



**PvuI (7)**  
**SgfI (6)** MfeI (82) EcoNI (96)  
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **HindIII (245)** **Bsu36I (291)**  
EcoNI (287)  
201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGGCC  
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
**NgoMI (441)**  
**NaeI (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

**KasI (535)** **AgeI (552)** **EagI (572)** **BspLU11I (560)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACTGTAGATCACCGGTCAACATGTTCCAGGCGGCCGAGCGCCCCAGGAGTGGGCCAT  
1▶Me tPheGI nAl aAl aGI uArgP roGI nGI uT rpAl aMe

**Bsp120I (603)** **BsrBI (628)**  
601 GGAGGGCCCCGCGACGGGCTGAAGAAGGAGCGGCTACTGGACGACCCACGACAGCGGCCTGGACTCCATGAAGACGAGGAGTACGAGCAGATGGTC  
13▶tGI uGI yProArgAspGI yLeuLysLysGI uArgLeuLeuAspAspArgHi sAspSer GI yLeuAspSer MetLysAspGI uGI uTyrGI uGI nMetVal  
**PstI (706)** **XhoI (721)**  
701 AAGGAGCTGCAGGAGATCCGCTCGAGCCGAGGAGGTGCCGCGGGCTCGGAGCCCTGGAAGCAGCAGCTCACCGAGGACGGGGACTCGTTCCTGCACT  
47▶LysGI uLeuGI nGI uI l eArgLeuGI uP roGI nGI uVal l P roArgGI ySer GI uP roT rpLysGI nGI nLeuThr GI uAspGI yAspSer PheLeuHi sL  
**PstI (889)**  
801 TGGCCATCATCCATGAAGAAAAGCACTGACCATGGAAGTGATCCGCCAGGTGAAGGAGACCTGGCC TTCCTCAACTTCAGAACAACCTGCAGCAGAC  
80▶euAl a l l e l eHi sGI uGI uLysAl aLeuThr MetGI uVal l l eArgGI nVal LysGI yAspLeuAl aPheLeuAsnPheGI nAsnAsnLeuGI nGI nTh  
**SacI (973)**  
901 TCCACTCCACTTGCTGTGATCACCAACAGCCAGAAATTGCTGAGGCACTTCTGGGAGCTGGCTGTGATCCTGAGCTCCGAGACTTTTCGAGGAAATACC  
113▶r P roLeuHi sLeuAl aVal l l eThrAsnGI nP roGI u l l eAl aGI uAl aLeuLeuGI yAl aGI yCysAspP roGI uLeuArgAspPheArgGI yAsnThr  
**Tth111I (1050)**  
1001 CCCCTACACCTTGCTGTGAGCAGGGCTGCCTGGCCAGCGTGGGAGTCTGACTCAGTCTGACCACCCCGCACCTCCACTCCATCCTGAAGGCTACCA  
147▶P roLeuHi sLeuAl aCysGI uGI nGI yCysLeuAl aSer Val l GI yVal l LeuThr GI nSer CysThr Thr P roHi sLeuHi sSer l l eLeuLysAl aThr A

**PmlI (1113)**  
**Eco72I (1113)**  
**BbrPI (1113)**  
1101 ACTACAATGGCCACAGTGTCTACACTTAGCCTCTATCCATGGCTACCTGGGCATCGTGAGCTTTTGGTGTCTTTGGTGCTGATGTCAATGCTCAGGA  
180▶snTyrAsnGI yHi sThr CysLeuHi sLeuAl aSer l l eHi sGI yTyrLeuGI y l l eVal l GI uLeuLeuVal l Ser LeuGI yAl aAspVal l AsnAl aGI nGI  
1201 GCCCTGTAATGGCCGGACTGCCCTTACCTCGCAGTGGACCTGCAAAATCCTGACCTGGTGTCACTCCTGTTGAAGTGTGGGGCTGATGTCAACAGAGTT  
213▶uP roCysAsnGI yArgThr Al aLeuHi sLeuAl aVal l AspLeuGI nAsnP roAspLeuVal l Ser LeuLeuLeuLysCysGI yAl aAspVal l AsnArgVal l  
**XmnI (1384)**  
1301 ACCTACCAGGGCTATTCTCCCTACCAGCTCACCTGGGGCCGCCAAGCACCCGGATACAGCAGCAGCTGGGCCAGCTGACACTAGAAAACCTTCAGATGC  
247▶Thr TyrGI nGI yTyrSer P roTyrGI nLeuThr TrpGI yArgP roSer Thr Arg l l eGI nGI nGI nLeuGI yGI nLeuThr LeuGI uAsnLeuGI nMet l  
1401 TGCCAGAGAGTGAAGATGAGGAGAGCTATGACACAGAGTCAGAGTTCACGGAGTTCACAGAGGACGAGCTGCCATGATGACTGTGTGTTGGAGGCCA  
280▶euP roGI uSer GI uAspGI uGI uSer TyrAspThr GI uSer GI uPheThr GI uPheThr GI uAspGI uLeuP roTyrAspAspCysVal l PheGI yGI yGI  
**NheI (1533)**  
1501 GCGTCTGACGTTATGAGTGCAAAGGGGCTGAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAA  
313▶nArgLeuThr Leu•••

**HpaI (1671)** MfeI (1682)  
1601 AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAACAAACAACCTGCAATTCATTTTAT

**EcoRI (1767)**  
1701 GTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCAAAATACAGCATAGCAAACTTTAAC  
1801 CTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGACGCCTCACC  
1901 TTCTTTCATGAGGTTAAGATATAGTGATTTTCCCAAGGTTTGAACCTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTT

**SspI (2006)** **SwaI (2020)**  
2001 TAGTAAAAATTCAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCC  
2101 CCAGTTTAGTGTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGG  
144▶•••AsnArgThr TyrLysLeuP ro

**BstXI (2310)**  
2201 GATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAGCAGTCAAGGATAGTCAAGATGAGCTCTCGACATGCCA  
133▶l l eLeuGI uGI u l l eThr Thr LysVal l LeuLysGI yAsnMetGI u l l eLeuVal l PheCysAspP roAl aTyrAspSer l l eLeuGI uArgCysMetGI yC  
2301 CAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAG  
99▶ysP roSer Val l Val Arg l l eSer ArgAspVal l GI uAspSer TyrP roHi sArgVal l aVal l l eThrAspPheAspLysGI nGI yAsnSer Val l Al aSe  
**StuI (2445)**  
**Eco147I (2445)**  
2401 ACCCAATGGCAATGGCTTCAGCAGACAGTACCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCGAGTCTTGGTCTGATGGCCGC  
66▶r GI y l l eAl aGI uAl aCysVal l Thr Val l ArgGI y l l eTyrAl aGI u l l eHi sVal l Al aSer l l e l l eGI uGI yThr LysThrArg l l eAl aAl a

2501 CCCGACATGGTGCTTGTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATG  
 33 GlyValHisHisLysAsnAspGluTyrLeuMetThrIleLysGluThrAlaValGluValLeuGluLeuAspGlnGlnSerIleAsnPheThrLysMet

VspI (2653)  
 AseI (2653)

2601 ATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGG  
 TTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCC

SpeI (2808)

2801 GTTGATTTACTAGTCAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACT  
 TTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCC

SnaBI (2936)  
 Eco105I (2936)

2900 GCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGC  
 TTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCC

NdeI (3041)

3000 GGGCATTACCCTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCAT  
 TGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGGGGGGTCTTGGGCGGTGAGCCAGGCGGGCCAT

SdaI (3219) PacI (3227) BspLU11I (3237)

3200 TTACCCTAAGTTATGTAACGCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGT  
 TTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATAACAGGCGTTTCC  
 CCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGC

ApaLI (3551)

3498 TCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTA  
 ACTATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTAC  
 AGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGT  
 AGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTT

EagI (3987)  
 PacI (3967) SmaI (3976) NotI (3986)

3898 TGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCAATGGCTAGTTAATTAACATTTAAATCAGCGCCCAAT  
 AAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAG  
 4098 CAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA