



PstI (7)
SdaI (7)

1 CCTGCAGGTTACCGCGGAAACGGTCTCGGGGTGAGAGGTACCCGAAGGACAGGCAGCTGCTGAACCAATAGGACCAGCGCTCAGGGCGGATGCTGCCT
101 CTCATTGGTGGCCGTTAAGAATGACCAGTAGCCAATGAGTCAGCCCGGGGGCGTAGCAATGACGTGAGTTGCGGAGGAGGCCGCTTCAATCGGCAGCA
201 GCCAGCTTGGTGGCATGGACCAATCAGCGGCTCCAACGAGTAGCGACTTACCAATCGGAGGCCTCCACGACGGGGCTGTGGGGAGGGTATATAAGGGC
301 AGTCGGCGACGGCGCGCTCGATACTGGCCGAGACAACACTGACCTGGACACTTGGGCTTCTGCGTGTGTGTGAGGTAAGCGCCGGCGCTGCTGCTAGGC
401 CTGCTCCGAGTCTGCTTCTGTCTCCTCTGACCCCGAGGCCCTGTGCGCCTCAGACCAGAACCGTCTGCGGTTTCGGGGCCACAGCCTGTGTGGA

NeoI (552)

501 CTCCTAAGACTCCTGCCTGACTGCTGAGCGACTGGTCTCAGCGCCGGCACCATGGGGGTTCTCATCATCATCATCATCATGGTATGGCTAGCATGACT
601 GGTGGACAGCAATGGGTCGGGATCTGTACGACGATGACGATAAGGTACCTAAGGATCAGCTTGGAGTTGATCCCGTCTTTTACAACGTCGTGACTGGG
17 GlyGlyGlnGlnMetGlyArgAspLeuTyrAspAspAspAspLysValProLysAspGlnLeuGlyValAspProValValLeuGlnArgArgAspTrpG
701 AAAACCTTGGCGTTACCAACTTAATCGCCTTGACGACATCCCCCTTTCGCGAGCTGGCGTAATAGCGAAGAGGCCCGCACCGATCGCCCTCCCAACA
50 luAsnProGlyValThrGlnLeuAsnArgLeuAlaAlaHisProPheAlaSerTrpArgAsnSerGluGluAlaArgThrAspArgProSerGlnG1
801 GTTGGCAGCCTGAATGGGAATGGCGCTTTCGCTGGTTCCGGCACCAGAGCGGTGCCGGAAGCTGGCTGGAGTGGGATCTTCTGAGGCGGATACT
83 nLeuArgSerLeuAsnGlyTrpArgPheAlaTrpPheAlaProGluAlaValProGluSerTrpLeuGluCysAspLeuProGluAlaAspThr
901 GTCGTCGTCCTCAAACCTGGCAGATGCAGGTTACGATGCGCCATCTACACCAACGTAACCTATCCCATACGGTCAATCCGCGCTTGTCCACGG
117 ValValValProSerAsnTrpGlnMetHisGlyTyrAspAlaProIeTyrThrAsnValThrTyrProIeThrValAsnProProPheValProThrG
1001 AGAATCCGACGGGTTGTTACTCGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTTGATGGCGTTAACTCGGCGTT
150 luAsnProThrGlnCysTyrSerLeuThrPheAsnValAspGluSerTrpLeuGlnGlyGlnThrArgIleIePheAsnGlyValAsnAlaPh
1101 TCATCTGGTGCACCGCGCTGGGTCGGTTACGGCCAGGACGTGTTTCCGCTGTAATTTGACCTGAGCGCATTTTTACGGCCGGAGAAAACCGC
183 eHisLeuTrpCysAsnGlyArgTrpValGlyTyrGlyGlnAspSerArgLeuProSerGluPheAspLeuSerAlaPheLeuArgAlaGlyGluAsnArg
1201 CTCGCGGTGATGGTGTGCTGGTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTTCCGTCAGCTCTCGTTGCTGCATA
217 LeuAlaValMetValLeuArgTrpSerAspGlySerTyrLeuGluAspGlnAspMetTrpArgMetSerGlyIePheArgAspValSerLeuLeuHisL
1301 AACCGACTACAAAATCAGCGATTTCCATGTTGCCACTCGCTTAAATGATGATTTACGCGCGCTGTACTGGAGGCTGAAGTTCAGATGTGGCGGAGTT
250 ysProThrThrGlnIeSerAspPheHisValAlaThrArgPheAsnAspAspPheSerArgAlaValLeuGluAlaGluValGlnMetCysGlyGluLe
