



100

PvuI (11) EcoNI (101)
 SgfI (11) MfeI (83) AgeI (90)
 1 GGATCTGCATCGCTCCGGTGCCGTGCGTCCAGTGGCAGAGCGCACATGCCACAGTCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACCGGTGCCTA
 101 GAGAAGGTGGCGGGGTAAGTGGAAAGTGTGCTGTACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC
 HindIII (246) Bsu36I (293)
 PvuII (242) EcoNI (292)
 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC
 301 GCCATCCACGCGGTTGAGTTCGCGTTTCTGCCGCCCTCCCGCCTGTGGTGCTCCTGAAGTGCCTCCGCTCTAGGTAAGTTTAAAGTCAAGTTCGAGACC
 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCAGCCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT
 KasI (536) AseI (561)
 501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGGCGCCTACAACAGTAGTTGACAATTAATCATCGGCATAGTATATCGGCATAGTATAATACGAC
 NcoI (618) AatII (666)
 SfiI (612)MscI (623) BssHIII (656) BsrBI (671)
 601 TCACTATAGGAGGCCACCATGGCCAAGTTGACCAAGTCCGGTTCGGTGTCCCGCGCGGACGTCCGCGGAGCGGTGAGTTCTGGACCGACCGGCTC
 SmaI (710) SgrAI (734)
 701 GGGTTCTCCGGGACTTCGTGGAGGACGACTTCGCGGTTGTGGTCCGGGACGCTGACCCTGTTTCATCAGCGCGGTCCAGGACCAGGTGGTCCGGACA
 28▶ Gl yPheSer ArgAspPheVal I Gl uAspAspPheAl aGl yVal Val I ArgAspAspVal Thr LeuPheI l eSer Al aVal Gl nAspGl nVal Val ProAspA
 801 ACACCTGGCCTGGGTGTGGTGCAGCGGCTGGACGAGCTGTACCGCAGTGGTTCGAGGTCGTGTCACGAACCTCCGGGACGCGCTCCGGGCGGCCAT
 61▶ snThr LeuAl aTrpVal I TrpVal I ArgGl yLeuAspGl uLeuTyrAl aGl uTrpSer Gl uVal Val Ser ThrAsnPheArgAspAl aSer Gl yProAl aMe
 EagI (951) DraIII (973)
 901 GACCAGATCGGCGAGCAGCGTGGGGCGGGAGTTCCGCTGCGCGACCCGGCCGCAACTGCGTGCCTTCTGTCGCGGAGGAGCAGGACTGACCGACC
 94▶ tThr Gl ul l eGl yGl uGl nProTrpGl yArgGl uPheAl aLeuArgAspP roAl aGl yAsnCysVal Hi sPheVal I Al aGl uGl uGl nAsp●●●
 StuI (1043) ClaI (1057) NheI (1068)
 RsrII (1016) EcoO109I (1035) BglIII (1050) BsrGI (1061)
 1001 CCGACCAACACCGCGGTCCGACGGCGCCACGGGTCCAGGCTCGAGATCTATCGATTGTACAGCTAGCTGACATGATAAGATACATTGATGAGT
 1101 TTGGACAAACCACAACACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTA
 HpaI (1233) MfeI (1242)
 1201 TTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGGTTTTTAAAGCA
 PacI (1343) Ppu10I (1370)
 SmaI (1333) NsiI (1375)
 1301 AGTAAAACCTCTACAATGTGGTAGATCCATTTAAATGTTAATTAACCCGCTTCGGCGGGTTTTTTATGATGTGAGCAAAAGGCCAGCAAAGGC
 1401 CAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAAC
 1501 CCGACAGGACTATAAAGATACCAGGCGTTTCCCTGGAAGTCCCTCGTGGCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTTC
 1601 TCCCTTCGGGAAGCGTGGCGTTTTCTCAT AGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCC
 AlwNI (1789)
 1701 CGTTCAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGG
 1801 ATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGC
 1901 TGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGAAGCAGCAGATTAC
 2001 GCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACTCACGTTAAGGGATTTTGGTCAATGAGA
 2101 TTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAATAAATGAAGTTTTAAATCAATCTAAAGTATATAGTAACTTGGTCTGACAGTTACCAAT
 287▶ ●●●TrpHi
 2201 GCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTGCTTCATCCATAGTTGCCTGACTCCCGTCTGTAGATAACTACGATACGGAGGGCTT
 284▶ sLysI l eLeuSer Al aGl yI l eGl uAl al l eGl nArgAsnArgGl uAspMetThr Al aGl nSer Gl yThr Thr TyrI l eVal Val I l eArgSer ProLys
 2301 ACCATCTGGCCCCAGTGTGCAATGATACCGGAGACCCAGCTCACCAGTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGCAGA
 251▶ Gl yAspP roGl yLeuAl aAl al l eI l eGl yArgSer Gl yArgGl uGl yAl aGl ySer LysAspAl al l ePheTrpGl yAl aP roLeuAl aSer ArgLeuL
 AseI (2438) FspI (2488)
 2401 AGTGGTCTGCAACTTTATCCGCTCCATCCAGTCTATTAATTTGCGGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCACAACGTTGTTG
 217▶ euP roGl yAl aVal LysAspAl aGl uMe tTrpAspI l eLeuGl nGl nArgSer Al aLeuThr LeuLeuGl uGl yThr LeuLeuLysArgLeuThr Thr Al
 2501 CCATTGCTACAGGCATCGTGGTGCACGCTCGCTTTGGTATGGCTTATTGAGTCCGCTCCCAACGATCAAGGCGAGTTACATGATCCCCATGTT
 184▶ aMe tAl aVal P roMetThr ThrAspArgGl uAspAsnP roI l eAl aGl uAsnLeuGl uP roGl uTrpArgAspLeuArgThr Val Hi sAspGl yMe tAsn
 PvuI (2636)
 2601 GTGCAAAAAGCGGTTAGCTCCTTCGGTCCGATCGTTGTCAGAAGTAAGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCT
 151▶ Hi sLeuPheAl aThr LeuGl uLysP roGl yGl yI l eThr Thr LeuLeuLeuAsnAl aAl aThrAsnAspSer Me tThr I l eAl aAl aSer CysLeuGl uA
 ScaI (2746)
 2701 CTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGGTACTCAACCAAGTATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGC
 117▶ r oVal Thr Me tGl vAspThr LeuHi sLvsGl uThr Val P roSer TrvGl uVal LeuAspAsnGl nSer TrvHi sI l eAraAraGl vLeuGl nGl uGl nGl

XmnI (2860)

2801 CGGCGTCAATACGGGATAATACCGGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCAAGGATCTTACC
84 yAl aAspl leArgSer LeuValAl aGlyCysLeuLeuVal LysPheThr Ser MetMetProPheArgGluGluProArgPheSer GluLeuI leLysGly

2901 GCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGACCCAAGTATCTTCAGCATCTTTACTTTACCAGCGTTCTGGGTGAGCAAAAACAGGAAGG
51 SerAsnLeuAspLeuGluI leTyrGlyValArgAl aGlyLeuGlu nAspGluAl aAspLysVal LysVal I LeuThr GluP roHi sAl aPheVal P roLeuC

SspI (3070)

3001 CAAAATGCCGCAAAAAGGGAATAAGGGCGACACGGAATGTTGAATACTCATACTCTTCCTTTTCAATATTATTGAAGCATTATCAGGGTTATTGTC
17 ysPheAl aAl aPhePheP roI leLeuAl aValArgPheHisGlnI leSer Met

BsrBI (3104) **AatII (3188)**

3101 TCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAACAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCAT
EcoO109I (3242)

3201 TATTATCATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCTTTCGTCTCGCGGTTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTC
3301 CCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTGGCGGGTGTGGGGCTGGCTTAACT

NdeI (3437) **EagI (3487)**

3401 ATGCGGCATCAGAGCAGATTGTAAGTGTACTGAGAGTGACCCATATGGATCTCGATAACAAAAACCCCGCCCGGGGGTTTTTTGTTAGCGGCCGCAATAAAA
—————→
NotI (3487)

3501 TATCTTTATTTTCATTACATCTGTGTGTTGTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAA
3601 ATAGGCTGTCCCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA