



100

EagI (1)
NotI (-1)
1 GCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGGTTTTTGTGTAATGTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACA

PvuII (172)
SgfI (171)
106 AACTAGCAAATAGGCTGCCCCAGTGCAGGTGCCAGAACATTTCTATCGAAGGATCTGCGATCGCTGAATTAGTTTCACCTTCCAGTTTCAGTTTC

PstI (257)
SdaI (256)
EcoRV (251) SspI (279)
211 CAGTTTCATTTCCAGTTTCATTTCCAGTTTCATTTCTGATATCCTGCAGGagcttgaataaaatgaatattagaagctgttagaataagagaaatgacag

PstI (414)
316 aggaAAACTGAAAGGgAGAAGTGAAGTggaaattcctctgaggcagaaggaccatccctTATAAAtagcacaggccatgaaggaagatcattctcactgc

HindIII (446) BsrGI (482) NcoI (498)
419 agcctttgacagcctttgctcattcttAGCTTCTGCTTCTCCCTCTGTGAGTTTGGTGGTGTACAGTAGCTTCCACCATGGAAATCAAGGTGCTGTTTGC

BglIII (613)
524 CCTCATCTGTATTGCTGTTGCTGAGGCAAAACCCACTGAAATCAATGAAGACCTCAATATAGCTGCTGTGGCCTCCAACCTTGGCCACCACAGATCTTGAGACTGA

81aLeuI l eCysI l eAl aVaI Al aGl uAl aLysProThrGl uI l eAsnGl uAspLeuAsnI l eAl aAl aVaI Al aSerAsnPheAl aThr ThrAspLeuGl uThrAs

629 CTTGTTCCACCACTGGGAGACCATGAATGTGATTAGCACTGACACAGCAGGTGAACACAGATGCTGACAGGGCAAGCTGCCTGGCAAAAACCTCCCCCAGA

43pLeuPheThrAsnTrpGl uThr Me tAsnVal I l eSer ThrAspThr Gl uGl nVal lAsnThrAspAl aAspArgGl yLysLeuP roGl yLysLysLeuP roP roAs

Bsu36I (736)
734 TGTCTGAGGGAGCTGGAGGCCAATGCCAGAAAGGCTGGTGCACAAGAGGCTGCCTCATTGGCTCTCCACATTAAGTGACCCCTAAGATGAAGAAATTTAT

78pVal lLeuArgGl uLeuGl uAl aAsnAl aArgArgAl aGl yCysThr ArgGl yCysLeuI l eCysLeuSer Hi sI l eLysCysThr ProLysMetLysLysPheI l

EcoRV (908)
839 CCCTGGCAGGTGCCACACTTATGAAGGTGAAAAGGAGTCTGCTCAGGAGGGATTGGAGAGCAATTTGTGATATCCAGAGATTCTGGCTTCAAGGATAAGGA

113pEProGl yArgCysHi sThr TyrGl uGl yGl uLysGl uSer Al aGl nGl yGl yI l eGl yGl uAl aI l eVal lAspI l eP roGl uI l eP roGl yPheLysAspLysGl

EcoO109I (1005)
944 GCCACTGGACAGTTTATTGCTCAAGTGGACCTCTGTGCTGATTGCACCACTGGCTGTCTGAAGGGCCCTGGCCAAATGCCAGTGTCTGACCTCTGAAGAAGTG

148pUProLeuAspGl nPheI l eAl aGl nVal lAspLeuCysAl aAspCysThr Thr Gl yCysLeuLysGl yLeuAl aAsnVal lGl nCysSerAspLeuLeuLysLysTr

Ball (1138)
1049 GCTTCCCAGAGGTGTACCATTTTGGCAGCAAGATTCAAGGGTCTGGCTGGGGACAGATGATAGCTAGCTGGCCAGACATGATA

183pLeuP roGl nArgCysThr Thr PheAl aSerLysI l eGl nGl yArgVal lAspLysI l eLysGl yLeuAl aGl yAspArg•••

1154 AGATACATTGATGAGTTTGGACAAACCACTAGAAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTAAGC

HpaI (1270)
1259 TGCAATAAACAAAGTTAACAAACAATTCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGT

EcoRI (1366)
1364 ATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTG

1469 CCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGGTTTGAAC TAGCTCTTCATTTCTTTATGTTTTAAA

SspI (1605) SwaI (1619)
1574 TGCCTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAATGTTTTTATTAGGCAGAATCCAGATGCT

EcoO109I (1680)
1679 CAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTATCCTCA

1274•••Gl y•••

DraIII (1798) EagI (1818)
1784 GTCCTGCTCCTGCCACAAAGTGCACGAGTTGCCGGCCGGTGCAGGCGAATCCCGCCCCACGGCTGCTGCCGATCTCGGTATGCGCCGGCCCGGA

124AspGl nGl uGl uAl aVal lPheHi sVal lCysAsnGl yAl aP roAspArgLeuAl aPheGl uArgGl yTrpP roGl nGl uGl yI l eGl uThr Me tAl aP roGl ySer

1889 GCGTCCCGGAAGTTCGTGGACACGACCTCCGACCACTCGGCTACAGCTGCTCCAGGCGCGCACCCACCCAGCCAGGGTGTGTCGGCACCACCTGGTC

89Al aAspArgPheAsnThr Ser Val lVal lGl uSer TrpGl uAl aTyrLeuGl uAspLeuGl yArgVal lTrpVal lTrpAl aLeuThrAsnAspP roVal lVal lGl nAsp

SgrAI (2034) SmaI (2061) BsrBI 2097
1994 CTGGACCGCTGATGAACAGGGTACGCTGCTCCGACACACCGGCGAAGTCTCCTCCACGAAGTCCCGGGAGAACCAGCCGCTGCTCCAGAACTCGAC

54Gl nVal lAl aSerI l ePheLeuThr Val lAspAspArgVal lVal lGl yAl aPheAspAspGl uVal lPheAspArgSer PheGl yLeuArgAspThr TrpPheGl uVal l

BssHII (2113) SfiI (2149)
2099 CGCTCCGGGACGTCGCGCGGCTGAGCACCGGAACGGCACTGGTCAACTTGGCCATGATGGCCCTCTATAGTAGTCTATTATACTATGCGGATATACTATG

19Al aGl yAl aVal lAspArgAl aThr LeuVal lP roVal lAl aSer Thr LeuLysAl aMet

AatII (2107) Ball (2148)
2204 CCGATGATTAATGTCAACTACTGTTTGTAGGCGCCGTACAGCTTGATCTGTAACGGCGCAGAACGAAACAAAGACGTAGAGTTGAGCAAGCAGG

AseI (2209) KasI (2233)
2309 GTCAGGCAAAGCGTGGAGAGCCGGCTGAGTCTAGGTAGGCTCAAGGGAGCGCCGACAAAGGCCCGGTCTGACCTGAGCTTTAAACTTACCTAGACGGCGGAC

EcoNI (2476) Bsu36I (2476)
2414 GCAGTTCAGGAGGCCACCAGCGGGAGGGCGGACGCAACCGACTCAACCGCGTGGATGCCGGCCCTCAGGTAGGGCGGGCGCGTGAAGGAGAGATGCGAGCC

PvuII (2529) HindIII (2523) Psp1406I (2565)
2519 CTTGGAAGCTTCAAGCTGTGTTCTGGCGGCAAAACCCGTTGCGAAAAGAACGTTCAAGGCGACTACTGCACTTATATACGGTTCTCCCCACCTCGGGAAAAAGG

EcoNI (2667) AgeI (2679)
2624 CGGAGCCAGTACACGACATCACTTTCCAGTTTACCCCGGCCACTTCTTAGGCACCGGTTCAATTGCCGACCCCTCCCCCAACTTCTCGGGACTGTGGCC

BspLU11I (2750)
2729 GATGTGCGCTCTGCCACTGACACATGTGAGCAAAAGGCCAGAAAAGGCCAGAACCGTAAAAAGCCGCTTGTGCGGTTTTTCCATAGGCTCCGCCCTCT

2834 GACGAGCATCAAAAAATCGACGCTCAAGTCAAGGTGGCGAAAACCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCCT

2939 GTTCCGACCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTC

3044 GTTCGCTCAAGCTGGGCTGTGTCACGAACCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCAACCCGGTAAGACACGACTTA

3149 TCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGA

3254 ACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCACCGCTGGTAGCGGTGGTTTTTTT

3359 GTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGG

Swal (3489)

PacI (3480)

3464 ATTTTGGTCATGGCTAGTTAATTAACATTTAAATCA