



125

EcoRI (23)

NotI (2) XbaI (19) SdaI (38) SpeI (45)

1 CCGCGCCGCTCGACGATATCTAGAAATTCGGATCCTGCAGGGCCACTAGTGGAGCCGAGAGTAATTCATACAAAAGGAGGGATCGCCTTCCGAAGGGGAG
101 AGCCCAAGGACCGTCCCTAAATTCACAGACCCAAATCCCTGTAGCCGCCACGACAGCGGAGGAGCATGCGCCAGGGCTGAGCGGGGTAGATCA
201 GAGCACACAAGCTCACAGTCCCCGGGGTGGGGGAGGGGCGCTGAGCGGGGCCAGGGAGCTGGCGGGGCAAACTGGGAAAGTGGTGTCTGTGTC
301 TGGCTCCGCCCTTCTCCGAGGGTGGGGGAGAACGGTATATAAAGTGGGTAGTCGCCCTTGGACGTTCTTTTTCGAACGGGTTTGGCTCAGAACGCGAG

HindIII (403)

401 TGAAGCTTCGAGGGGCTCGCATCTCTCTTACGCGCCCGCCCTACTGAGGCCCATCCACGCCGTTGAGTCGCGTTCTGCCGCTCCCGCTG
501 TGGTGCCTCTGAAGTGCCTCCGCGCTAGTAAAGTTAAAGCTCAGGTCGAGACCGGGCTTTGTCCGGGCTCCCTTGGAGCTACCTAGACTCAGC

NotI (688)

601 CCGGCTCCACGCTTGGCTGACCCCTGCTCAACTCTACGCTTTGTTTCTGTTTCTGTTCTGCGCCGTTACAGATCCAAAGCCACCATGGTCTGGG
701 GCCCTGCATGCTGCTGCTGCTGCTGCTGCTGGCCTGAGGCTACAGCTCTCCCTGGGCATCATCCAGTTGAGGAGGAGAACCCGGACTTCTGGAAACCGC
801 GAGGAGCCGAGGCGCTGGTGGCCGCAAGAAGCTGCAGCCTGCACAGACAGCCGCAAGAACCTCATCATCTTCTGGGCGATGGGATGGGGGTGTCTA
38 G lu laA laG luA laLeuG lyA laA laLysLysLeuG lnP roA laG lnTh rA laA laLysAsnLeu l le l lePheLeuG lyAspG lyMe tG lyVa lSe rT

NdeI (983)

901 CCGTGACAGCTGCCAGGATCTAAAAGGGCAGAAGAAGGACAACCTGGGGCTGAGATACCCCTGGCTATGGACCGCTTCCCATATGTGGCTCTGTCCAA
71 hrVa lTh rA laA laArg l leLeuLysG lyG lnLysLysAspLysLeuG lyP roG lu l leP roLeuA laMe tAspArgPheP roTy rVa lA laLeuSe rLy
1001 GACATACAAATGTAGACAAACATGTGCCAGACAGTGGAGCCACAGCCAGGCTACCTGTGCGGGTCAAGGGCAACTTCCAGACCATTTGGCTTGGTGTGCA
104 sTh rTy rAsnVa lAspLysH isVa lP roAspSe rG lyA laTh rA laTh rA laTy rLeuCysG lyVa lLysG lyAsnPheG lnTh r l leG lyLeuSe rA la
1101 GCCGCCCGCTTAACCAAGTCAACACGACACCGCCGCAACGAGGTATCTCCGTGATGAATCGGCCAAGAAAGCAGGGAAGTCAGTGGGAGTGGTAACCA
138 A laA laArgPheAsnG lnCysAsnTh rTh rArgG lyAsnG luVa l l leSe rVa l Me tAsnArgA laLysLysA laG lyLysSe rVa lG lyVa lMa lTh rT
1201 CCACACGAGTGCAGCAGCCTCCGACCGCCACCTACGCCACACCGTGAACCGCAACTGGTACTCGGACCGCAGCTGCCTGCCTCGGCCCGCCAGGA
171 hrTh rArGva lG lnH isA laSe rP roA laG lyTh rTy rA laH isTh rVa lAsnArgAsnT rpTy rSe rAspA laAspVa lP roA laSe rA laArG lnG l
1301 GGGGTGCCAGGACATCGCTACGACGCTCATCTCAAACATGGACATTGATGTATCCTGGTGGAGGCCGAAAGTACATGTTTCGCATGGGAACCCAGAG
204 uG lyCysG lnAsp l leA laTh r lnLeu l leSe rAsnMe tAsp l leAspVa l l leLeuG lyG lyA rG LysTy rMe tPheArgMe tG lyTh rP roAsp
1401 CCTGAGTACCCAGATGACTACAGCCAAAGTGGGACCGAGCTGGACGGGAAGAATCTGGTGCAGGAATGGCTGGCGAAGCCGAGGCTCCCGGATGTGT
238 P roG luTy rP roAspAspTy rSe rG lnG lyG lyTh rArGLeuAspG lyLysAsnLeuVa lG lnG luT rpLeuA laLysArgG lnG lyA laArG ty rVa lT
1501 GGAACCGCACTGAGCTCATGCGAGGCTTCCCTGACCCGCTCTGTGACCCATCTCATGGGTCTCTTTGAGCCTGGAGACATGAAATACGAGATCCACCAGAG
271 rpAsnArgTh rG luLeuMe tG lnA laSe rLeuAspP roSe rVa lTh rH isLeuMe tG lyLeuPheG luP roG lyAspMe tLysTy rG lu l leH isArGAs

SacII (1670)

1601 CTCACACTGGACCCTCCCTGATGGAGATGACAGAGGCTGCCCTGCGCTGCTGAGCAGGAACCCCGCGCTTCTTCTCTTCTGAGGGGTGGTCCG
304 pSe rTh rLeuAspP roSe rLeuMe tG luMe tTh r luA laA laLeuArGLeuLeuSe rArGAsnP roArG lyPhePheLeuPheVa lG luG lyG lyArG
1701 ATCGACCACGGTATCACGAAAGCAGGGCTTACCGGGCACTGACTGAGACGATCATGTTGACGACGCCATTGAGAGGGCGGGCAGCTACACAGCGAGG
338 l leAspH isG lyH isH isG luSe rArG laTy rArG laLeuTh rG luTh r l leMe tPheAspAspA la l leG luArG laG lyG lnLeuTh rSe rG luG
1801 AGGACACGCTGAGCCTGCTACTGCGGACCACTCCACGCTTCTCTTCCGGAGGCTACCCCTGCGAGGGAGCTCCATCTTCCGGCTGGCCCTGGCAA
371 luAspTh rLeuSe rLeuVa lTh rA laAspH isSe rH isVa lPheSe rPheG lyG lyTy rP roLeuArG lySe rSe r l lePheG lyLeuA laP roG lyL
1901 GGCCCGGACAGGAAGGCTACACGGTCTCTATACGAAACGGTCCAGGCTATGTCTCAAGGACGGCCCGCCGGATGTTACCGAGAGCGAGAGC
404 sA laArGAspArGlyLysA laTy rTh rVa lLeuLeuTy rG lyAsnG lyP roG lyTy rVa lLeuLysAspG lyA laArGP roAspVa lTh rG luSe rG luSe r
2001 GGGAGCCCCGAGTATCGGACGAGTGCAGAGTCCCTGGACGAAGACCCACGACGGCAGGAGCTGGCGGTGTTCCGCGCGGGCCCGCAGGCGCAC
438 G lySe rP roG luTy rArG lnG lnSe rA laVa lP roLeuAspG luG luTh rH isA laG lyG luAspVa lA laVa lPheA laArG lyP roG lnA laH isL
2101 TGGTTCACGGCTGCAGGAGCAGACCTTCATAGCGCAGTCTGGCTTCCGCCCTGCTGAGCCCTACACCGCTGCGACCTGGGACCTGGCGCCCGCCCGG
471 euVa lH isG lyVa lG lnG luG lnTh rPhe l leA laH isVa l Me tA laPheA laA laCysLeuG luP roTy rTh rA laCysAspLeuA laP roP roA laG l

NheI (2254)

2201 CACCACGACGCCCGCACCCGGGGGCTCCCGTCCAAGCGTCTGGATTGAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAAC
504 yTh rTh rAspA laA laH isP roG lyArGSe rArGSe rLysArGLeuAsp
2301 CACAACAGAAATGCAAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACATTATAAGCTGCAATAAACAAGTTAAACAAC

MfeI (2403)

2401 AACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTAATTCTAA

2501 AATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGT
2601 GCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTCTTTCATTTCTTTATGTTTAAATG
2701 CACTGACCTCCACATTCCTCTTTTAGTAAATATTCAGAAATAATTTAAATACATCAATTGCAATGAAATAAATGTTTTTATTAGGCAGAATCCAGAT
2801 GCTCAAGGCCCTTATAATATCCCCAGTTTAGTAGTTGACTTAGGGAACAAAGGAACCTTTAATAGAAATTTGACAGCAAGAAGCGAGCTCTAGCT
2901 TATCTCAGTCTGCTCCTGCCACAAAGTGCACGAGTTGCCGGCCGGTGCAGGCGAAGTCTCCGCCCGCCAGGCTGCTCGCCGATCTCGGTC
125 AspG lnG luG luA laVa lPheH isVa lCysAsnG lyA laP roAspArGLeuA laPheG luArG lyT rpP roG lnG luG ly l leG luTh rMe
3001 TGGCCGGCCGGAGGCGTCCCGAAGTTCTGGACACGACTCCGACCACTCGGCTGACAGCTCGTCCAGGCGCGCACCCACACCCAGGCGAGGTTGTT
93 tA laP roG lySe rA laAspArGpheAsnTh rSe rVa lVa lG luSe rT rpG luA laTy rLeuG luAspLeuG lyArGva lT rpVa lT rpA laLeuTh rAsn

SgrAI (3161)

3101 GTCCGGCACCACTGGTCTGGACCGCGCTGATGAACAGGGTACAGTCTGCCGGACCAACCGGCGAAGTCTCCACGAAGTCCCGGGAGAACCCG
60 AspP roVa lVa lG lnAspG lnVa lA laSe r l lePheLeuTh rVa lAspAspArGva lVa lG lyA laPheAspAspG luVa lPheAspArGSe rPheG lyL
3201 AGCCGGTGGTCCGAACTGACCGCTCCGGCAGCTCGCGCGGGTGAACCGGAAACGGCACTGGTCAACTTGGCCATGATGGCTCTCTGTGAGGA
26 euArgAspTh r rpPheG luVa lA laG lyA laVa lAspArG laTh rLeuVa lP roVa lA laSe rTh rLeuLysA laMe t

MfeI (3324)

3301 GAGGAAAGAGAAGGTTAGTACAATTGCTATAGTGTATTATACTATGAGATATACTATGCAATGATTAATTGTCAAAGTGGGCTGAGGTT
3401 TAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCA
3501 TCACAAAATCGACGCTCAAGTCAAGGTGGCGAAACCCGACAGGACTATAAGATACAGGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCTGTT

3601 CCGACCCTGCCGCTTACCGGATACCTGTCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGG
3701 TCGTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACA
3801 CGACTTATGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGC
3901 TACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAACAACACCACCGCTG
4001 GTAGCGGTGTTTTTTTGTTCGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTG
4101 GAACGAAAACACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCA