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Bsp120I (7)
 EcoO1091 (7)
PstI (6)
SdaI (6) **SpeI (13)**

1 **CCTGCAGGCCCACTAGTCTTTTAAAGCAGTCGAGGGGGTCTAGGTGTGGCAGGGACGAGCTGGCGCGGCGTCTGGTGGTGCACCGCACCACGGGC**

101 **AGAGCCACGCGGGGAGGACTACAACCTCCCGGCACCCCCGCGCCCGCCCTCTACTCCAGAAGGCCGCGGGGGTGGACCGCCTAAGAGGGCGTG**

BssHII (221)
AscI (221)
 SacII (219) BsaBI (238) **BspHI (283)**

201 **CGTCCCGACATGCCCGCGCGGCCATTAAACGCCAGATTTGAATCGCCGGACCCGTTGGCAGAGGTGGCGCGGCGGCATCATGA GCGTTTCTCATC**
 1 Met S er Gl y Ser Hi s H

Bsu36I (382)
Acc65I (377)
 NheI (321)

301 **ATCATCATCATGGTATGGCTAGCATGACTGGTGGACGAAATGGTTCGGGATCTGTACGACGATGACGATAAGGTACCTAAGGATCAGCTTGGAGT**
 6 i s Hi s Hi s Hi s Hi s Gl y Me t Al a Ser Me t Thr Gl y Gl y Gl n Gl n Me t Gl y Ar g Asp Leu Tyr Asp Asp Asp Lys Val I Pro Lys Asp Gl n Leu Gl y Va

401 **TGATCCCGCTGTTTTACAACGTCGTGACTGGGAAAACCCCTGGCGTTACCAACTTAATCGCCTTGACGACATCCCCCTTTCGCCAGCTGGCGTAATAGC**
 39 I Asp ro Val Val Leu Gl n Arg Arg Asp Trp Gl u Asn P ro Gl y Val Thr Gl n Leu Asn Arg Leu Al a Al a Hi s P ro P ro Phe Al a Ser Trp Arg Asn Ser

501 **GAAGAGGCCCGCACCATCGCCCTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCTGGTTCCGGCACCAGAAGCGGTGCCGAAAAGCT**
 73 Gl u Gl u Al a Arg Thr Asp Arg P ro Ser Gl n Gl n Leu Arg Ser Leu Asn Gl y Gl u Trp Arg Phe Al a Trp Phe P ro Al a P ro Gl u Al a Val I P ro Gl u Ser T

601 **GGCTGGAGTGGATCTTCTGAGCCGATACTGTCTGCTGCCCTCAAACGGCAGATGCACGGTTACGATGCGCCCATCTACCAACGTAACCTATCC**
 106 r P leu Gl u Cys Asp Leu P ro Gl u Al a Asp Thr Val Val Val I P ro Ser Asn Trp Gl n Me t Hi s Gl y Tyr Asp Al a P ro I l e Tyr Thr Asn Val Thr Tyr P r

701 **CATTACGGTCAATCCGCCGTTTGTCCACGGAGAATCCGACGGGTTGTTACTCGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACG**
 139 ol l e Thr Val Asn P ro P ro Phe Val I P ro Thr Gl u Asn P ro Thr Gl y Cys Tyr Ser Leu Thr Phe Asn Val Asp Gl u Ser Trp Leu Gl n Gl u Gl y Gl n Thr

801 **CGAATTTTTTGTGGCTTAACCTCGCGTTCATCTGTGGTCAACGGCGCTGGTTCGGTACGGCCAGGACAGTCGTTTCCGCTCTGAATTTGACC**
 173 Arg l l e l l e Phe Asp Gl y Val I Asn Ser Al a Phe Hi s Leu Trp Cys Asn Gl y Ar g Trp Val I Gl y Tyr Gl y Gl n Asp Ser Arg Leu P ro Ser Gl u Phe Asp L

901 **TGAGCGCATTTTTACGCGCCGGAGAAAACCCGCTCGCGGTGATGGTCTGCGTTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAG**
 206 eu Ser Al a Phe Leu Arg Al a Gl y Gl u Asn Arg Leu Al a Val Me t Val I Leu Arg Trp Ser Asp Gl y Ser Tyr Leu Gl u Asp Gl n Asp Me t Trp Arg Me t Se

AatII (1018)
FspI (537)

1001 **CGGCATTTCCGTCAGCTCTGTTGCTGCATAAACCGACTACACAATCAGCGATTTCCATGTTGCCACTCGCTTAAATGATGATTTAGCCGCGCTGTA**
 239 r Gl y l l e Phe Arg Asp Val Ser Leu Leu Hi s Lys P ro Thr Thr Gl n l l e Ser Asp Phe Hi s Val Al a Thr Arg Phe Asn Asp Asp Phe Ser Arg Al a Val

1101 **CTGGAGGCTGAAGTTCAGATGTGCGCGGAGTTGCGTGACTACCTACGGTAACAGTTTCTTATGGCAGGGTGAACCGCAGGTCGCCAGCGCACCGCGC**
 273 Leu Gl u Al a Gl u Val I Gl n Me t Cys Gl y Gl u Leu Arg Asp Tyr Leu Arg Val Thr Val Ser Leu Trp Gl n Gl y Gl u Thr Gl n Val Al a Ser Gl y Thr Al a P

1201 **CTTTCGGCGGTGAAATTTATCGATGAGCGTGGTGGTTATGCCGATCGCGTACACTACGCTGAACGTCGAAAACCCGAAACTGTGGAGCGCCGAAATCCC**
 306 r o Phe Gl y Gl y Gl u l l e l l e Asp Gl u Arg Gl y Gl y Tyr Al a Asp Arg Val Thr Leu Arg Leu Asn Val Gl u Asn P ro Lys Leu Trp Ser Al a Gl u l l e P r

1301 **GAATCTCTATCGTGGTGGTGAACCTGCACACCGCCGACGCGCAGCTGATTGAAGCAGAAGCCTGCGATGTCGGTTCGCGAGGTGCGGATGAAAT**
 339 o Asn Leu Tyr Arg Al a Val Val Gl u Leu Hi s Thr Al a Asp Gl y Thr Leu l l e Gl u Al a Gl u Al a Cys Asp Val Gl y Phe Arg Gl u Val I Arg l l e Gl u Asn

1401 **GGTCTGCTGCTGTAACGGCAAGCCGTTGCTGATTGAGGCGTTAACGTCACGAGCATCATCTCTGCATGTCAGTTCATGGATGAGCAGACGATGG**
 373 Gl y Leu Leu Leu Leu Asn Gl y Lys P ro Leu Leu l l e Arg Gl y Val I Asn Arg Hi s Gl u Hi s Hi s P ro Leu Hi s Gl y Gl n Val Me t Asp Gl u Gl n Thr Me t V

EcoRV (1508)
DrIII (1585)

1501 **TGCAGGATATCTGCTGATGAAGCAGAACAACCTTAAACGCCGTGCGCTGTTGCGATTATCCGAACCATCCGCTGGTACACGCTGTGCGACCGCTACGG**
 406 al Gl n Asp l l e Leu Leu Me t Lys Gl n Asn Asn Phe Asn Al a Val I Arg Cys Ser Hi s Tyr P ro Asn Hi s P ro Leu Trp Tyr Thr Leu Cys Asp Arg Tyr Gl

1601 **CCTGTATGTTGGTGAAGCAATATTGAAACCACGGCATGGTGCCATGAATCGTCTGACCATGATCCGCGCTGGCTACCGGCGATGAGCGAACGC**
 439 y Leu Tyr Val Val Asp Gl u Al a Asn l l e Gl u Thr Hi s Gl y Me t Val I P ro Me t Asn Arg Leu Thr Asp Asp P ro Arg Trp Leu P ro Al a Me t Ser Gl u Arg

BsaBI (1721)

1701 **GTAACGGAATGTTGACGCGATCGTAATCACCCGAGTGTGATCATCTGGTCTGCGGGAATGAATCAGGCCACGGCGCTAATCACGACGCGCTGTATC**
 473 Val Thr Arg Me t Val I Gl n Arg Asp Arg Asn Hi s P ro Ser Val l l e l l e Trp Ser Leu Gl y Asn Gl u Ser Gl y Hi s Gl y Al a Asn Hi s Asp Al a Leu Tyr A

BssHII (1893)

1801 **GCTGGATCAATCTGTGCATCTTCCGCCCGGTGCAGTGAAGGGCGGGAGCCGACACCACCGCCACCGATATTATTTGCCGATGTACGCGCGCT**
 506 r G Trp l l e Lys Ser Val Asp P ro Ser Arg P ro Val I n Tyr Gl u Gl y Gl y Al a Asp Thr Thr Al a Thr Asp l l e l l e Cys P ro Me t Tyr Al a Arg Va

BbsI (1912)

1901 **GGATGAAGACCAGCCCTCCCGCTGTGCCGAAATGGTCCATCAAAAAATGGCTTTCGCTACCTGGAGAGACGCGCCCGCTGATCCTTTGCGAATACGCC**
 539 I Asp Gl u Asp Gl n P ro Phe P ro Al a Val I P ro Lys Trp Ser l l e Lys Lys Trp Leu Ser Leu P ro Gl y Gl u Thr Arg P ro Leu l l e Leu Cys Gl u Tyr Al a

2001 **CACGCGATGGTAACAGTCTTGGCGTTTCGCTAAATACTGGCAGCGCTTTCGTCAGTATCCCGTTTACAGGGCGGCTTCGCTGGGACTGGTGGATC**
 573 Hi s Al a Me t Gl y Asn Ser Leu Gl y Gl y Phe Al a Lys Tyr Trp Gl n Al a Phe Arg Gl n Tyr P ro Arg Leu Gl n Gl y Gl y Phe Val I Trp Asp Trp Val I Asp G

2101 **AGTCGCTGATTAATATGATGAAACCGCAACCCGTTGCTGGCTACGGCGGTGATTTTGGCGATACGCCAAGCAGTCCGCGATTTCTGTATGAACGGTCT**
 606 l n Ser Leu l l e Lys Tyr Asp Gl u Asn Gl y Asn P ro Trp Ser Al a Tyr Gl y Gl y Asp Phe Gl y Asp Thr P ro Asn Asp Arg Gl n Phe Cys Me t Asn Gl y Le

Eco47III (2230)
SacI (2335)

2201 **GGTCTTTCGCGACCGCACGCCGATCCAGCGCTGACGGAAGCAAAACACCAGCAGCAGTTTTTCCAGTCCGTTTATCCGGGCAACCATCGAAGTGACC**
 639 u Val Phe Al a Asp Arg Thr P ro Hi s P ro Al a Leu Thr Gl u Al a Lys Hi s Gl n Gl n Phe Phe Gl n Phe Arg Leu Ser Gl y Gl n Thr l l e Gl u Val Thr

2301 **AGCGAATACCTGTTCCGTCATAGCGATAACGAGCTCCTGCACTGGATGGTGGCGCTGGATGGTAAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTGC**
 673 Ser Gl u Tyr Leu Phe Arg Hi s Ser Asp Asn Gl u Leu Leu Hi s Trp Me t Val I Al a Leu Asp Gl y Lys P ro Leu Al a Ser Gl y Gl u Val I P ro Leu Asp Val I A

2401 **CTCCACAAGGTAACAGTTGATTGAACTGCCTGAACTACCGCAGCCGAGAGCGCCGGCAACTCTGGCTCACAGTACGCGTAGTGAACCGAACCGCGAC**
 706 I a P ro Gl n Gl y Lys Gl n Leu l l e Gl u Leu P ro Gl u Leu P ro Gl n P ro Gl u Ser Al a Gl y Gl n Leu Trp Leu Thr Val I Arg Val I Val I Gl n P ro Asn Al a Th

2501 **CGCATGTCAGAAAGCGGCACATCAGCGCTGGCAGCAGTGGCGTCTGGCGAAAACCTCAGTGTGACGCTCCCGCGGCTCCACGCCATCCCGCAT**
 739 r Al a Trp Ser Gl u Al a Gl y Hi s l l e Ser Al a Trp Gl n Gl n Trp Arg Leu Al a Gl u Asn Leu Ser Val I Thr Leu Al a Ser Hi s Al a l l e P ro Hi s

2601 **CTGACCACCGGAAATGGATTTTGCATCGAGCTGGTAATAAGCGTTGGCAATTTAACCGCAGTCAGGCTTTCTTTCACAGATGTGGATTGGCGATA**
 773 Leu Thr Thr Ser Gl u Me t Asp Phe Cys l l e Gl u Leu Gl y Asn Lys Arg Trp Gl n Phe Asn Arg Gl n Ser Gl y Phe Leu Ser Gl n Me t Trp l l e Gl y Asp L

2701 AAAACAACIGCIGACGCCGICGCGCAICAGIICACCCGIGCACCGCIGGAI AACGACAIIGGCGIAAGIGAAGCGACCCGCAIIGACCCIAACGCCIG
 806▶ysLysGlnLeuLeuThrProLeuArgAspGlnPheThrArgAlaProLeuAspAsnAspIleGlyValSerGluAlaThrArgIleAspProAsnAlaTr
 2801 GGTCGAACGCTGGAAGCGCGGGCCATTACCAGCGCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACACTTGCTGATGCGGTGCTGATTACGACCGCT
 839▶pValGluArgTrpLysAlaAlaGlyHisTyrGlnAlaGluAlaAlaLeuLeuGlnCysThrAlaAspThrLeuAlaAspAlaValLeuIleThrThrAla
 2901 CACGCGTGGCAGCATCAGGGGAAAACCTTATTTATCAGCCGAAAACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGG
 873▶HisAlaTrpGlnHisGlnGlyLysThrLeuPheIleSerArgLysThrTyrArgIleAspGlySerGlyGlnMetAlaIleThrValAspValGluValA
 3001 CGAGCGATACACCGCATCCGGCGCGGATTGGCCTGAACGCGAGCTGGCGCAGGTAGCAGAGCGGGTAACTGGCTCGGATTAGGGCCCAAGAAAAC
 906▶IleSerAspThrProHisProAlaArgIleGlyLeuAsnCysGlnLeuAlaGlnValAlaGluArgValAsnTrpLeuGlyLeuGlyProGlnGluAsnTy
BbsI (3164)
Bst1107I (3157)
BspLUIII (3154) BsiWI (3165)
 3101 TCCCGACCGCCTTACTGCCGCTGTTTTGACCGCTGGGATCTGCCATTGTCAGACATGTATACCCCGTACGCTTCCCGAGCGAAAACGGTCTGCGCTGC
 939▶rProAspArgLeuThrAlaAlaCysPheAspArgTrpAspLeuProLeuSerAspMetTyrThrProTyrValPheProSerGluAsnGlyLeuArgCys
 3201 GGGACGCGCAATTGAATTATGGCCACACCAGTGGCGCGGACTTCCAGTTCAACATCAGCCGCTACAGTCAACAGCAACTGATGGAACCCAGCCATC
 973▶GlyThrArgGluLeuAsnTyrGlyProHisGlnTrpArgGlyAspPheGlnPheAsnIleSerArgTyrSerGlnGlnGlnLeuMetGluThrSerHisA
NdeI (3352)
 3301 GCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAATATCGACGGTTTCCATATGGGGATTGGTGGCGACGACTCTGGAGCCCGTCAGTATCGGGGA
 1006▶rGhisLeuLeuHisAlaGluGluGlyThrTrpLeuAsnIleAspGlyPheHisMetGlyIleGlyGlyAspAspSerTrpSerProSerValSerAlaGlu
NheI (3474)
EcoRI (3468)
 3401 ATTACAGCTGAGCGCCGGTCTGCTACCATTACCAGTTGGTCTGGTGTCAAAAATAATAATCTAGTCGAGAATTCGCTAGCTCGACATGATAAGATACATTG
 1039▶uLeuGlnLeuSerAlaGlyArgTyrHisTyrGlnLeuValTrpCysGlnLys●●●
 3501 ATGAGTTTGGACAAACCACAACCTAGAATGCAGTAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATT

MfeI (3648) DraI (3697)
 3601 GCTTTATTTGTAACCATTATAAGCTGCAATAAACCAAGTTAACAAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTT

DraI (3736)
SwaI (3739)
 3701 AAAGCAAGTAAAACCTCTACAAATGTGGTAGATCCATTTAAATGTTAATTAAGTACGCATGACCAAAATCCCTAACGTGAGTTTTCTGTTCCACTGAGCG
 3801 TCAGACCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGGTAATCTGCTGCTTGCAAAACAAAAAACCCGCTACCAGCGGTGG
 3901 TTTGTTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAAGTGGCTTCCAGCAGAGCGCAGATACCAAACTGTTCTTCTAGTGTAGCCGTAGTT
 4001 AGGCCACCACTTCAAGAAGCTGTAGCACCACCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCTGTCTTACC
 4101 GGGTTGGAAGTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGGGGTGAACGGGGGTTCTGTCACACAGCCAGCTTGGAGCGAACGACCTACACCG
 4201 AACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCGAAGGGAGAAAGCGGACAGGTATCCGGTAAGCGGCAGGGTGGAAACAGGAGA
 4301 CGGCACGAGGGAGCTTCCAGGGGAAACGCTGGTATCTTTATAGTCCTGTCGGGTTTCCACCTCTGACTTGAGCGTCTGATTTTTGTGATGCTCGTCA

BspLUIII (4477)
 4401 GGGGGGCGGAGCCTATGGAACCAACGCGGCGCTTTTTACGGTTCCTGGCCTTTTGTGCTGCTTTTGTCTCACATGTTCTTAATTAATTTTTTCA

AseI (4515) SfiI (4566) MscI (4577)
 4501 AAAGTAGTTGACAATTAATCATCGGCATAGTATATCGGCATAGTATAATACGACTCACTATAGGAGGGCCATCATGGCCAAAGTTGACCAAGTGTGCCA
 4601 GTGCTCACAGCCAGGATGTGGCTGGAGCTGTTGAGTTCTGGACTGACAGGTTGGGGTCTCCAGAGATTTTGTGGAGGATGACTTTGCAGGTGTGGTCA
 10▶ValLeuThrAlaArgAspValAlaGlyAlaValGluPheTrpThrAspArgLeuGlyPheSerArgAspPheValGluAspAspPheAlaGlyValValA
 4701 GAGATGATGTCACCTGTTTCATCTCAGCAGTCCAGGACAGGTTGGTGCCTGACAACACCTGGCTTGGGTGTGGGTGAGAGGACTGGATGAGCTGATGC
 43▶rGAspAspValThrLeuPheIleSerAlaValGlnAspGlnValValProAspAsnThrLeuAlaTrpValTrpValArgGlyLeuAspGlyLeuTyrAl
 4801 TGAGTGGAGTGGGTGCTCCACCAACTTCAGGGATGCCAGTGGCCCTGCCATGACAGAGATTGGAGAGCAGCCCTGGGGGAGAGATTGCCCTGAGA
 76▶AluTrpSerGluValValSerThrAsnPheArgAspAlaSerGlyProAlaMetThrGluIleGlyGlyGluGlnProTrpGlyArgGlyPheAlaLeuArg
SfiI (4975)
EcoO109I (4975)
 4901 GACCCAGCAGGCAACTGTGCTTTGTTGGCAGAGGAGCAGGACTGAGGATAAGAATTGAGTTTCAGAAAAGGGGCGCTGAGTGGCCCTTTTTTCAAC
 110▶AspProAlaGlyAsnCysValHisPheValAlaGluGluGlnAsp●●●
 5001 TTAATTAA