



**PvuI (7)**  
**SgfI (6)**
**MfeI (82)**

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)**
**HindIII (245)**

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCTCCTGAACTGCGTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
**NgoMI (441)**  
**NaeI (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTGTTTCGTTT

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**KasI (535)**
**SphI (560)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCGCTACTCTGAGATCACCGGTACAGCATGCACCTCCCTGCGATCCTGCTTTGTCTCTCTGGTC  
1MetHisLeuProAlalLeuLeuCysAlaLeuTrpSe  
**EcoO109I (686)**

601 TGCAGTAGTGGCTGAGACCTCGGATGACTACGAGCTCATGTATGTGAATTTGGACAACGAAATAGACAATGGACTTCATCCACCGAGGACCCACGCCA  
13RAlaValValAlaGluThrSerAspAspTyrGluLeuMetTyrValAsnLeuAspAsnGluLeuAspAsnGluLeuHisProThrGluAspProThrPro

**SphI (773)**
**Tth111I (793)**

701 TGGCACTGCCAGGAGCACTCGGAGTGGGACAAGCTGTTTCATCATGCTGGAGAAGCTCGAGATGCGGGAGGCATGCTGTTGCAGGCCACCCAGCAGC  
47CysAspCysArgGlnGluHisSerGluTrpAspLysLeuPheIleMetLeuGluAsnSerGlnMetArgGluGlyMetLeuLeuGluAlaThrAspAspV

**FspI (868)**

801 TCCTCCGTGGAGAGCTGCAGCGGCTGCGGGCAGAGCTGGGGCGGCTGGCGGGCGGCATGGCGAGGCCGTGCGCAGCCGGTGGCCCGCAGACGCCAGGCT  
80AlaLeuArgGluGluLeuGluArgLeuArgAlaGluLeuGluYArgLeuAlaGluGlyMetAlaArgProCysAlaAlaGluGlyProAlaAspAlaArgLe

**BssHII (955)**  
**AscI (954)**

901 GGTGCGGGCGCTGGAGCCGCTGCTGCAGGAGAGCCGTGACGCGAGCCTCAGGCTGGCGCGCCTGGAGGACGCGGAGGCGGGCGACCCGAGGGCAGAGTG  
113ValAlaArgAlaLeuGluProLeuLeuGluGlnuSerArgAspAlaSerLeuArgLeuAlaArgLeuGluuAspAlaGluAlaArgArgProGluAlaThrVal

**AvrII (1005)**
**BssHII (1038)**

1001 CCTGGCCTAGGCGCTGTGCTGGAGAACTGCGGCGGACGCGCGGACCTGAGCGCCGTGCGAGAGCTGGGTGCGCCGCCACTGGCTGCCCGCAGGTTGTG  
147ProGluLeuGluYAlaValLeuGluGluLeuArgArgThrArgAlaAspLeuSerAlaValGlnSerTrpValAlaArgHisTrpLeuProAlaGluYCysG

**BstBI (1125)**  
**Bsp119I (1125)**  
**AsuII (1125)**
**HindIII (1168)**
**ScaI (1183)**

1101 AAACAGCAATTTTCTTCCAATGCGTTTGAAGAAGATTTTGAAGCGTGCATCCTGTGAGACCAATGAAGCTTGAATCTTTTACTTGTGATTTGGGT  
180IuThrAlalIePhePheProMetArgSerLysLysIlePheGlySerValHisProValArgProMetLysLeuGluuSerPheSerThrCysIleTrpVa

**DraIII (1245)**
**PvuII (1270)**

1201 CAAAGCCACAGATGTATTAACAAAACCATCCTGTTTTCTTATGGCACAAAGTGAACCCCTATGAGATTGAGCTGTACCTCAGTTCCAGTCCCTAGTG  
213IlysAlaThrAspValLeuAsnLysThrIleLeuPheSerTyrGlyThrLysTrpAsnProTyrGluIleGluLeuTyrLeuSerSerGlnSerLeuVal

**BstXI (1365)**

1301 TTGGTGGTGGGTGAAAAGGAGAACAAGCTGGCTGCAGACACTGTGGTGTCCCTGGGGAGTGGTCCCACCTGTGTGGCACCTGGAGTTAGAGCAGGGGA  
247LeuValValGlyGlyLysGluAsnLysLeuAlaAlaAspThrValValSerLeuGlyArgTrpSerHisLeuCysGlyThrTrpSerSerGluGlnuYs

**XcmI (1436)**
**XcmI (1494)**

1401 GCATGTCCCTGTGGGCAAACGGGAGCTGGTGGCTACCACTGTAGAGATGGCCAAAAGTCACTCTGTTCTGAGGGTGGACTCCTACAGATTGGCCAAGA  
280erMetSerLeuTrpAlaAsnGlyGluLeuValAlaThrThrValGluMetAlaLysSerHisSerValProGluGlyGlyLeuLeuGluIleGlyGluGln

1501 AAAGAATGGTTGCTGTGTAGGTGGGGCTTTGACGAATCATTAGCATTTTCTGGAAGAATCACAGGCTTCAATATCTGGGATCGGGTTCTCAGCGAGGAG  
313uLysAsnGlyCysCysValGlyGlyGlyPheAspGluSerLeuAlaPheSerGlyArgIleThrGlyPheAsnIleTrpAspArgValLeuSerGluGlu

1601 GAGATACGGGCCAGTGGAGGAGTCGAATCCTGTACATCCGGGAAAATGTCGTGGGTGGGAGTCACAGAGATTGAGCGCACGGAGGAGCCAGTATG  
347GluIleArgAlaSerGlyGlyValGluSerCysHisIleArgGlyAsnValValGlyTrpGlyValThrGluIleGluAlaHisGlyGlyAlaGluNTrpV

**NheI (1790)**

1701 TTTCTTAAGTGTGTGAAAATCTACTTGAAGCCAAAGGAGACTCACATTTAAATATGCCAGTTGAAAAGTCTGAAAACCTCGGTGCGTGTAGCTGGC  
380alSer...

1801 CAGACATGATAAGATACATTGATGAGTTTGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATT

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**HpaI (1928)**
**MfeI (1939)**

1901 TGTAACCATTATAAGCTGCAATAAAACAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGTTTTTAAAGCAAG

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**EcoRI (2024)**

2001 TAAAACCTCTACAAATGTGGTATGGAATTTCAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAA  
2101 TAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGATTTTCCCAAGGTTT

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**SspI (2263)**
**SwaI (2277)**

2201 GAACTAGCTTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTATAGTAAATATTCAGAATAATTTAAATACATCATTGCAATGA

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**EcoO109I (2338)**

2301 AAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTGTAGTGTGGACTTAGGGAACAAGGAACCTTTAATA

2401 GAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATC  
 141 •••AsnArgThr TyrLysLeuProl | eLeuGluGlu | eThr Thr LysVal | LeuLysGlyAsnMetG  
 BstXI (2567)

2501 TCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGT  
 118 | u | l | eLeuVal | PheCysAspP roAl aTyrAspSer | l | eLeuGluArgCysMetGlyCysP roSer Val | ValA rgl | eSer ArgAspVal | Gl uAspSer Ty

2601 AGGGTGCCTGACAGCCACAATGGTGTCAAAGCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTT CAGCACAGACAGTGACCCTGCCAAT  
 85 r P roHi sArgVal | Al aVal | l | eThr AspPheAspLysGlu | nGlyAsnSer Val | Al aSer Gly | l | eAl aGluAl aCysVal | Thr ValA rgl y | l | e

StuI (2702)  
 Eco147I (2702)

2701 GTAGGCTCAATGTGGACAGCAGAGATGATCTCCCGAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTGTGTCCTCATAGAGCATGGTGATCTTC  
 52 TyrAl aGlu | l | eHi sVal | Al aSer | l | e | l | eGluGlyThr LysThrArg | l | eAl aAl aGlyVal | Hi sHi sLysAsnAspGluTyrLeuMetThr | l | eLysG

BspHI (2852)  
 XmnI (2844)

2801 TCAGTGGCGACCTCCACCAGCTCCAGATCTCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATAC  
 18 | uThrAl aVal | Gl uVal | LeuGluLeuAspGlu | nGlnSer | l | eAsnPheThr LysMet

VspI (2910)  
 AseI (2910)

2901 TATGCCGATGATTAATTGTCAAACAGCGTGGATGGCTCTCCAGCTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACAC

SpeI (3065)

3001 GCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGG

SnaBI (3193)  
 Eco105I (3193)

3100 GGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTA

NdeI (3298)

3200 GATGTACTGCCAAGTAGGAAAGTCCATAAGGTGATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGC

3300 ATATGATACACTTGATGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACAT

SdaI (3476) PacI (3484) BspLU11I (3494)

3400 ACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCC T G C A G G T T A A T T A A G A A C A

3498 TGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCG

3598 ACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTTCCCTGGAAGTCCCTCGTGCGCTCTCTGTTCCGACCTGCCG

3698 CTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCA

ApaLI (3808)

3798 AGCTGGGCTGTGTGCACGAACCCCGTTGAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC

3898 ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGA

3998 ACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCCGCTGGTAGCGGTGTT

4098 TTTTTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACTC

EagI (4244)  
 PacI (4224) SwaI (4233) NotI (4243)

4198 ACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTGT

4298 GTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAAGTGCCAGAACATT

4398 TCTCTATCGAA