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTCAGCCCGACCGCTGCGCCTTATC

3405 CGGTA ACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGA

3479 TTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGA

3553 ACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAA

3627 ACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAG

3701 AAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATG

3775 GCTAGTTAATTAACATTTAAATCA