



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA MfeI (82)

101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGTGAAGCTTCGAGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC

301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTAAAGTCAAGTGCAGGTCGAGCC

NgoMIV (441)
NgoMI (441)
NaeI (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

NcoI (560)
BstEII (555) **KasI (535)** **AgeI (552)** **XcmI (566)**
501 TCTGTTCTGCGCGCTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTACCATTGGCCAGCAGCGGCATGGCTGACAGCGCCAACCACCT
1▶ M A S S G M A D S A N H L

XmaI (623) **SexAI (644)**
601 GCCCTTCTTTTTCGGCAACATCACCCGGGAGGAGGCAGAAAGATTACCTGGTCCAGGGGGGCATGAGTGTGGGCTTTATTTGCTGCGCCAGAGCCGCAAC
13▶ P F F F G N I T R E E A E D Y L V Q G G M S D G L Y L L R Q S R N

SgrAI (789)
701 TACCTGGTGGCTTCCGCTGTCCGTGGCCACGGGAGGACACCACTACACCATCGAGCGGGAGCTGAATGGCACCTACGCCATCGCCGGTGGCA
47▶ Y L G G F A L S V A H G R K A H H Y T I E R E L N G T Y A I A G G

XcmI (840)
801 GGACCCATGCCAGCCCCGCGACCTCTGCCACTACCCTCCAGGAGTCTGATGGCTGGTCTGCCTCCTCAAGAAGCCCTTCAACCGCCCCAAGGGT
80▶ R T H A S P A D L C H Y H S Q E S D G L V C L L K K P F N R P Q G V

Bsp120I (913)
901 GCAGCCCAAGACTGGGCCCTTTGAGGATTTGAAGGAAAACCTCATCAGGAATATGTGAAGCAGACATGGAACCTGCAGGGTCAAGGCTCTGGAGCAGGCC
113▶ Q P K T G P F E D L K E N L I R E Y V K Q T W N L Q G Q A L E Q A

NcoI (1068)
1001 ATCATCAGTCAGAAGCCTCAGCTGGAGAAGCTGATCGCTACCACAGCCATGAAAAATGCCTTGGTTCCATGGAAAAATCTCTCGGGAAGAATCTGAGC
147▶ I I S Q K P Q L E K L I A T T A H E K M P W F H G K I S R E E S E

1101 AAATTGCTCTGATAGGATCAAAGACAAATGGAAAGTTCCTGATCCGAGCCAGAGACAACAACGGCTCTACGCCTGTGCCTGCTGCAGAAAGGGAAGGT
180▶ Q I V L I G S K T N G K F L I R A R D N N G S Y A L C L L H E G K V

1201 GCTGCACATCGCATCGACAAGACAGAGCAAGGAAAGCTCCATCCCGAGGGAAAGAGTTTCGACACGCTGCGAGCTAGTCGAGCATTATCTTAT
213▶ L H Y R I D K D K T G K L S I P E G K K F D T L W Q L V E H Y S Y

1301 AAAGCAGATGGTTTGTAAAGAGTCTTACTGTCCCATGTCAAAAAATCGGCACACAGGAAATGTTAATTTGGAGGCGCTCCACAACCTCCAGTTCC
247▶ K A D G L L R V L T V P C Q K I G T Q G N V N F G G R P Q L P G S

Tth111I (1407)
1401 ATCCTGCGACTTGGTCAGCGGGTGAATAATCTCAAGAATCAAATCATACTCCTTCCCAAAGCCTGGCCACAGAAAAGTCTCCCTGCCAAGGGAACCG
280▶ H P A T W S A G G I I S R I K S Y S F P K P G H R K S S P A Q G N R

ScaI (1507) **NcoI (1586)**
1501 GCAAGAGTACTGTGTCATTCAATCCGTATGAGCCAGAAGTTCACCCCTGGGCTGCAGACAAAGGCCCCAGAGAGAAGCCCTACCCATGGACACAGAG
313▶ Q E S T V S F N P Y E P E L A P W A A D K G P Q R E A L P M D T E

1601 GTGTACGAGACCCCTACGCGGACCCGAGGAGATCAGGCCCAAGGAGTTTACTGGACCGAAAGCTGCTGACGCTGGAAGACAAAGAACTGGGCTCTG
347▶ V Y E S P Y A D P E E I R P K E V Y L D R K L L T L E D K E L G S

1701 GTAATTTTGAAGTGTGAAAAAGGGCTACTACCAAATGAAAAAGTTGTGAAAACCGTGGCTGTGAAAATACTGAAAAACGAGCCAAATGACCCCGCTCT
380▶ G N F G T V K K G Y Y Q M K K V V K T V A V K I L K N E A N D P A L

1801 TAAAGATGAGTTATTAGCAGAAGCAAATGTCATGCAGCAGCTGGACAACCCGTACATCGTGGGATGATCGGGATATCGGAGGCCGAGTCTGGATGCTG
413▶ K D E L L A E A N V M Q Q L D N P Y I V R M I G I C E A E S W M L

BspLUI1I (1953) **NcoI (1997)**
1901 GTTATGGAGATGGCAGAAGTGGTCCCTCAATAAGTATTTGCAGCAGAACAGACATGCAAGGATAAGAACATCATAGAAGTGGTTCATCAGTTTCCA
447▶ V M E M A E L G P L N K Y L Q Q N R H V K D K N I I E L V H Q V S

BglII (2040)
2001 TGGGCATGAAGTACTTGGAGGAGAGCAATTTTGTGCACAGAGATCTGGCTGCAAGAAATGTGTTGCTAGTTACCAACATTATGCCAAGATCAGTGATTT
480▶ M G M K Y L E E S N F V H R D L A A R N V L L V T Q H Y A K I S D F

ScaI (2009) **ApaLI (2032)**
2101 CGGACTCTCAAAGCACTGCGTGTGATGAAAACTACTACAAGGCCAGCCATGGAAAGTGGCCTGTCAAGTGGTACGCTCCGGAATGCATCAACTAC
513▶ G L S K A L R A D E N Y Y K A Q T H G K W P V K W Y A P E C I N Y

NcoI (2151) **BstXI (2145)** **BspEI (2181)**
2201 TACAAGTCTCCAGCAAAAGCGATGCTGGAGCTTTGGAGTGTGATGGGAAGCATCTCCTATGGGCAGAAGCCATATCGAGGATGAAAGGAAAGT
547▶ Y K F S S K S D V W S F G V L M W E A F S Y G Q K P Y R G M K G S

BspHI (2372)
2301 AAGTACCCTATGTTAGAGAAAGGAGAGCGGATGGGGTGCCTGCAGGGTGTCCAAGAGAGATGTACGATCTCATGAATCTGTGCTGGACATACGATGT
580▶ E V T A M L E K G E R M G C P A G C P R E M Y D L M N L C W T Y D V

FspI (2438)
2401 GAAAAACAGGCCGATTCCGAGCAGTGAAGTGCAGGCTGCGCAATTACTACTATGACGTGGTGAAGTAAACCGCTCCCGCACCTGTCGGTGGCTGCCTTT
613▶ E N R P G F A A V E L R L R N Y Y Y D V V N •

NheI (2503)
 2501 GATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATG

HpaI (2641) **MfeI (2652)**
 2601 CTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAACAAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGT

EcoRI (2737)
 2701 TTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTT

2801 TCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTAT

SspI (2976) **SwaI (2990)**
 2901 TTTCCAAGGTTTGAAGTACTCTTCATTTCTTTATGTTTAAATGCACTGACCTCCACATTCCTTTTATAGTAAAAATTTCAGAAAATAATTTAAATAC

3001 ATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAA

3101 GGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAG

141 • N R T Y K L P I L E E I T T K V L
SacI (3251) **BstXI (3280)**
 3201 CTTGCCATTCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCC

123 K G N M E I L V F C D P A Y D S I L E R C M G C P S V V R I S R D
 3301 ACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCAGACAG

89 V E D S Y P H R V A V I T D F D K Q G N S V A S G I A I A E A C V T
StuI (3415)
Eco147I (3415)
 3401 TGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTGCTTGTGTCTCATAGAG

56 V R G I Y A E I H V A S I I E G T K T R I A A G V H H K N D E Y L
BspHI (3565)
 3501 CATGGTATCTTCTCAGTGGCGACTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGCCCTCTATAGTGAGTCGTATTATAC

23 M T I K E T A V E V L E L D Q Q S I N F T K M
VspI (3623)
AseI (3623)
 3601 TATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGAC

SpeI (3778)
 3700 CTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCC

3799 ATTGACGTC AATGGGGTGGAGACTTGAAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCG

SnaBI (3906)
Eco105I (3906)
 3899 ATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGCGGGCCATTTACCGTCATTGACGTCAATAG

NdeI (4011)
 3999 GGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGT

4099 TACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCTGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCCTGCAGG

PacI (4197) **BspLU11I (4207)**
 4198 TTAA TTAAGAACATGTGAGCAAAAGGCCAGCAAAAAGGCCAGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAG

4297 CATCACA AAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCCTG

4397 TTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTGA

ApaLI (4521)
 4497 GGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTGAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAAGTGGTGCCTAACTACG

4597 CACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGCCTAACTACG

4697 GCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGC

4797 TGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAG

EagI (4957)
PacI (4937) **SwaI (4946)** **NotI (4956)**
 4897 TGGAACGAAAACCTACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAAATATCTTTATTTTATTACATCTGTG

4997 TGTGTTTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAAATAGGCTGTCCCGAGTCAAGTGCA

5097 GGTGCCAGAACATTTCTCTATCGAA