



PvuI (7)
SgfI (6) 1 GGATCTGGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82) EcoNI (96)

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGGCCCGCCCTACCTGAGGCC
PvuII (239) EcoNI (287)

301 GCCATCCACGCGGTTGAGTGCCTGCTGCCCTCCCGCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

NcoI (560)
BstEII (555)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCCCTACCTGAGATCACCGGTCACCATGGCCCCGCGCGCCCGCGCCGAGCTGCCCGC
KasI (535) **AgeI (552)** **BssHII (570)** KasI (581) PvuII (589)
601 GCCGTGCTGGCGCTCTGCGTGTCTGTTCCACTGCAGTGACTCTCCAGTCACTCCATGCACCCAGGAGGATGAGCATCTCGGACGG
1▶ M A P R A R R R R Q L P A
13▶ P L L A L C V L L V P L Q V T L Q V T P P C T Q E R H Y E H L G R

701 TGTTGCAGCAGATGCGAACCAGGAAAGTACCTGTCCTTAAGTGCAGTCTACCTCCGACAGTGTGTCTGCCTGTGGCCCCGATGAGTACTTGGACA
47▶ C C S R C E P G K Y L S S K C T P T S D S V C L P C G P D E Y L D
ScaI (788)

801 CCTGGAATGAAGAAGATAAATGCTTGTGCATAAAGTCTGTGATGCAGGCAAGGCCCTGGTGGCGGTGGATCTGGCAACCACACGGCCCCGCGTCGCTG
80▶ T W N E E D K C L L H K V C D A G K A L V A V D P G N H T A P R R C
BamHI (867)

901 TGCTTGCACGGCTGGCTACCACTGGAAGTCAAGTGCAGTGTGCGGAGGACAGGAGTGTGCACCTGGCTTCGGAGCTCAGCATCCCTTGCAGCTC
113▶ A C T A G Y H W N S D C E C C R R N T E C A P G F G A Q H P L Q L
1001 AACAGGATACGGTGTGCACACCCTGCCTCCTGGGCTTCTTTCAGATGTCTTTTCGTCACAGACAAATGCAAACCTTGGACCAACTGCACCCTCCTTG
147▶ N K D T V C T P C L L G F F S D V F S S T D K C K P W T N C T L L
1101 GAAAGCTAGAAGCACACCAGGGGACAACGGAATCAGATGTGGTCTGCAGCTCTTCCATGACACTGAGGAGACCACCAAGGAGGCCAGGCTTACCTGCC
180▶ G K L E A H Q G T T E S D V V C S S S M T L R R P P K E A Q A Y L P

Eco47III (1284)
AfeI (1284)
1201 CAGTCTCATCGTTCTGCTCCTTCTCATCTCTGTGGTAGTAGTGGCTGCCATCATCTTCGGCGTTTACTACAGGAAGGGAGGAAAGCGCTGACAGCTAAT
213▶ S L I V L L L F I S V V V V A A I I F G V Y Y R K G G K A L T A N
1301 TTGTGGAATTGGGTCAATGATGCTTGCAGTAGTCTAAGTGGAAATAAGGAGTCTCAGGGGACCGTTGTGCTGTTCCCACTCGGCAACTCCAGTACAGC
247▶ L W N W V N D A C S S L S G N K E S S G D R C A G S H S A T S S Q

BbsI (1453) **Bsp120I (1495)**
1401 AAGAAGTGTGTAAGGTATCTTACTAATGACTCGGGAGGAGAAGATGGTTCAGAAAGCAGGCTGTGGGCTGTGTGCGGCAGGTGGGCC
280▶ Q E V C E G I L L M T R E E K M V P E D G A G V C G G P V C A A G G P

XhoI (1566) **RsrII (1598)**
1501 CTGGGCAGAAAGTCAAGATTCTAGGACGTTCACTGGTCAAGGAGGTTGAGACGCAAGGAGACCTCTCGAGGAAGATTTCCACAGAGGATGAGTACAGC
313▶ W A E V R D S R T F T L V S E V E T Q G D L S R K I P T E D E Y T
1601 GACCGCCCTCGAGCCTTCGACTGGTTCAGTCTCTAATCCAGCAGGGAAGCAAATCTATACCCCACTCCAGGAGCCCTGGAAGTGGGGGAGAAGC
347▶ D R P S Q P S T G S L L L I Q Q G S K S I P P F Q E P L V G E N
1701 ACAGTTTAAAGCCAGTGTTCACCGGGACTGAAAGCAGGTTGATTCTGAGGGCTGTGACTTCACTGAGCCTCCGAGCAGAAGTACTTATGCCCGTGT
380▶ D S L S Q C F T G T E S T V D S E G C D F T E P P S R T D S M P V S
1801 CCCTGAAAAGCACCTGACAAAAGAAATAGAAGTGTGACAGTGGCTCCCTCCCTGGTGGTCAAGTCAACTCAACAGATGGCTACACAGGACAGTGGGAACCT
413▶ P E K H L T K E I E G D S C L P W V V S S N S T D G Y T G S G N T

XmnI (1915) **SmaI (1927)**
1901 CCTGGGGAGGACCATGAACCTTTCCAGGGTCCCTGAAATGTGGACCATTGCCCCAGTGTGCCTACAGCATGGGCTTTCCAGTGAAGCAGCAGCCAGCA
447▶ P G E D H E P F P G S L K C G P L P Q C A Y S M G F P S E A A A S
2001 TGGCAGAGGCGGGAGTACGGCCAGGACAGGGCTGATGAGAAGGGAGCCTCAGGGTCCGGGAGCTCCCACTGACCACTGCCTCTGGGAACGT
480▶ M A E A G V R P Q D R A D E K G A S G S G S S P S D Q P P A S G N V

XmaI (2199) **Bsp120I (2196)**
2101 GACTGGAACAGTAACCTCCACGTTCTCTAGCGGGCAGGTGATGAAGTCAAGGGTGCATCATCGTGGTGTATGTCAGCCAGACCTCGCAGGAGGGC
513▶ T G N S N S T F I S S G Q V M N F K G D I I V V Y V S Q T S Q E G
2201 CCGGGTTCGAGAGCCCGAGTCCGAGCCCGTGGGCGCCTGTGAGGAGGAGACGCTGGCACACAGAGACTCCTTTGCGGGCACCGCCCGCGCTCC
547▶ P G S A E P E S E P V G R P V Q E E T L A H R D S F A G T A P R F

EagI (2368)
2301 CCGACGTCTGTGCCACCGGGGCTGGGCTGCAGGAGCAGGGGGACCCCGCAGAAGGACGGGACATCGCGCCGGTGCAGGAGCAGGGTGGGGCGCAGAC
580▶ P D V C A T G A G L Q E Q G A P R Q K D G T S R P V Q E Q G G A Q T

MscI (2478)
BspEI (2419) **NheI (2472)**
2401 TTAACCTACACCGGGTCCGGACAATGTGCAGAATGACCTCACCTTCTGTCTGCCTGGTGCAGGGGCTAGCTGGCCAGACATGATAAGATACA
613▶ S L H T Q G S G Q C A E •
2501 TTGATGAGTTGGACAAACCACTAGAATGCAGTAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTG

HpaI (2610) MfeI (2621)
 2601 CAATAAACAAAGTTAAACAACAACAAATTGCATTCATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGT

EcoRI (2706)
 2701 GGTATGGAATTCTAAAATACAGCATAGCAAACTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGG

2801 GGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTGCTCTTCATTTCC

SspI (2945) SwaI (2959)
 2901 TTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATT

3001 AGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAA

3101 AGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTTCATCTCAATGAGCACAAAGCAG

141 • N R T Y K L P I L E E I T T K V L K G N M E I L V F C

BstXI (3249)
 3201 TCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCA

112 D P A Y D S I L E R C M G C P S V V R I S R D V E D S Y P H R V A V

StuI (3384)
 3301 CAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCTGCCAATGTAGGCCTCAATGTGGAC

79 I T D F D K Q G N S V A S G I A I A E A C V T V R G I Y A E I H V

3401 AGCAGAGATGATCTCCAGTCTTGGTCTGATGGCCCGCCGACATGGTGTGTTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACC

46 A S I I E G T K T R I A A G V H K N D E Y L M T I K E T A V E V

BspHI (3534)
BbsI (3530)
XmnI (3526)
AseI (3592)
 3501 AGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTG

12 L E L D Q Q S I N F T K M

3601 TCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTGCG

SpeI (3747)
 3701 TCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCCATGACGTCAATGGGGTGAGACTTGAAATCC

SnaBI (3875)
 3801 CCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGA

NdeI (3980)
 3901 AAGTCCATAAAGTTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCAATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTA

4001 CTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAA

PaeI (4166)
SdaI (4158) **BspLU11I (4176)**
 4101 TGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAA

4201 AGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAATAATCGACGCTCAAGTCAGAGGTGGCG

4301 AAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCC

4401 TTTCTCCCTTCGGGAAGCGTGGCGCTTTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGTTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAAC

4501 CCCCCTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAAACCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAA

4601 CAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCT

4701 CTGCTGAAGCCAGTTACCTTCGGAAAAAGATTGGTAGCTCTTGATCCGGCAAACAACACCCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGA

4801 TTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTTCAT

EagI (4926)
PaeI (4906) SwaI (4915) **NotI (4925)**
 4901 GGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGTAACTAACATACG

5001 CTCTCCATCAAAAACAAACGAAACAAACAAACTAGCAAATAGGCTGTCCCGAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA