



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

101 GAGAAGGTGGCGGGGTAACCTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

NgoMIV (441)

501 TCTGTTTGTGGCGGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGCTCCGGACCATGGAGTCAAGCAAAAAGATGGATGCTGCTGGCA NcoI (564)
1 M E S S K K M D A A G BspEI (558)

601 CACTGCAGCCTAACCCACCCTAAAGCTGCAGCCTGATCGCGGCGCAGGGTCCGTGCTCGTGGCCGAGCAAGGAGGCTACAAGGAGAAGTTTGTGAAGAC 12 T L Q P N P P L K L Q P D R G A G S V L V P E Q G G Y K E K F V K T

701 GGTGAAGACAAGTACAAGTGGGAGAAGTCCCGCTGGTGTGTGCAACCCGAAGCAGACGGAGTGTGGCCACCGTTTCTGC GAGAGCTGCATGGCCGCC MscI (766)
45 V E D K Y K C E K C R L V L C N P K Q T E C G H R F C E S C M A A

DraIII (826)
BstAPI (825)
801 CTGCTGAGCTCCTCCAGTCCAAAATGCACAGCGTGCCAAAGAAAGCATCATCAAAGACAAGGTGTTAAAGGATAATTGCTGCAAGAGAGATTCTGGCCC 79 L L S S S S P K C T A C Q E S I I K D K V F K D N C C K R E I L A

901 TTCAGGTTACTGTCCGAATGAAGGCAGAGGTTGTGGCGAGCAGCTGACTCTGGGACATCTGCTGGTGCACCTAAAAAATGAATGTCAGTTTGAGGAAC 112 L Q V Y C R N E G R G C A E Q L T L G H L L V H L K N E C Q F E E L

ScaI (1030) **StuI (1065)** **BstAPI (1092)**
1001 TCCTGTCTGCGTGCCGACTGCAAAGAAAAAGTACTGAGAAAAGACTTGGCGGATCACGTGGAAAAGGCTGTAATACCGGAGGCCACGTGCAGTCAC 145 P C L R A D C K E K V L R K D L R D H V E K A C K Y R E A T C S H

1101 TGCAAGAGCCAAGTGCCCATGATCAAATGCAGAAACATGAAGACACAGATTGTCCTGTGTGGTGGTATCCTGCCCTCAAAGTGCAGCGTTTACAGACTC 179 C K S Q V P M I K L Q K H E D T D C P C V V S C P H K C S V Q T

Eco47III (1266)
1201 TTCTAAGGAGTGAGTTGAGTGCACACTTGTCCGAGTGTGTCAATGCCCCAGCACCTGTAGTTTTAAGCGCTATGGCTGCGTTTTTTCAGGGTACAACCA 212 L L R S E L S A H L S E C V N A P S T C S F K R Y G C V F Q G T N Q

SfiI (1309) **SacII (1326)**
1301 GCAGATCAAGGCCCATGAGGCCAGCTCCGCGGTACAGCAGCTGAACTGCTGAAGGAGTGGAGCAACTCCCTGGAGAAGAAGGTTTCCCTGCTGCAGAAT 245 Q I K A H E A S S A V Q H V N L L K E W S N S L E K K V S L L Q N

BglII (1443)
1401 GAAAGTGTGAGAAAAACAAGAGCATCCAAGCCTGCACAACAGATCTGCAGCTTTGAGATCGAGATTGAGAGGCAGAAAGGAGATGCTCCGAAACAACG 279 E S V E K N K S I Q S L H N Q I C S F E I E I E R Q K E M L R N N

1501 AGTCCAAGATCCTTACCTGCAGCGGTAATCGACAGCCAAGCAGAGAACTGAAAGAACTGGACAAGGAGATCCGTCCCTTCCGGCAGAACTGGGAGGA 312 E S K I L H L Q R V I D S Q A E K L K E L D K E I R P F R Q N W E E

SapI (1612)
1601 AGCGGACAGCATGAAGAGCAGTGTGGAGTCCCTCCAGAACCAGTACTGAGCTGGAGAGCGTAGACAAAAGTGGGGGCAGGCGGCTCGCAACACAGGC 345 A D S M K S S V E S L Q N R V T E L E S V D K S A G Q A A R N T G

NgoMIV (1719) **BspHI (1744)** **XhoI (1787)**
1701 TTGCTGGAGTCCCAGCTGAGCCGGCATGACCAGATGTTGAGTGTTCATGACATCCGCTTGGCCGACATGGACCTGCGGTTCCAGTCTCGAGACCGCCA 379 L L E S Q L S R H D Q M L S V H D I R L A D M D L L R F Q V L E T A

Tth11I (1870)
1801 GCTACAACGGGTGCTGATCTGGAAGATCCGTGACTACAAGCGCCGGAAGCAGGAGGCGTATGGGGAAGACCTGTCTCTACAGCCAGCCTTTCTA 412 S Y N G V L I W K I R D Y K R R K Q E A V M G K T L S L Y S Q P F Y

1901 CACAGGTTATTTGGCTATAAGATGTGTGCCAGGTCTACCTGAATGGGACGGAATGGGAAAGGGACACACTTGTCTGCTTTTTTGTATTATGCGT 445 T G Y F G Y K M C A R V Y L N G D G M G K G T H L S L F F V I M R

NcoI (2021)
2001 GGAGAATATGATGCTCTGTTGCCATGGCCGTTCAAGCAGAAAAGTACACTTATGCTGATGGATCAGGGGTCTCTCGCCGTCATCTGGGAGATGCGTTCA 479 G E Y D A L L P W P F K Q K V T L M L M D Q G S S R R H L G D A F

BsaBI (2143) **XbaI (2188)**
2101 AGCCCACCCCAACAGCAGCAGCTTCAAGAAACCCACCGAGAGATGAATATCGCCTCTGGCTGCCAGTCTTTGTCCGCCAAACTGTTCTAGAGAACC 512 K P D P N S S S F K K P T G E M N I A S G C P V F V A Q T V L E N G

MscI (2298)
NheI (2292)
2201 GACGTATATTAAGATGATAACAATCTTTATTAAGGTCATAGTGGATACCTCGGATCTGCCTGACCCTGACAAGAAAGCAGGGCGGTGGATTGCTAGCTG 545 T Y I K D D T I F I K V I V D T S D L P D P •

2301 GCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTA

HpaI (2430) **MfeI (2441)**
2401 TTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTATTTATGTTTCAGGTTTCAGGGGAGGTGTGGAGGTTTTTAAAGCA

EcoRI (2526)
2501 AGTAAAACCTCTACAATGTGGTATGGAATCTAAAATACAGCATAGCAAACCTTAACTCCAAATCAAGCCTACTTGAATCCTTTTCTGAGGGATG

2601 AATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGT

2701 ^{SapI (2708)} TTGAACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAAT ^{SspI (2765)} ^{SwaI (2779)}

2801 GAAAAATAATGTTTTTATTAGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAA

2901 TAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCA
 141 • N R T Y K L P I L E E I T T K V L K G N M

3001 TCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGA
 119 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 V E D S ^{BstXI (3069)}

3101 GTAGGGTGCTGACAGCCAAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCAGACAGTGCACCTGCCA
 86 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 V R G

3201 ^{StuI (3204)} ATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCT
 52 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 M T I K

3301 TCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATAT
 19 E T A V E V L E L D Q Q S I N F T K M ^{XmnI (3346)}

3401 ^{AseI (3412)} ACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAAACGAGCTCTGCTTATATAGACCTCCCACCGTAC

3501 ^{SpeI (3567)} ACGCCTACGCCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCAATG

3601 GGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGT ^{SnaBI (3695)}

3701 AGATGTA CTGCCAAGTAGGAAAGTCCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGG

3801 ^{NdeI (3800)} CATATGATACTTGTACTGCTCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACA

3901 TACGTATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAAATTAAGAACAT ^{PacI (3986)} ^{SdaI (3978)} ^{BspLU11I}

4001 GTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGA

4101 CGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCTGCCGC

4201 TTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCAA

4301 GCTGGGCTGTGTGCACGAACCCCCGTTAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCA

4401 CTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAA

4501 CAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAACAAACCACCGCTGGTAGCGGTGGTTT

4601 TTTTGTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGGAACGAAAACTCA

4701 ^{PacI (4726)} ^{SwaI (4735)} ^{EagI (4746)} ^{NotI (4745)} CGTTAAGGGATTTTGGTCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTG

4801 TGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAGGTGCCAGAACATTT

4901 CTCTATCGAA