



XbaI (15) SdaI (29)

NotI (2) NsiI (14) EcoRI (19) SpeI (36)

1 CGGGCGGTATGCATCTAGAATTCCTGCAGGGCCCACTAGTCTGTAAAGCTGGAAGTCTGGCAGTCTGAGCTGGCCACCCCTCAGGACCTCCTCCTTG

101 TGCCCACTGAATGACTCACCTTGGCATAGACATAATGGTCAAGGGGGGCACACAGCCTGATTCCTGCTCACTCCAGGCCCTTCAATGCTTTCCGAG

NcoI (270)

201 AAGTCCATTGAGCTGGGAGCTTGTACTGCACCAAGGGCTGACATCCTGGCAGCCAGGGATGAAAGCAGCCATGGGGCTACCCTTGGCGTATGCCTCACT

301 GCGGCAGAGAACAAGGCTCTATTAGCAAATGCCTGGAGTAGACACCAGAAAGTCAAGCATGGGCAGAGGAAGGCAGGCGTTGGGGGTGGAGGGAG

BglII (481)

401 CAGAGCTGTCTGTTTTCCAGAAGCCCAAGGGTACAGATGGCCGCTGGGGGGAACAGTGGAGGGGATAGATGGCCTGAGATCTCAAACATCAACAGC

501 CTCCTCCCACCAACGATGAAGGTGGAGTTGTTTCCAGACCTACATATCCCCAGAGACCTGGTGTATGAAATTCAGAGGTAAGTCTCCTGAG

601 AGAACGGGGGCTCAAAATGAAGCCAGCTGTCTTACCCTATCAGGACCTACGTGCTTCTTCTGTCTGCCCTTAAACACACAGCCAGAGGCTCAAA

701 TTGATTCTGGAGTCACAAAGGGGCTTAAACCCAGCCCCACTCTGAACCTCAGGAATGAGAAGATAGTATTGGAGGGGTTTCAGAGGAGAGGGCTC

801 TGCACATCTGTTGAGAATGGGGTCCAGGAGAGTGAATTTAGGCTGATCCCGAGGAAGGAATAGGCTCTTCAAGATCTAGCATCTCACAGGCCCA

901 CAGAGAAGTTCAGAGTTGGGCAGCCCTGGCTTACAGGCTTAAGAAGTGGAGGCAGTTTACCCAACCCAGCTGTGTGCATGCTGTCTCTCTCTGTCT

BsrGI (1088)

1001 CTGTCTGTCTCTCTGTCTCTGTCTCTGTGTGTGTGTGTGTGTGCTCACACAGTGTGTGTTTATCACACAAATGTTTATGTGTGTGATACATCATG

1101 TGTGAGGCCAGAGGTCAACCTCAGACACTGTTGACTTGGTTGTATGAGATAACATTTCCCTGGGACCTGGGATTTGCCAATTAGTGTGACCCAGGAA

1201 GCCTACTTATTTTATTCTCTCAGCACTGCAGTTACAAGTATGCACTGTCAAACAGGCCCTTTTTTTTTTTTTTTTCCAAACAGGCCTTTTGTATTCCG

1301 TCTGTGGCTAGAACTTGGTCTCCATGCTTACAGGCAAGCGATTTATGGACTAAGCTGTTTCTCGGCCCTCTCTGACCCATTTACCAGAAATGGGGT

1401 TTCCTTGATCAATGGTTAAGCCAGGCTGTTTCCAGGAAACCTTGAACCTGAGCTGAGCTTGTTGGGGTGAAGAGTTCTCTCCATAGCTGG

1501 GCTGGGCCAGCTCACCCCTCAGGCTATTCAATGGGGTGTGCCAGGAAGTCAAGGGCAGATCCAGTCCAGCCCTCCCTCAATAAAGGCCCTGACA

BspHI (1627)

1601 TCCCAGGAGCCAGCAGAAGCAGGCGCATGATTCTGGGCCCTGCATGCTGCTGCTGCTGCTGCTGGGCTGAGGCTACAGCTCTCCCTGGGCATC

1701 ATCCCAGTTGAGGAGGAGAACCAGGACTTCTGGAACCGCGAGGCAGCCAGGCCCTGGGTCGCCAAGAAGCTGCAGCCTGCACAGACAGCCGCCAAGA

25▶ I P V E E E N P D F W N R E A A E A L G A A K K L Q P A Q T A A K

BamHI (1855)

1801 ACCTCATCATCTTCTGGGCATGGGATGGGGTGTCTACGGTGACAGTCCAGGATCTAAAAGGGCAGAAAGGACAAACTGGGGCTGAGATACC

58▶ N L I I F L 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 E I P

1901 CCTGGCTATGGACGCCTCCCATATGTGGCTCTGTCCAAGACATAAATGTAGACAAACATGTGCCAGACAGTGGAGCCACAGCCAGGCCTACCTGTGC

91▶ L A M D 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 A Y L C

2001 GGGTCAAGGGCAACTCCAGACATTGGCTTGGTGCAGCCGCGCTTTAACCAAGTGCACACGACAGCGGCAAGGAGGTTCATCTCCGTTGATGATC

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

2101 GGGCAAGAAAGCAGGGAAGTCAAGTGGAGTGGTAACCACACAGAGTGCAGCAGCCTCGCCAGCGGCACTACGCCACACGGTGAACCGCAACTG

158▶ R A K K A G K S V G V V T T T R V Q H A S P A G T Y A H T V N R N W

2201 GTACTGGACGCCGACTGCCTCGCCGCGCAGGAGGGTGCCAGGACATCGCTACGAGCTCATCTCCAACATGGACATTGATGATGATGATGATGATGATGAT

191▶ Y S D A D V P A S A R Q E G G C Q D I A T Q L I S N M D I D V I L G

2301 GGAGGCGAAAGTACATGTTTCGCATGGGAACCCAGACCTGAGTACCAGATGACTACAGCCAGGTTGGGACAGGCTGGACGGGAAGAATCTGGTGC

225▶ G G R K Y M F R M G T P D P E Y P D D Y S Q G G T R L D G K N L V

2401 AGGAATGGCTGGCAAGCGCCAGGGTGCCTGGTATGTGTGAACCGCACTGAGCTCATGACGGCTTCCCTGGACCGGCTGTGTGACCCATCTCATGGTCT

258▶ Q E W 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 T H L M G L

2501 CTTGAGCCTGGAGACATGAAATACGAGATCCACCGACTCCACACTGGACCCCTCCCTGATGGAGATGACAGAGGCTCCCTGCGCCTGCTGAGCAGG

291▶ F 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 A L R L L S R

2601 AACCCCGCGGCTTCTCTCTTCCTCTTCTGAGGGTGGTGCATGCAGCAGGTACACGAAAGCAGGGCTTACCGGCACTGACTGAGACGATCATGTTCC

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

BbsI (2783)

2701 ACGACGCCATTGAGAGGGGGCCAGCTACACAGCAGGAGGACAGCCTGAGCCTGCTCACTGCCGACCACTCCCACGTCTTCTCCTCGGAGGCTACCC

358▶ D D 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 F S F G G Y P

2801 CCTGCGAGGGAGCTCATCTCGGGCTGGCCCTGGCAAGGCCGGGACAGGAAGCCTACAGGCTCTCCTATACGGAAACGGTCCAGGCTATGTGCTC

391▶ 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 G N G P G Y V L

2901 AAGGACGGCGCCCGCCGGATGTTACCGAGAGCAGAGCGGGAGCCCGAGTACGGCAGCAGTCAAGTCCCGCCTGGACGAAAGAGACCCACGAGCG

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

3001 AGGACGTGGCGGTGTTCCGCGCGGCCCGCAGGCGCACCTGGTTCACGGCGTGCAGGAGCAGACCTTCATAGCGCACGTATGGCCTTCGCCGCTGCT

458▶ E D V A V F A R 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 L

NheI (3193)

3101 GGAGCCCTACACCGCTGCACCTGGCGCCCCCGCGGACCACCGACCGCGCACCCCGGGCGGTCCCGGTCGCAAGCGTCTGGATTGAAGCTAGCTG

491▶ E P Y T A C D L A P P A G T T D A A H P G R S R S K R L D •

3201 GCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAAC TAGAATGCAGTGAIAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTA

3301 TTTGTAACCATTAAGCTGCAATAAACAAGTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCA

3401 AGTAAAACCTCTACAATGTGTATGAATTAATTCTAAAATACAGCATAGCAAAACTTTAACCCTCAAATCAAGCCTTACTTGAATCCTTTTCTGAGG

3501 GATGAATAAGGCATAGGCATCAGGGGCTGTGCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTTCATGGAGTTTAAGATATAGTGTATTTTCCCA
SspI (3672)
3601 AGGTTTGAAGCTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTATGTAATAATTCAGAAATAATTTAAATACATCATTG
3701 CAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCT
3801 TTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTATCCTCAGTCTGCTCCTCTGCCACAAAGTGACGCGAGTTGCCGGCCGGTCCGCGAGGG
125 • D Q E E A V F H V C N G A P D R L A
3901 CGAACTCCCGCCCCACGGCTGCTCGCCGATCTCGGTCTGCGCCGCGCCGGAGGCGTCCCGGAAGTTCGTGGACACGACCTCCGACCACTCGGCGTACAG
106 F E R 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 W E A Y L SgrAI
4001 CTCGTCCAGGCCGCGCACCCACCCAGGCCAGGGTGTGTCGGCACCACCTGGTCTGGACCGCGCTGATGAACAGGGTCACGTCGTCGGGACCACA
73 E D L G R V W V W A L T N D P V V Q D Q V A S I F L T V D D R V V
4101 CCGCGAAGTCGTCTCCACGAAGTCCCGGAGAAACCCGAGCCGGTCCGAGTCCGAGAACTCGACCGCTCCGGCGACGTCGCGCGCGGTGAGCACCGGAACGG
39 G A F D 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 L V P V A
4201 CACTGGTCAACTTGCCATGATGGCTCCTCCTGTCAGGAGAGAAAGAGAAGGTTAGTACAATTGCTATAGTGAGTTGTATTATACTATGCAGATAT
6 S T L K A M
4301 ACTATGCCAATGATTAATTGTCAAACTAGGGCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTT
4401 GCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAG
4501 GCGTTTTCCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCCTTTCCTCCTCGGGAAGCGTGGCGCTTT
4601 CTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCCAGCCGCTGCGCCTT
4701 ATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGC
4801 GGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAA
4901 GAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGA
5001 AGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCA