



**PvuI (7)**  
**SgfI (6)** MfeI (82) EcoNI (96)  
1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGCAGAGCGACATCGCCACAGTCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **HindIII (245)** Bsu36I (291)  
EcoNI (287)  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCCGCCGCCCTACCTGAGGCC  
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NcoI (560)  
BstEII (555)  
AgeI (552)  
KasI (535)  
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

**NcoI (560)**  
BstEII (555)  
AgeI (552)  
KasI (535)  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTACCATTGGCCGAGTTTCGAGATGACCAGGCTTCTAGGCTGTG  
601 TGACAACCTGCAAGAAGGAAATTCCTGTATTTAATTTTACCATCCATGAAATCCACTGTCAAAGGAACATTGGTGTGTGCCCTGTCTGCAAGGAACCGTTC  
130▶sAspAsnCysLysLysGluIleProValPheAsnPheThrIleHisGluIleHisCysGluArgAsnIleGlyValCysProValCysLysGluProPhe  
701 CCCAAATCTGACATGGACATTCACATGGCTGCAGAGCACTGTCAAGTGAATGCAACAAGAAGTTGGAGAAGAGGCAGTTAAAGCAGCATGCGG  
47▶ProLysSerAspMetAspIleHisMetAlaAlaGluHisCysGluValThrCysLysCysAsnLysLysLeuGluLysArgGluLeuLysGluHisAlaG  
801 AGACAGAGTGTCCCTGCGGCTCGCGTCTGCCAGCACTGTGATCTGGAGCTTCTGTGTCAAGTTGAAGGAGCATGAGGATTACTGTGGAGCCCGGAC  
80▶IuThrGluCysProLeuArgLeuAlaValCysGluHisCysAspLeuGluLeuSerValValLysLeuLysGluHisGluAspTyrCysGlyAlaArgTh  
901 AGAGCTGTGTGGCAGCTGTGGGCGCAACGTGCTGTGAAGGAGCTGAAGACTCACCCGAAAGTCTGTGGGAGAGTGGAGGAGGAAAAGAGAACGGAGGCT  
113▶rGluLeuCysGlySerCysGlyArgAsnValLeuValLysGluLeuLysThrHisProGluValCysGlyArgValGluGluLysArgThrGluAla  
**BspEI (1008)**  
1001 GCCATCCCTCCGGAGGCTTACGACGAGCCCTGGAGTCAGGACAGAATCTGGATCGCATCCAGCTCCTCAGACAAATCGAGGCTCTGGACCCGCCATGA  
147▶AlaIleProProGluAlaTyrAspGluProTrpSerGluAspArgIleTrpIleAlaSerGluLeuLeuArgGluIleGluAlaLeuAspProProMetA  
1101 GGCTCCCTGGAAGGCCCTGCAAGCCTTTGAGGCAGACCCCTTACAGTAGGACTACCAGCCAGAGGAGCATGGCAGCCAGTTTCCAGTTCAAATAA  
180▶rGluProGlyArgProLeuGluAlaPheGluAlaAspProPheTyrSerArgThrThrSerGluArgSerMetAlaAlaGluPheProValGluAsnAs

NcoMI (1238)  
NaeI (1238)  
Eco47III (1258)  
1201 TCTTTTTGAAGAACAGAAAGGCAGAAAGGACAGAAAGGACAGCGTCCCAAAGGACAGCGTGTGAGAATAACGCACACTTGGACTTCATGTTGGCCTTG  
213▶nLeuPheGluGluGluGluArgGluGluArgAsnArgSerArgGluSerProLysAspSerAlaGluAsnAsnAlaHisLeuAspPheMetLeuAlaLeu

BstXI (1322)  
Bsu36I (1360)  
1301 AGTCTGCAGAATGAGGGACAGGCCACCAGCATGGTAGAGCAGGGCTTCTGGGAGTCTGTGCTGAGGCTGATCCGGCTCGTGCTGGGCCACATCTCTAG  
247▶SerLeuGluAsnGluGlyGluAlaThrSerMetValGluGluGlyPheTrpGluSerValProGluAlaAspProAlaArgAlaGlyProThrSerLeuG  
1401 GTGACATAAAGGGTGTGCTGCTGACGAGATTCTGTGCGCTGTGAGTTCTGTGAGGAGCTGTACCAGAGGAACTGCTCATTGACCATCAGACAAGCTGCAA  
280▶IAspIleLysGlyAlaAlaAspGluIleLeuLeuProCysGluPheCysGluGluLeuTyrProGluGluLeuLeuIleAspHisGluThrSerCysAs

**Acc65I (1564)**  
1501 CCCTTCTCATGCCTTACGTTCACTCAATACGGGACGCTTTCATCAGGGGTGTGGAAGATCCTGGTACCATCTCCAGAACTTTCTACAACAAGCAACA  
313▶nProSerHisAlaLeuArgSerLeuAsnThrGlySerSerSerIleArgGlyValGluAspProGlyThrIlePheGluAsnPheLeuGluGluAlaThr  
1601 AGTAACAGTTTGACACTTAAATGGGCTGAGCAGTTCACTGCTGTGGAAGACAGCATCATCCCTGTGAGTTCTGTGGGTGCAGCTGGAAGAGG  
347▶SerAsnGluPheAspThrLeuMetGlyLeuSerSerSerAlaAlaValGluAspSerIleIleIleProCysGluPheCysGlyValGluGluGluG  
1701 AGGTGCTGTTCTACCATCAGGACAGTGTGACCAACGCCAGCCACAGCAAACCACCGTGCAGTGGAGGGCATCCAGCCAGGATTCGACGCCAGAAAA  
380▶IuValLeuPheTyrHisGluAspGluNcysAspGluNArgProAlaThrAlaAsnHisArgAlaValGluGlyIleProAlaGluAspSerGluProGluAs  
1801 CACTTCAGCAGAGCTGTCCAGGAGCGGGTCAAACACAGGGAGACCTGTCATCTGGTTACATGGATGATGTCAAAGCCGGAATCAGTGAAGGCCCCACC  
413▶nThrSerAlaGluLeuSerArgArgArgValLysHisGluGluAspLeuSerSerGlyTyrMetAspAspValLysProGluSerValLysGlyProThr  
1901 TACTCGATGTCTCCTAACAGGACCATGAACAATGTGGCTTCTGCAACCAGCTGTTGAACCTACCGTCAAGGCCAGGCTGACTGCCAGCGTAGCCCTC  
447▶TyrSerMetSerProAsnArgThrMetAsnAsnValAlaSerCysAsnArgLeuLeuAsnLeuProSerGlyProArgSerAspCysGluNArgSerProP  
2001 CCGTGTGCTGAAACTCAACAACCTGTATAGCCAGGACATCCGTGGGAGATCGGGGACGCCAGAATGGGCCATAGCATCCGGGCACGCTCCAGTGAT  
480▶roGlyValLeuLysLeuAsnAsnSerAspSerGluAspIleArgGlyGluNMetArgGlySerGluAsnGlyProIleAlaSerGlyHisAlaProValIle

**BamHI (2152)**  
2101 CCACTCTATTCAAATCTCTATCCAGAAAACCTTTCGCGCCTTTTTCTCATATGGATCCCTGGGAGGTACGGAGCTGGTGGGAGGAGTGAAGTGGTC  
513▶eHisSerIleGluAsnLeuTyrProGluAsnPheAlaProSerPheProHisGlySerProGlyArgTyrGlyAlaGlyGlyArgSerGluGlyGlyAla  
2199 GGAGCTCTCGGGTCAAGCCTGCAGCTGTGGTACCACAGCAGAGCAGCAAAGGCCAAGCCTCAAAGCAGCAGGGAGCAGGCATGCGGAGGAGGAAGA  
546▶rGSerSerArgValSerProAlaAlaAlaGlyTyrHisSerArgAlaAlaLysAlaLysProProLysGluGluGlyAlaGlyAspAlaGluGluGlu

MscI (2334)  
NheI (2328)  
2299 GGAGTGATGGTACTCTGGGGCTCTTGCAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAA  
579▶uGlu...

HpaI (2466) MfeI (2477)  
2399 AATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTATGTT

**EcoRI (2562)**  
2499 TCAGGTTCAAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAATACAGCATAGCAAACTTTAACCTC  
2599 CAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTCAGCCTCACCTTC

2699 TTTTCATGGAGTTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTATG

**SspI (2801)** **SwaI (2815)**

2799 TAAAAATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCCA

2899 GTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGAT

2999 GAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAG

132 LeuGI uGI uI l eThr Thr LysVal l eLeuLysGI yAsnMe tGI uI l eLeuVal l PheCysAspP rOAl aTyrAspSer l l eLeuGI uArgCysMe tGI yCysP

**BstXI (3105)**

3099 GGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCTTGCTCACAGCAGACC

98 rOser Val Val A rGI l eSer ArgAspVal GI uAspSer TyrP rOHi sArgVal Al aVal l l eThr AspPheAspLysGI nGI yAsnSer Val Al aSer GI

**StuI (3240)**

3199 CAATGGCAATGGCTTACGACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCACAGTCTTGGTCTGATGGCCGCCCC

65 yI l eAl aI l eAl aGI uAl aCysVal Thr Val A rGI yI l eTyrAl aGI uI l eHi sVal Al aSer l l eI l eGI uGI yThr LysThr ArgI l eAl aAl aGI y

**BspHI (3390)**

3299 GACATGGTCTTGTGTCTCATAGAGCATGGTGTCTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATG

32 Val l Hi sHi sLysAsnAspGI uTyrLeuMe tThr l l eLysGI uThr Al aVal l GI uVal l LeuGI uLeuAspGI nGI nSer l l eAsnPheThr LysMe t

**XmnI (3382)**

3399 GCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTC

**AseI (3448)**

3499 ACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTT

**SpeI (3603)**

3599 GATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCC

**SnaBI (3731)**

3698 AAAACCGCATCATCATGGTAATAGCGGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGACTGGGCATAATGCCAGGCGGG

**NdeI (3836)**

3798 CCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCAAGTGGGCAGTTTACCCTAAATACTCCACCCATTGA

3898 CGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAATGGGGCGGGTCTGTTGGGGCGTACGCCAGGCGGGCCATTTA

**SdaI (4014)** **Pacl (4022)** **BspLU11I (4032)**

3998 CCGTAAGTTATGTAACGCC TGCAG GTT AA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTCTGCGTTTT

4096 TCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCC

4196 TGGAAGCTCCCTCGTGGCTCTCTGTCCGACCTGCCGCTTACCGGATACCTGTCGCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCA

**ApaLI (4346)**

4296 CGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACT

4396 ATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGTACAGA

4496 GTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGC

4596 TCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGA

**EagI (4782)**

4696 TCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAA

**Pacl (4762)** **SwaI (4771)** **NotI (4781)**

4796 ATATCTTTATTTTTCATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAA

4896 AATAGGCTGTCCCAGTGAAGTGCAAGTGCCAGGTGCCAGAACATTTCTCTATCGAA