



EcoNI (101)

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACCGGTGCCTA

101 GAGAAAGTGGCGGGGTAAGTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTCAGTAGTCGCC

HindIII (246) Bsu36I (293)

201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC

PvuII (242) EcoNI (292)

301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCCCTCCCGCCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTAAAGCTCAGGTCGAGACC

NaeI (444)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCACGCTTTCGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

KasI (536) AseI (561)

501 TCTGTTTGTCCGCGTTACAGATCCAAGCTGTGACCGCGCCTACAAACAGTAGTTGACAATTAATCATCGGCATAGTATATCGGCATAGTATAATACGAC

PshAI (642) Tth111I (680)

601 TCACTATAGGAGGCCATCATGAAAAAGCCTGAACTACCCGCGACTGTCTGCGAGAAGTTTCTGATCGAAAAAGTTTCGACAGCGTCTCCGACCTGATGCAG

BspHI (618) AatII (647)

701 CTCTCGGAGGGCGAAGAATCTCTGTCTTCAGCTTCGATGTAGGAGGGCGTGATATGCTCTGCGGGTAAATAGCTGCGCCGATGGTTTCTACAAAGATC

801 GTTATGTTTATCGGCACTTTGCATCGGCGCGCTCCCGATTCCGGAAGTGTGACATTTGGGAATTCAGCGAGAGCCTGACCTATTGCATCTCCGCGC

EcoRI (863)

901 TGCACAGGGTGTACGTTGCAAGACCTGCCTGAAACCGAACTGCCGCTGTTCTGCAACCCGTCGCGGAGCTCATGGATGCGATCGCTGCGGCCGATCTT

RsrII (1028) NdeI (1070)

1001 AGCCAGACGAGCGGGTTCGGCCATTTCGACCCGCAAGGAATCGGTCAATACACTACATGGCGTGATTTTCATATGCGCGATTGCTGATCCCATGTGTATC

Tth111I (1124) DraIII (1201)

1101 ACTGGCAAACTGTGATGGACGACCCGTCAGTCCGTCGCGCAGGCTCTCGATGAGCTGATGCTTTGGGCCGAGGACTGCCCGAAGTCCGGCACCT

1201 CGTGACGCGGATTTTCGGCTCCAACAATGCTCTGACGGACAATGGCCGATAACAGCGGTCATTGACTGGAGCGAGGCGATGTTCCGGGATCCCAATAC

1301 GAGGTCGCCAACATCTTCTTCTGGAGGCGGTGGTGGCTTGATGGAGCAGCAGCGCTACTTTCGAGCGGAGGCATCCGGAGCTTGCAGGATCGCCCGC

SacII (1400)

1401 GGCTCCGGCGTATATGCTCCGATTGGCTTTGACCAACTCTATCAGAGCTTGGTTGACGGCAATTTTCGATGATGAGCTTGGCGCAGGGTCGATGCGA

1501 CGCAATCGTCCGATCCGGAGCCGGACTGTCGGGCGTACACAAATCGCCCGCAGAAGCGCGCCGCTGACCAGTGGCTGTGTAGAAGTACTCGCCGAT

NheI (1657)

1601 AGTGGAAACCGACGCCCCAGCACTCGTCCGAGGGCAAAGGAATGAGTCGAGAATTCGCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAACC

EcoRI (1651)

1701 ACAACTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCAT

HpaI (1822) MfeI (1831)

1801 TATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTC

PacI (1932)

1901 TACAAATGTGGTAGATCCATTAAATGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCCGCTTGTGCGGTTT

SwaI (1922) BspLU11I (1938)

2000 TTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCAGCGTCAAGTCAGAGGTGGCGAAACCCGACGAGACTATAAGATACCAGGCGTTTCCCC

2100 CTGGAAGCTCCCTCGTGCCTCTCTGTTCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCT

2199 CACGCTGTAGGTATCTCAGTTCCGTTGAGTGTCTCGCTCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCGACCGCTGCGCTTATCCGGTAA

AlwNI (2354)

2299 CTATCGTCTTGAGTCAACCCGGTAAGACAGCACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACA

2399 GAGTTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTA

2499 GCTCTTGATCCGGCAAAACCAACCGCTGGTAGCGGTGGTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTT

NsiI (2664) SspI (2697)

2599 GATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCATGCATGAGACAATAACCTGATAAATGCTTCAATAATA

2699 I I G A A A A G G A A G A G I A I G A G I A I I C A A C A I I I C C G I G I C G C C I I A I I C C C I I I I I G C G G C A I I I I G C C I I C C I G I I I I G C I C A C C C A G A A A C G C I G
1▶MetSer | | eGl nHi sPheArgValAl aLeu | eP roPhePheAl aAl aPheCysLeuP roVal PheAl aHi sP roGl uThr Leu **XmnI (2897)**

2799 G T G A A A G T A A A G A T G C T G A A G A T C A G T T G G G T G C A C G A G T G G G T T A C A T C G A A C T G G A T C T C A A C A G C G G T A A G A T C C T T G A G A G T T T T C G C C C G A A G
29▶Val LysVal | LysAspAl aGl uAspGl nLeuGl yAl aArgVal Gl yTyr | | eGl uLeuAspLeuAsnSer Gl yLys | | eLeuGl uSer PheArgProGl uG

2899 A A C G T T T T C C A A T G A T G A G C A C T T T T A A G T T C T G C T A T G T G G C G C G T A T T A T C C C G T A T T G A C G C C G G C A A G A G C A A C T C G G T C G C C G C A T A C A C T A
62▶ | uArgPheP roMe tMetSer Thr PheLysVal LeuLeuCysGl yAl aVal LeuSer Arg | | eAspAl aGl yGl nGl uGl nLeuGl yA rgArg | | eHi sTy
ScaI (3021)

2999 T T C T C A G A A T G A C T T G G T T G A G T A C T C A C C A G T C A C A G A A A A G C A T C T T A C G G A T G G C A T G A C A G T A A G A G A A T T A T G C A G T G C T G C C A T A A C C A T G A G T
95▶r Ser Gl nAsnAspLeuVal | Gl uTyrSer ProVal | Thr Gl uLysHi sLeuThrAspGl yMetThr ValA rgGl uLeuCysSer Al aAl | | eThr MetSer

3099 G A T A A C A C T G C G G C C A A C T T A C T T C T G A C A A C G A T C G G A G G A C C G A A G G A G C T A A C C G C T T T T T G C A C A A C A T G G G G G A T C A T G T A A C T C G C C T T G A T C
129▶ AspAsnThr Al aAl aAsnLeuLeuLeuThr Thr | | eGl yGl yProLysGl uLeuThr Al aPheLeuHi sAsnMetGl yAspHi sVal Thr ArgLeuAspA
FspI (3279)

3199 G T T G G G A A C C G G A G C T G A A T G A A G C C A T A C C A A A C G A C G A G C G T G A C A C C A C G A T G C C T G T A G C A A T G G C A A C A A C G T T G C G C A A A C T A T T A A C T G G C G A
162▶r gTrpGl uProGl uLeuAsnGl uAl a | | eP roAsnAspGl uArgAspThr Thr MetP roValAl aMe tAl aThr Thr LeuArgLysLeuLeuThr Gl yGl
AseI (3327)

3299 A C T A C T T A C T C T A G C T T C C C G G C A A C A A T T A A T A G A C T G G A T G G A G G C G G A T A A A G T T G C A G G A C C A C T T C T G C G C T C G G C C T T C C G G C T G G C T G G T T T
195▶uLeuLeuThr LeuAl aSer ArgGl nGl nLeu | | eAspTrpMe tGl uAl aAspLysVal | Al aGl yProLeuLeuArgSer Al aLeuProAl aGl yTrpPhe

3399 A T T G C T G A T A A A T C T G G A G C C G G T G A G C G T G G G T C T C G C G G T A T C A T T G C A G C A C T G G G G C C A G A T G G T A A G C C C T C C C G T A T C G T A G T T A T C T A C A C G A
229▶ | | eAl aAspLysSer Gl yAl aGl yGl uArgGl ySerArgGl y | | e | | eAl aAl aLeuGl yProAspGl yLysP roSerArg | | eVal Val | | eTyrThr T

3499 C G G G A G T C A G G C A A C T A T G G A T G A A C G A A T A G A C A G A T C G C T G A G A T A G G T G C C T C A C T G A T T A A G C A T T G G T A A C T G T C A G A C C A A G T T T A C T C A T A
262▶hr Gl ySer Gl nAl aThr Me tAspGl uArgAsnArgGl n | | eAl aGl u | | eGl yAl aSer Leu | | eLysHi sTrp•••
NsiI (3676)

3599 T A T A C T T T A G A T T G A T T T A A A C T T C A T T T T T A A T T T A A A A G G A T C T A G G T G A A G A T C C T T T T T G A T A A T C T C A T G C A T G A C A T T A A C C T A T A A A A A T A G
EcoO109I (3710)

3699 G C G T A T C A C G A G G C C T T T C G T C T C G C G C G T T T C G G T G A T G A C G G T G A A A C C T C T G A C A C A T G C A G C T C C C G G A G A C G G T C A C A G C T T G T C T G T A A G C G
3799 G A T G C C G G G A G C A G A C A A G C C C G T C A G G C G C G T C A G C G G T G T T G C G G G T G T C G G G C T G G C T T A A C T A T G C G G C A T C A G A G C A G A T T G T A C T G A G A G
BstEII (3909) NotI (3926)
NdeI (3905) **XhoI (3920)**

3899 T G C A C C A T A T G G T G A C C G G A T C T C G A G C G C C G C A A T A A A A T A T C T T T A T T T T C A T T A C A T C T G T G T G T T G G T T T T T T G T G T G A A T C G T A A C T A A C A T A C
3999 G C T C T C C A T C A A A A C A A A C G A A A C A A A C A A A C T A G C A A A T A G G C T G T C C C C A G T G C A A G T G C A G G T G C C A G A A C A T T T C T A T C G A A