1401 GCGTGACTACCTACGGTAACAGTTTCTTTATGGCAGGGTGAACCGCAGGTCGCCAGCGCCACCGCGCTTTCGGCGGTGAAATTATCGATGAGCGTGGT
283 uArgAspTyrLeuArgValThrValSerLeuTrpGlnGlyGluThrGlnValAlaSerGlyThrAlaProPheGlyGlyGluIleIeAspGluArgGly
1501 GGTATGCCGATCGCGTCACACTACGCTGAACGTCGAAAACCCGAAACTGTGGAGCGCCGAAATCCCGAATCTCTATCGTGGCGGTGGTGAAGTGCACA
317 GlyTyrAlaAspArgValThrLeuGluAsnValGluAsnValProLysLeuTrpSerLeuGlnGlyGlnThrArgIleIeProAsnLeuTyrArgAlaValGlnHisT
1601 CCGCCGACGGCAGCTGATTGAAGCAGAAGCCTGCGATGTCCGTTCCGCGAGGTGCCGATTGAAAATGGTCTGCTGCTGCTGCAACGCAAGCCGTTGCT
350 hrAlaAspGlyThrLeuIeGluAlaGluAlaCysAspValGlyPheArgGluValArgIleGluAsnGlyLeuLeuLeuLeuAsnGlyLysProLeuLe
1701 GATTGAGGCGTTAACCGTCACGAGCATCATCTCTGATGGTCAAGTCAAGTATGAGCAGACGATGGTGCAGGATATCCTGCTGATGAAGCAGAACAAC
383 ulIeArgGlyValAsnArgHisGluHisHisProLeuHisGlyGlnValMetAspGluGlnThrMetValGlnAspIleLeuLeuMetLysGlnAsnAsn
1801 TTTAACCGCGTGGCTTTCGCATTATCCGAACCATCCGCTGTGTACACGCTGTGGCAGCGCTACGGCCTGTATGTGGTGAAGCAAAATATTGAAA
417 PheAsnAlaValArgCysSerHisTyrProAsnHisProLeuTrpTyrThrLeuCysAspArgTyrGlyLeuTyrValValAspAlaAsnAlIeGluT
1901 CCCACGGATGGTGCAATGAATCGTCTGACCGATGATCCGCGTGGCTACCGCGGATGAGCGAACCGGTAACGGAATGGTGCAGCGCGATCGAATCA
450 hrHisGlyMetValProMetAsnArgLeuThrAspAspProArgTrpLeuProAlaMetSerGluArgValThrArgMetValGlnArgAspArgAsnHi
2001 CCCGAGTGTGATCATCTGGTCCGCTGGGGAATGAATCAGGCCACGGCGCTAATCAGCAGCGCTGTATCGCTGGATCAAACTCTGTCGATCCTTCCCGCCC
483 sProSerValIleIeTrpSerLeuGlyAsnGlyHisGlyAlaAsnThrIeGluValHisAspAlaLeuTyrArgTrpIleLysSerValAspProSerArgI
2101 GTCAGTATGAAGCGCGGAGCCGACACCGCCACCGATATTATTTGCCGATGACCGCGCGTGGATGAAGCAGCCAGCCCTCCCGCGTGTGCCGA
517 ValGlnTyrGluGlyGlyAlaAspThrThrAlaThrAspIleIeCysProMetTyrAlaArgValAspGluAspGlnProPheProAlaValProL
2201 AATGGTCCATCAAAAAATGGCTTTCGCTACCTGGAGAGACGGCCCGCTGATCCTTTGCGAATACGCCACCGCATGGGTAACAGTCTTGGCGGTTTCGC
550 ysTrpSerIleLysLysTrpLeuSerLeuProGlyGluThrArgProLeuIeLeuCysGluTyrAlaHisAlaMetGlyAsnSerLeuGlyGlyPheAl
2301 TAAACTGCGAGCGTTCGTCAGTATCCCGTTACAGGGCGGCTTCGCTGGGACTGGTGGATCAGTCGCTGATTAATATGATGAAAACGGCAAC
583 alYsTyrTrpGlnAlaPheArgGlnTyrProArgLeuGlnGlyGlyPheValTrpAspTrpValAspGlnSerLeuIeProHisLeuThrAspPheCysIleG
2401 CCGTGGTCCGCTACCGCGGTGATTTTGGCGATACCGCAACGATCGCCAGTCTCTGATGAACGGTCTGGTCTTTCGCGACCGCAGCCGCATCCAGCGC
617 ProTrpSerAlaTyrGlyGlyAspPheGlyAspThrProAsnAspArgGlnPheCysMetAsnGlyLeuValPheAlaAspArgThrProHisProAlaL
2501 TGACGGAAGCAAAACACCGACGAGCTTTTCCAGTTCGGTTATCCGGGCAAACTTCGAAGTGACCGGAAATACCTGTTCCGTCATAGCGATAACGA
650 ueThrGluAlaGlyHisGlnGlnPheGlnPheArgLeuHisGlyAlaAsnThrIeGluValThrSerGluTyrLeuAspArgHisSerAspAsnG1
2601 GCTCCTGCACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGCTGCTCCACAAGGTAACAGTGTATTGAAGTGCCT
683 uLeuLeuHisTrpMetValAlaLeuAspGlyLysProLeuAlaSerGlyGluValProLeuAspValAlaProGlnGlyLysGlnLeuIeGluLeuPro
2701 GAACTACCGCAGCCGGAGAGCGCGGGCAACTCTGGCTCACAGTACCGGTAGTGAACCGCAACCGCAGCCGATGGTCAAGCCGGGCACATCAGCGCT
717 GluLeuProGlnProGluSerAlaGlyGlnLeuTrpLeuThrValArgValValGlnProAsnAlaThrAlaTrpSerGluAlaGlyHisIleSerAlaT
2801 GGCAGCAGTGGCGTCTGGCGAAAACCTCAGTGTGACGCTCCCGCGGCTCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTTTGCATCGA
750 rpGlnGlnTrpArgLeuAlaGlnValAlaGluArgValAsnTrpLeuProAlaAlaSerHisAlaIeProHisLeuThrThrAspPheCysIleG1
2901 GCTGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAAGCTTCTTTTACAGATGTGGATTGGCGATAAAAAACAACCTGTGACCGCGCTGCGGATCAG
783 uLeuGlyAsnLysArgTrpGlnPheAsnArgGlnSerGlyPheLeuSerGlnMetTrpIleGlyAspLysLysGlnLeuLeuThrProLeuArgAspGln
3001 TTCACCCGTGCACCGCTGGATAACGACATTGGCGTAAGTGAAGCGACCCCGATTGACCTAACCGCTGGGTGCAACCGCTGGAAGCGGGCGGCCATTACC
817 PheThrArgAlaGlyValAspAsnAspIleGlyValSerGlyAlaThrArgIleAspTrpAsnAlaTrpValGluArgTrpLysAlaAlaGlyHisTyrG
3101 AGCCGAAGCAGCGTTTGTGAGTGCACGGCAGATACACTTGTGATGCTGGTGTGATACGACCGCTACCGGTGGCAGCATCAGGGAAAACCTTATT
850 lnAlaGluAlaAlaLeuLeuGlnCysThrAlaAspThrLeuAlaAspAlaValLeuIeThrThrAlaHisAlaTrpGlnHisGlnGlyLysThrLeuPh
3201 TATCAGCCGAAAACCTACCGGATGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCAGCGATACCCGCATCCGGCGCGGATTGGC
883 elIeSerArgLysThrTyrArgIleAspGlySerGlyGlnMetAlalIeThrValAspValGluValAlaSerAspThrProHisProAlaArgIleGly
3301 CTGAACCTGCAGCTGGCGCAGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACCTCCCGACCGCTTACTGCGCGCTTTTGGACC
917 LeuAsnCysGlnLeuAlaGlnValAlaGluArgValAsnTrpLeuGlyLeuGlyProGlnGluAsnTyrProAspArgLeuThrAlaAlaCysPheAspA
3401 GCTGGATCTGCCATTGTCAGACATGTATACCCCGTACGCTTCCCGAGCGAAAACGGTCTGCGCTGCGGGACGCGCAATTGAATTATGGCCACACCA
950 rgTrpAspLeuProLeuSerAspMetTyrThrProTyrValPheProSerGluAsnGlyLeuArgCysGlyThrArgGluLeuAsnTyrGlyProHisG1
3501 GTGGCGCGGCACTTCCAGTTCACATCAGCCGCTACAGTCAACAGCAACTGATGAAAACAGCCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGG
983 nTrpArgGlyAspPheGlnPheAsnIleSerArgTyrSerGlnGlnGlnLeuMetGluThrSerHisArgHisLeuLeuHisAlaGluGlyThrTrp

3601 CTGAATATCGACGGTTTCCATATGGGGATTGGTGGCGACGACTCCTGGAGCCGTCAGTATCGGCGGAATTACAGCTGAGCGCGGTCGCTACCATTACC
1017▶ LeuAsnI leAspGlyPheHisMetGlyI leGlyGlyAspAspSerTrpSerProSerValSerAlaGluLeuGlnLeuSerAlaGlyArgTyrHisTyrG
EcoRI (3737)

3701 AGTTGGTCTGGTGTCAAAAATAATAATCTAGTCGAGAATTCGCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAG
1050▶ InLeuValTrpCysGlnLys•••

3801 TGAATAAATGCTTTATTGTGAAATTTGTGATGCTATTGCTTTATTGTGAAATTTGTGATGCTATTGCTTTATTGTAAACCATTATAAGCTGCAATAA

3901 ACAAGTTAAACAACAACAATTGCATTCAATTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTAGA
PacI (4018)

4001 TCCATTTAAATGTTAATTAACCTAGCCATGACCAAAATCCCTTAACGTGAGTTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTC
4101 TTGAGATCCTTTTTTTCTGCGCGTAATCTGCTGCTTGCAAACAAAAAAACCACCGCTACCAGCGGTGTTTGTGGCCGATCAAGAGCTACCAACTCTT
4201 TTTCCGAAGGTAACCTGGCTTCAGCAGAGCGCAGATACCAAATACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCCTCAAGAACTCTGTAGCACCGC
4301 CTACATACCTCGCTCTGCTAATCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCGTGCTTACCAGGTTGGACTCAAGACGATAGTTACCGGATAA
4401 GCGCGACGCGTTCGGCTGAACGGGGGTTTCGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAA
4501 AGCGCCACGCTTCCCGAAGGGAGAAAGCGGCAGAGTATCCGGTAAGCGGCAGGCTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGAAACGCCT
4601 GGTATCTTTATAGTCTGTCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGCGGAGCCTATGAAAAACGCCAGCAA
PacI (4758)

4701 CGCGGCCTTTTACGGTTCCTGGCCTTTTGTGGCCTTTTGCTCACATGTTCTTAATTAATTTTTCAAAGTAGTTGACAATTAATCATCGGCATAGTA
4801 TATCGGCATAGTATAATACGACTCACTATAAGGAGGCCATCATGGCCAAGTTGACCAGTGTCTCCAGTGTCTCACAGCCAGGGATGTGGCTGGAGCTGT
1▶ MetAlaLysLeuThrSerAlaValProValLeuThrAlaArgAspValAlaGlyAlaVa
4901 TGAGTCTGGACTGACAGGTTGGGGTTCTCCAGAGATTTTGTGGAGGATGACTTTCAGGTGTGGTCAGAGATGATGCACCCTGTTTCATCTCAGCAGTC
20▶ IGluPheTrpThrAspArgLeuGlyPheSerArgAspPheValGluAspAspPheAlaGlyValValArgAspAspValThrLeuPheI leSerAlaVal
5001 CAGGACCAGGTGGTGCCTGACAACCCCTGGCTTGGGTGTGGTGAGAGACTGGATGAGCTGTATGCTGAGTGGAGTGAGGTGGTCTCCACCAACTTCA
54▶ GlnAspGlnValValProAspAsnThrLeuAlaTrpValTrpValArgGlyLeuAspGluLeuTyrAlaGluTrpSerGluValValSerThrAsnPheA
5101 GGGATGCCAGTGGCCCTGCCATGACAGAGATTGGAGAGCAGCCCTGGGGGAGAGAGTTTGCCTGAGAGACCCAGCAGGCAACTGTGTGACTTTGTGGC
87▶ rgAspAlaSerGlyProAlaMetThrGluI leGlyGluGlnProTrpGlyArgGluPheAlaLeuArgAspProAlaGlyAsnCysValHisPheValAl
PacI (5267)

5201 AGAGGAGCAGGACTGAGGATAAGAATTGTAACAAAAAACCCTCCCGCGGGGTTTTTTGTTAATTAA
120▶ aGluGluGlnAsp•••