



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

101 GAGAAAGTGGCGGGGTAACGGAAAGTGTGTCTGTACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCTCTAGGTAAGTTAAAGTCAAGTGCAGACC

NgoMIV (441)
401 GGGCCTTTGTCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGTTGCTCAACTCTACGTTCTTTGTTTCGTTT

NcoI (560)
BstEII (555)
AgeI (552) **EcoO109I (565)** **BstXI (590)**
501 TCTGTTTGGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTACCATTGGGGCCTTGCCAGAGCCCTGCCGTCCATACTGCT
1▶ M G A L A R A L P S I L L

601 GGCATTGCTGCTTACGTCCACCCAGAGGCTCTGGGTGCAACCCGGCTTGGTGCAGGATCACCGACAAGGGACTGCAGTATGCGGCCAGGAGGGG
13▶ A L L L T S T P E A L G A N P G L V A R I T D K G L Q Y A A Q E G

BamHI (761) **EagI (774)**
701 CTATTGGCTCTGCAGAGTGAAGTGTCTCAGGATCACGCTGCTGACTTCCCGGGACTTGAGGATCCCCACGTCGGCGTGGGCGCTATGAGTCCACA
47▶ L L A L Q S E L L R I T L P D F T G D L R I P H V G R G R Y E F H

801 GCCTGAACATCCACAGCTGTGAGCTGCTTCACTCTGCGCTGAGGCTGTCCCTGGCCAAAGGCTGAGTCTCAGCATCTCCGACTCCTCCATCCGGGTCCA
80▶ S L N I H S C E L L H S A L R P V P G Q G L S L S I S D S S I R V Q

FspI (914)
901 GGGCAGGTGGAAGTGGCGAAGTCACTTCTCAAACACAGGGCTCCTTTGATGTCAAGGGCATCAGCATTTCGGTCAACCTCCTGTTGGGCAGC
113▶ G R W K V R K S F F K L Q G S F D V S V K G I S I S V N L L L G S

BspLU11I (1067)
1001 GAGTCTCCGGGAGGCCACAGTACTGCCTCCAGCTGCAGCAGTGCATCGCTGACGTGGAGGTGGACATGTCGGGAGACTTGGGGTGGCTGTTGAACC
147▶ E S S G R P T V T A S S C S S D I A D V E V D M S G D L G W L L N

ScaI (1134) **BstAPI (1145)**
1101 TCTTCCACAACCAGATTGAGTCCAAGTCCAGAAAGTACTGGAGAGCAGGATTTGCGAAATGATCCAGAAATCGGTGCTCCTCCGATCTACAGCCTTATCT
180▶ L F H N Q I E S K F Q K V L E S R I C E M I Q K S V S S D L Q P Y L

1201 CCAAACCTGCGCAGTTAACAGAGATTGACAGTTTCGCCGACATTGATTATAGCTTAGTGAAGCCCTCGGGCAACAGCCAGATGCTGGAGGTGATG
213▶ Q T L P V T T E I D S F A D I D Y S L V E A P R A T A Q M L E V M

BspHI (1358) **Bsu36I (1369)**
1301 TTTAAGGGTGAATCTTTCATCGTAACCACCGTCTCCAGTTACCTCCTTGGTGCAGTCAAGCCTTCCAGGAACAACAATAAGTCTACTTTG
247▶ F K G E I F H R N H R S P V T L L A A V M S L P E E H N K M V Y F

BspHI (1440) **EcoRV (1451)**
1401 CCATCTCGGATTATGTCTTCAACACGGCCAGCCTGTTTATCATGAGGAAGGATATCTGAACTTCTCCATCACAGATGACATGATACCGCTGACTCTAA
280▶ A I S D Y V F N T A S L V Y H E E G Y L N F S I T D D M I P P D S N

1501 TATCCGACTGACCAAGTCTTCCGACCCTTCTGCCACGGTTAGCCAGGCTTACCCCAACATGAACCTGGAACCTCAGGGATCAGTGCCTCTGCT
313▶ I R L T T K S F R P F V P R L A R L Y P N M N L E L Q G S V P S A

BsrBI (1600)
1601 CCGTCTGAACTTCAAGCCTGGGAATCTGTCTGTGGACCCCTATATGGAGATAGATGCCTTTGTCTCCTGCCCAGCTCCAGCAAGGAGCCTGTCTCC
347▶ P L L N F S P G N L S V D P Y M E I D A F V L L P S S K E P V F

1701 GGCTCAGTGTGCCACTAATGTGTCGCCACCTTGACCTTCAATACCAGCAAGATCACGGTTCCTGAAGCCAGGAAAGGTTAAAGTGAAGTGAAGA
380▶ R L S V A T N V S A T L T F N T S K I T G F L K P G K V K V E L K E

Eco47III (1836)
AfeI (1836)
1801 ATCCAAAGTTGACTATTCAATGCAGAGCTGTTGGAAGCGCTCCTCAACTATTACATCCTTAACACCTTCTACCCCAAGTTCATGATAAGTTGGCCGAA
413▶ S K V G L F N A E L L E A L L N Y Y I L N T F Y P K F N D K L A E

1901 GGCTTCCCTTCTCTGCTGAAGCGTGTTCAGCTCTACGACCTTGGGCTGCAGATCCATAAGGACTTCTGTTCTTGGGTGCCAATGTCCAATACATGA
447▶ G F P L P L L K R V Q L Y D L G L Q I H K D F L F L G A N V Q Y M

HindIII (2022) **NheI (2042)**
2001 GAGTTTGAAGACAAGAAAGATGAAGCTTGGAGTGCAGCTGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAA
480▶ R V •

HpaI (2180) **MfeI (2191)**
2101 TGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACATTGCAT

EcoRI (2276)
2201 TCATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAA
2301 AACTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGC

SapI (2458)
2401 AGCCTCACCTTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGTTTGAAGTACTCTTCATTTCTTTATGTTTTAAATGCAGTACCTCCACA

SspI (2515) **SwaI (2529)** **EcoO109I (2590)**
2501 TTCCCTTTTGTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCA
2601 TAATATCCCCAGTTTAGTGTGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTCTGGTGTA
141 • N R T Y

2701 CTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTG
136 K L P I L E E I T T K V L K G N M E I L V F C D P A Y D S I L E R SacI (2790)

2801 CACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGC
102 C M G C P S V V R I S R D V E D S Y P H R V A V I T D F D K Q G N S BstXI (2819)

2901 TCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCCCTGCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCT
69 V A S G I A I A E A C V T V R G I Y A E I H V A S I I E G T K T R

3001 GATGGCCGCCCGACATGGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAG
36 I A A G V H H K N D E Y L M T I K E T A V E V L E L D Q Q S I N F AseI (3162)

3101 GTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTT
24 T K M SacI (3219)

3201 ATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTG
SpeI (3317)

3301 GAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATT
SnaBI (3445)

3401 GATGTAAGTCCAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAA
NdeI (3550)

3501 TGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTAAGTCCCAAGTGGGCGAGTTTACCGTAAATACT
3601 CCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGGTCTTGGGCGGTGAGCCAGG

3701 CGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAAGAACATGTGAGCAAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGC
SdaI (3728) BspLU11I (3746)

3801 TGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGC
3901 GTTCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCT

4001 CATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTAT
ApaLI (4060)

4101 CCGGTAAGTATCGTCTTGTAGTCCAAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGG
4201 TGCTACAGAGTCTTGAAGTGGTGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGA
4301 GTTGGTAGCTCTTGTATCCGCAAAACCAACACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAG

4401 ATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGGAACGAAAACCTACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGC
EagI (4496)
PacI (4476) SmaI (4485) NotI (4495)

4501 CGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACA
4601 AACTAGCAAAATAGGCTGTCCCAAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA