



1 AATAAAATATCTTTATTTTCATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAAC
101 TAGCAAATAGGCTGTCCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAAGGATCTGCGATCGCTGAATTAGTTTCACTTCCAGTTTCAGTT
PvuI (164)
201 TCCAGTTTCACTTTCAGTTTCATTTTCCAGTTTCACTTTCCTGATATCTCTGACGAGcagcttgaataaaatgaatattagaagctgttagaataagagaaa
SdaI (248) EcoRV (243) SspI (271)
301 atgacagaggaAAACTGAAAGGgAGAAGTGAAGTGGgaaattcctctgaggcagaaaggaccatccctTATAAAtagcacaggccatgaaggaagat
HindIII (438)
399 catttctactgcagcctttgacagcctttgctcatcttAAGCTTCTGCTTCTCCCTCTGTGAGTTTgtaagtcactgactgtctatgctgggaa
XbaI (565)
499 aggggtggcaggagatggggcagtcaggaaaagtggcactatgaaccTGCAGCCCTAGGAATGCATCTAGAcattgtactaaccttcttctctttcc
SphI (648)
599 tctcctgacagGTTGGTGTACAGTAGCTCCACCATGGTTCTGGGCCCTGCATGTGCTGTGCTGTGCTGGGCTGAGGCTACAGCTCTCCCTG
1 M V L G P C M L L L L L L L L L L G L R L Q L S L
699 GGCATCATCCAGTTGAGGAGGAGAACCCGGACTTCTGGAACCCGAGGCGAGCCGAGGCCCTGGGTGCCGCAAGAAGCTGCAGCTGCACAGACAGCCG
23 G I 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
PvuII (849) BamHI (858)
799 CCAAGAACCTCATCATCTTCTGGGCGATGGGATGGGGGTGTCTACGGTGACAGCTGCCAGGATCTAAAAGGGCAGAAGAAGGACAACTGGGGCTGA
56 A K 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
NdeI (924)
899 GATACCCCTGGCTATGGACCGCTTCCCATATGTGGCTCTGTCCAAGACATACAATGTAGACAAACATGTGCCAGACAGTGGAGCCACAGCCACGGCTAC
89 I P 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
999 CTGTGGGGGTCAAGGGCAACTTCCAGACCATTTGGCTTGTGAGTGCAGCCGCTTTAACCAAGTGAACACGACACGCGGCAACGAGGTCATCTCCGTGA
123 L C 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
BstEII (1135)
1099 TGAATCGGGCCAAGAAAGCAGGGAAGTCAAGTGGAGTGGTAACCACACAGTGCAGCAGCCCTCGCCAGCCGGCACCTACGCCACACGGTGAACCG
156 M N 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
1199 CAACTGGTACTCGGACGCCAGCTGCCCTCGGCCCGCAGGAGGGTGCAGGACATCGCTACGAGCTCATCTCCAACATGGACATTGATGTGATC
189 N W 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 V I
1299 CTGGTGGAGGCCAAAATACATGTTTCGCATGGGAACCCAGACCCCTGAGTACCCAGATGACTACAGCCAAGGTGGGACAGGCTGGACGGGAAGATC
223 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 L D G K N
SacI (1454)
1399 TGGTGCAGGAATGGCTGGCGAAGCCAGGGTGGCCGGTATGTGTGAAACCGCACTGAGCTCATGCAGGCTTCCCTGGACCCGTGTGACCCATCTCAT
256 L V 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
1499 GGGTCTCTTTGAGCCTGGAGACATGAAATACGAGATCCACCAGACTCCACTGGACCCCTCCCTGATGGAGATGACAGAGGCTGCCCTGCGCTGTG
289 G L 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
SacII (1609) PshAI (1646)
1599 AGCAGGAACCCCGCGGCTTCTTCTCTTCTGTTGGGGTGGTGCATCGACCCGGTGCATCACGAAAGCAGGGCTTACCGGGCACTGACTGAGACGATCA
323 S R N P R G F F L V E G F R I D H G H H E S R A Y R A L T E T I
1699 TGTTCCAGCAGCCATTGAGAGGGCGGGCCAGCTCACCAGCAGGAGGACAGCTGAGCCTCGTCACTGCCACCACTCCACGCTTCTCTCTCGGAGG
356 M F 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
SacI (1813) StuI (1857)
1799 CTACCCCTGCGAGGGAGCTCCATCTTCCGGCTGGCCCTGGCAAGCCCGGGACAGGAAGGCCTACACGGTCTCTATACGAAACGGTCCAGGCTAT
389 Y P 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
BsrBI (1939)
1899 GTGCTCAAGGACGGCGCCGGCCGGATGTTACCAGAGCGAGAGCGGGAGCCCGGAGTATCGGCAGCAGTACGAGTCCCTGGACGAAGAGACCCACG
423 V L 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
BssHII (2021)
1999 CAGGCGAGGACGTGGCGGTGTTCCGCGCGGGCCCGCAGGCGCACCTGTTTACGGCGTGCAGGAGCAGACCTTATAGCGCACGTATGGCCTTCCGGCG
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 M A F A A
NheI (2196)
2099 CTGCCTGGAGCCCTACACCGCTGCGACCTGGCGCCCGCGGCACCCAGCGCCGCGCACCCGGGGCGGTCCCGGTCCAAGCGTCTGGATTGAAGC
489 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 R S K R L D •
Ball (2202)
2199 TAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATT
HpaI (2334)
2299 GCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACAAATGCAATTCATTTATGTTTCAGGTTTACGGGGAGGTGGGGAGGTTTTTT
EcoRI (2430)
2399 AAAGCAAGTAAACCTCTACAATGTGGTATGGAATCTAAAAATACAGCATAGCAAAAATTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGA
2499 GGGATGAATAAGGCATAGGCATCAGGGGCTGTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTTAAAGATATAGTGTATTTTCC
SspI (2669) SmaI (2683)
2599 CAAGGTTTGAAGTACTTCTTCTTATGTTTAAATGCATGACCTCCACATTCCTTTTATGATAAATATTCAGAAATAATTTAAATACATCAT
2699 TGCAATGAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAAC
ApaLI (2868)
2799 CTTTAATAGAAATTTGACAGCAAGAAAGCGAGCTTCTAGCTTATCTCTCAGTCTGCTCTGCCACAAAGTGCACGAGTTGCCGGCCGGTCCGCGAG
1274 G • D Q E E A V F H V C N G A P D R L
2899 GCGAAGTCCCGCCCGCCAGGCTGCTCGCGATCTCGGTATGCGCCGCGGAGGCGTCCCGGAAGTTCGTGGACACGACCTCCGACCACTCGCGTAC
1074 A 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
2999 AGCTCGTCCAGGCGCGCACCCACCCAGGCGAGGTTGTCCGGCACCTGGTCTGGACCGCTGATGAACAGGTCACGTCGTCGGGACCA
734 L 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
BssHII (3177)
SgrAI (3098) BsrBI (3161) AatII (3171)
3099 CACCGCGAAGTCTCTCCACGAAGTCCCGGGAACCCGAGCCGGTCCGTTCCAGAAGTCCGCGCTCCGCGCAGCTCGCGCGCGGTGAGCACCGGAAC
40 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
SfiI (3213)
3199 GGCAGTGGTCAACTTGGCCATGATGGCCCTCTATAGTGTGCTGATTACTATGCGGATATACTATGCCGATGATTAATGTCAACTACTGTTGTAG
74 A S T L K A M
AseI (3273)
3299 GCGCGGTCACAGCTTGACTGTAAAGCGGCGAGAACGAAACAAAGACGTAGAGTTGAGCAAGCAGGGTCAAGCAAGCGTGGAGAGCCGGCT

3399 GAGTCTAGGTAGGCTCCAAGGGAGCGCCGGACAAAGGCCGGTCTCGACCTGAGCTTTAAACTTACCTAGACGGCGGACGCAGTTCAGGAGGCACCACAG
PvuII (3593)
3499 GCGGGAGGCGGCAGAACGCGACTCAACCGGCGTGGATGGCGGCCCTCAGGTAGGGCGGGCGCGTGAAGGAGAGATGCGAGCCCCTCGAAGCTTCAGCT
Bsu36I (3540) HindIII (3587)
3599 GTGTTCTGGCGCAAACCCGTTGCGAAAAAGAACGTTACGGCGACTACTGCACCTTATATACGGTTCTCCCCACCCCTCGGGAAAAAGCGGAGCCAGTA
Psp1406I (3629)
3699 CACGACATCACTTTCCAGTTTACCCCGCGCCACCTTCTCTAGGCACCGTTCAATTGCCGACCCCTCCCCCAACTTCTCGGGGACTGTGGGCGATGTG
AgeI (3743)
3799 CGCTCTGCCACTGACACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTG
3899 ACGAGCATCACAAAAATCGACGCTCAAGTCAGAGTGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCCTGGAAGCTCCCTCGTGCCTC
3999 TCCGTTCGACCCCTGCCGCTTACCGGATACCTGTCCGCCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCC
ApaLI (4128)
4099 GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGG
4199 TAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAA
4299 CTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACC
4399 ACCGCTGGTAGCGGTGGTTTTTTTGGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGCTGACG
SwaI (4553)
4499 CTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTAAATCAGCGGCCGC
PaeI (4544) NotI (4563)