



EcoRI (19)

XbaI (15)

NotI (2) **NsiI (14)** **SdaI (29)** **SpeI (36)**

1 **GCGGCCGCTATGCATCTAGAATT**CCTGCAGGGCCACTAGTCTGCAAGCAGACCTGGCAGCATTGGGCTGGCCGCCCCCAGGGCTC

89 CTCTTCATGCCAGTGAATGACTCACCTTGGCACAGACAAATGTTGCGGGTGGGCACAGTGCCTGCTTCCCGCCGACCCAGCCCC

177 CCTCAAATGCCTTCCGAGAAGCCATTGAGTAGGGGCTTGCAATGCACCCAGCCTGACAGCCTGGCATCTTGGGATAAAAAGCAGCA

SgrAI (300)

265 CAGCCCCCTAGGGGCTGCCCTTGTGTGGCGCCACCGCGGTGGAGAACAAGGCTCTATTCAGCCTGTGCCAGGAAAGGGGATCA

353 GGGGATGCCAGGCATGGACAGTGGGTGGCAGGGGGGAGAGGAGGGCTGTCTGCTTCCAGAAAGTCCAAGGACACAAATGGGTGAGG

441 GGACTGGGCAGGGTTCTGACCCTGTGGGACCAGAGTGGAGGGCGTAGATGGACCTGAAGTCTCCAGGGACAACAGGGCCAGGTCTCA

529 GGCTCCTAGTTGGGCCAGTGGCTCCAGCGTTTCAAACCCATCCATCCCCAGAGGTTCTTCCCATCTCTCCAGGCTGATGTGTGGGA

XhoI (618)

617 ACTCGAGGAAATAATCTCCAGTGGGAGACGGAGGGGTGGCCAGGAAACGGGGCGCTGCAGGAATAAGACGAGCCAGCACAGCCAG

705 CTCATGCGTAACGGCTTTGTGGAGCTGTCAAGGCCTGGTCTCTGGGAGAGAGGCACAGGGAGGCCAGACAAGGAAGGGGTGACCTGGA

793 GGGACAGATCCAGGGGCTAAAGTCTGATAAGGCAAGAGAGTGCCGGCCCCCTTGGCCCTATCAGGACCTCCACTGCCACATAGAGG

881 CCATGATTGACCCTTAGACAAAGGGCTGGTGTCCAATCCAGCCCCAGCCCCAGAACTCCAGGAATGAATGGGCAGAGAGCAGGAA

969 TGTGGGACATCTGTGTTCAAGGAAGGACTCCAGGAGTCTGCTGGGAATGAGGCCTAGTAGGAAATGAGGTGGCCCTTGAGGGTACAG

1057 AACAGGTTCAATCTTCGCCAAATCCAGCACCTGCAGGCCTTACAGCTGAGTGAGATAATGCCTGGGTTATGAAATCAAAAAGTT

1145 GGAAAGCAGGTCAGAGGTCATCTGGTACAGCCCTTCTTCCCTTTTTTTTTTTTTTTTTTTTTTTTGTGAGACAAGGTCTCTCTCTGTTG

1233 CCCAGGCTGGAGTGGCGCAAACACAGCTCACTGCAGCCTCAACCTACTGGGCTCAAGCAATCCTCCAGCCTCAGCCTCCCAAAGTGCT

NsiI (1377)

1321 GGGATTACAAGCATGAGCCACCCCACTCAGCCCTTCTTCTTTTTTAATTGATGCATAATAATTGTAAGTATTCATCATGGTCCAAC

NcoI (1475)

1409 CAACCTTTCTTGACCCACCTTCTAGAGAGAGGGTCTCTTGATTAGCGGTGAGGGCCCCAGACCCATGGTCTGGCTCCAGGTACC

1497 ACCTGCCTCATGCAGAGTTGGCGTCCCAGGAAGCTCTGCCTCTGGGCACAGTACCTCAGTGGGGTGGGGAGCTCTCCCATAG

1585 CTGGGCTGCGGCCAACCCACCCCTCAGGCTATGCCAGGGGTGTTGCCAGGGCACCCGGGCATCGCCAGTCTAGCCACTCCTT

BspHI (1714)

1673 CATAAAGCCCTCGCATCCAGGAGCGAGCAGAGCCAGAGCATCATGATTCTGGGGCCCTGCATGCTGCTGCTGCTGCTGCTGGGC

▶ M I L G P C M L L L L L L L G

1761 CTGAGGCTACAGCTCTCCCTGGGCATCATCCCAGTTGAGGAGGAGAACCCGGACTTCTGGAACCGCAGGCAGCCGAGGCCCTGGGTG

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

1849 CCGCAAGAAGCTGCAGCCTGCACAGACAGCCGCAAGAACCTCATCATCTTCTGGGCGATGGGATGGGGGTGTCTACGGTGACAGC

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

NdeI (2009)

1937 TGCCAGGATCCTAAAAGGGCAGAAGAAGGACAAACTGGGGCCTGAGATACCCTGGCTATGGACCGCTTCCCATATGTGGCTCTGTCC

74▶ A R I L K G Q K K D K L G P E I P L A M D R F P Y V A L S

2025 AAGACATACAATGTAGACAAACATGTGCCAGACAGTGGAGCCACAGCCACGGCCTACTGTGCGGGTCAAGGGCAACTCCAGACCA

104▶ K T Y N V D K H V P D S G A T A T A Y L C G V K G N F Q T

2113 TTGGCTGAGTGCAGCCCGCTTAAACAGTGAACACGACACCGCGCAACGAGGTCATCTCCGTGATGAATCGGGCCAAGAAAGC

133▶ 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 R A K K A

2201 AGGGAAGTCAGTGGGAGTGGTAACCACCACACAGTGCAGCACGCTCGCCAGCCGGCACCTACGCCACACGGTGAACCGCAACTGG

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 V N R N W

2289 TACTCGGACGCCGACGTGCCTGCCTCGGCCGCCAGGAGGGGTGCCAGGACATCGCTACGCAGCTCATCTCCAACATGGACATTGATG
192 ▶ Y S D A D V P A S A R Q E G C Q D I A T Q L I S N M D I D
2377 TGATCCTGGGTGGAGGCCGAAAGTACATGTTTCGCATGGGAACCCAGACCCTGAGTACCCAGATGACTACAGCCAAGGTGGGACCAG
221 ▶ V I L G 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
2465 GCTGGACGGGAAGATCTGGTGCAGGAATGGTGGCAGGAGCCAGGGTGCCTGGTATGTGTGAACCGCACTGAGCTCATGACGGCT
250 ▶ L D G K N L V Q E W L A K R Q G A R Y V W N R T E L M Q A
2553 TCCCTGGACCCGTCTGTGACCCATCTCATGGTCTCTTTGAGCCTGGAGACATGAAATACGAGATCCACCGAGACTCCACACTGGACC
280 ▶ S L D P S V T H L M G L F E P G D M K Y E I H R D S T L D

SacII (2696)

2641 CCTCCCTGATGGAGATGACAGAGGCTGCCCTGCGCTGCTGAGCAGGAACCCCGCGGCTTCTTCTCTTCGTGGAGGGTGGTGCAT
309 ▶ P S L M E M T E A A L R L L S R N P R G F F L F V E G G R I
2729 CGACCACGGTCATCACGAAAGCAGGGCTTACCGGCACTGACTGAGACGATCATGTTTCGACGACGCCATTGAGAGGGCGGGCAGCTC
338 ▶ D H G H H E S R A Y R A L T E T I M F D D A I E R A G Q L
2817 ACCAGCGAGGAGACACGCTGAGCCTGCTACTGCCACACTCCACGCTTCTCCTTCGGAGGCTACCCCTGCGAGGGAGCTCCA
368 ▶ T S E E D T L S L V T A D H S H V F S F G G Y P L R G S S
2905 TCTTCGGGCTGGCCCTGGCAAGGCCCGGACAGGAAGGCTACACGGTCTCTATACGAAACGGTCCAGGCTATGTCTCAAGGA
397 ▶ 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 K D
2993 CGGCGCCCGCCGGATGTTACCGAGAGCGAGAGCGGGAGCCCGAGTATCGGCAGCAGTCAGCAGTCCCCTGGACGAAGAGACCCAC
426 ▶ 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
3081 GCAGGCGAGGACGTGGCGGTGTTGCGCGCGGCCCGCAGGCGCACCTGGTTCACGGCGTGCAGGAGCAGACCTTCATAGCGCAGTCA
456 ▶ A G 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
3169 TGGCCTTCGCGCCTGCCTGGAGCCCTACCCGCTGCGACCTGGCGCCCCCGCCGACACCACCGACCCGCGCACCCGGGGCGGTC
485 ▶ M A F A A C 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 (3280)

3257 CCGGTCCAAGCGTCTGGATTGAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTG
514 ▶ R S K R L D •

MfeI (342)

3345 AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAAT

3433 TGCATTCATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTA

3521 TTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATC
3609 AGGGGCTGTTGCCAATGTGCATTAGCTGTTTGACGCCTCACCTTCTTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGTTTGAA
3697 CTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAAATATTGAGAAATAATTTAAATACATCA
3785 TTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAG
3873 GGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTATCCTCAGTCCTGCTCCTGCCACAAAGTGCA

125 ▶ • D Q E E A V F H V

3961 CGCAGTTGCCGCGGGTGCAGGCGAACTCCCGCCCCACGGTCTGCTCGCCGATCTCGTTCATGGCCGCGCCGGAGGCGTCCCG
115 ▶ C N G A P D R L A F E R G W P Q E G I E T M A P G S A D R
4049 GAAGTTCGTGGACACGACCTCCGACACTCGGCGTACAGCTCGTCCAGGCCGCGCACCCACACCAGGCCAGGGTGTGTCCGGCACC
86 ▶ F N T S V V E S W E A Y L E D L G R V W V W A L T N D P V

SgrAI (4187)

4137 ACCTGGTCTGGACCGCGTGTGAACAGGGTACGTCGTCGCCGACACCCGGCGAAGTCTCCTCCACGAAGTCCCGGAGAACC
56 ▶ V Q D Q V A S I F L T V D D R V V G A F D D E V F D R S F G
4225 CGAGCCGGTCCGAGAACTCGACCGCTCCGGCGACGTCGCGCGCGGTGAGCACCAGGAAACGGCACTGGTCAACTTGGCCATGATGGC
27 ▶ L R D T W F E V A G A V D R A T L V P V A S T L K A M

MfeI (4350)

4313 TCCTCCTGTCAGGAGAGGAAAGAGAAGGTTAGTACAATTGTATAGTGTATTATACTATGCAGATATACTATGCCAATGA

4401 TTAATTGTCAAAGTAGGGCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTG

4489 CTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTAT

4577 AAAGATACCAGGCGTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCT

4665 CCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCTGCTCCAAGCTGGGCTGTGTG

4753 CACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAAGACACGACTTATCGCCAC

4841 TGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTA

4929 CACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAA

5017 ACCACCGCTGGTAGCGGTGGTTTTTTTGTTCGCAAGCAGCAGATTACGCCGAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTT

5105 CTACGGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCA
