



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA **MfeI (82)**

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCGCCGCCCTACCTGAGGCC **PvuII (239)** **Bsu36I (291)**

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMI (441)
NaeI (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
KasI (535) 501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTACCACCATGGAGCCCACCGACCGTCCCTCACCGAGGAGACCT **AgeI (552)**
1▶MetGl uP roThr Al aP roSer LeuThr Gl uGl uAspLe

Bst1107I (637)
601 CACTGAAGTGAAGAAGGACGCCTTAGAAAAATTTACGTGTATACCTGTGTGAGAAAAATCATAGCTGAGAGACATTTTGATCATCTACGTGCAAAAAAATA
13▶uThr Gl uVal LysLysAspAl aLeuGl uAsnLeuArgVal TyrLeuCysGl uLys I l e l eAl aGl uArgHi sPheAspHi sLeuArgAl aLysLys l l e
701 CTCAGTAGAGAAGACACTGAAGAAATTTCTGTGCAACATCAAGTAGAAAAAGGCTGGAAAAATGTTAGACTACTTACAGGAAAACCCAAAAGGTCTGG
47▶LeuSer ArgGl uAspThr Gl uGl u l l eSer CysArgThr Ser Ser ArgLysArgAl aGl yLysLeuLeuAspTyrLeuGl nGl uAsnP roLysGl yLeuA
801 ACACCTTGTGAATCTATTGCGCGAGAAAAACAGAACTTCTGATACAGAAGATTACAGATGAAGTGTGAAACTTAGAAATATAAACTAGAACA
80▶spThr LeuVal l Gl uSer l l eArgArgGl uLysThr Gl nAsnPheLeu l l eGl nLys l l eThr AspGl uVal l LeuLysLeuArgAsn l l eLysLeuGl uHi
901 TCTGAAAGGACTAAAATGTAGCAGTTGTGAACCTTTCCAGATGGAGCCACGAACAACCTCTCCAGATCAAATTCAGATGAGAGTAATTTCTCTGAAAAA
113▶sLeuLysGl yLeuLysCysSer Ser CysGl uP roPheP roAspGl yAl aThrAsnAsnLeuSer ArgSerAsnSerAspGl uSerAsnPheSer Gl uLys

XbaI (1089)
1001 CTGAGGCATCCACTGTCATGTACCATCCAGAAGGAGAATCCAGCAGCAGCCCTTTTTTCTACTAATCTTCTCTGAATTTGCCTGTTCTAGAAGTAG
147▶LeuArgAl aSer Thr Val MetTyrHi sP roGl uGl yGl uSer Ser Thr Thr P roPhePheSer ThrAsnSer Ser LeuAsnLeuP roVal l LeuGl uVal l G

SandI (1148) 1101 GCAGAAGTAAAAATACCATCTTCTCTTCAACTACACTTCCAGACCTGGGACCCAGGGCTCCTCCTTTGCCACAGATCTACAGTTAGAAGAAGG
180▶ l yArgThr Gl uAsnThr l l ePheSer Ser Thr Thr LeuP roArgP roGl yAspP roGl yAl aP roP roLeuP roP roAspLeuGl nLeuGl uGl uGl uGl

BglIII (1176)
MscI (1282)
NheI (1276)
1201 AACTGTGCAAACTCTAGTGAGATGTTTCTCCCTTAAGATCAGTACTGTTTACGACAATGACACTTTATTGCGCTAGCTGGCCAGACATGATAAGA
213▶yThr CysAl aAsnSer Ser Gl uMe tPheLeuP roLeuArgSer ArgThr Val Ser ArgGl n●●●

1301 TACATTGATGAGTTTGGACAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAA

HpaI (1414) 1401 GCTGCAATAACAAGTTAACAACAACAATTGCATTTTATGTTTCAGGTTAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAA **MfeI (1425)**

EcoRI (1510)
1501 ATGTGGTATGGAATTTCTAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCAT
1601 CAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGATTTTCCCAAGGTTTGAAGCTAGCTCTTCA

SspI (1749) 1701 TTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTGTAGAAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTT **Swal (1763)**

1801 TATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCA

1901 AGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAA
141◀●●●AsnArgThr TyrLysLeuProl l eLeuGl uGl u l l eThr Thr LysVal l LeuLysGl yAsnMetGl u l l eLeuVal Phe

SacI (2024) 2001 GCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACA
114◀CysAspP roAl aTyrAspSer l l eLeuGl uArgCysMe tGl yCysP roSer Val l Val Arg l l eSer ArgAspVal l Gl uAspSer TyrP roHi sArgVal l A

BstXI (2053) 2101 GCCACAATGGTGTCAAAGCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGT
StuI (2188)
80◀ l aVal l l eThr AspPheAspLysGl nGl yAsnSer Val Al aSer Gl y l l eAl a l l eAl aGl uAl aCysVal l Thr Val l ArgGl y l l eTyrAl aGl u l l eHi
2201 GGACAGCAGAGATGATCTCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTGCTCTATAGAGCATGGTATCTTCTCAGTGGCGACCTC
47◀sVal l aSer l l e l l eGl uGl yThr LysThr Arg l l eAl aAl aGl yVal Hi sHi sLysAsnAspGl uTyrLeuMe tThr l l eLysGl uThr Al aVal l Gl u

BspHI (2338) 2301 CACCAGCTCAGATCCTGCTGAGAGATGTTGAAGGCTTCATGATGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTA
14◀Val l LeuGl uLeuAspGl nGl nSer l l eAsnPheThr LysMe t **AseI (2396)**

2401 **ATTGTCAA**AACAGCGTGGATGGCGTCTCCAGC**T** TATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATT
SacI (2453)
 2501 TCGGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTT**ACTAGT**CAAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGGGA
SpeI (2551)
 2600 AATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAG
SnaBI (2679)
 2700 TAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTG
NdeI (2784)
 2800 ATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGAC

PstI (2963)
 2900 GTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGC**CTGCAGGTTAA**TTAAGA**ACATGTGAGCAA**AGGC
SdaI (2962)PacI (2970)BspLU11I (2980)
 2998 CAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGA
BspLU11I (2980)
 3098 GGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCT

ApaLI (3294)
 3198 GTCCGCCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTG
 3298 CACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCA
 3398 CTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTAT
 3498 CTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAG
 3598 CAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACACTCACGTTAAGGGATT

EagI (3730)
PacI (3710)SwaI (3719)NotI (3729)
 3698 TGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTAATCGTAACTA
 3798 ACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA