



PvuI (7)
SgfI (6) 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82) **EcoNI (96)**
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **Bsu36I (291)**
EcoNI (287) 201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCTGAAGTGCCTCCGCGCTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

BspHI (560)
AgeI (552) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTCATCATGAACAAGCACCCCTGGAAGAACCAGCTGAGTGAAT
1 M N K H P W K N Q L S E M
601 GGTGCAGCCAGTGGTGGCCAGCAGAGGACCAGGACATGCTGGTGAAGAATCTTCTCTGGGGAAGCCTGCAATGCTACATCTGCCTTCAGAGCAGGGT
13 V Q P S G G P A E D Q D M L G E E S S L G K P A M L H L P S E Q G

Eco47III (716) 701 ACTCTGAGACCCCTCCAGCGCTGCCTGGAAGAGAATCAAGAGCTCCGAGACGCTATCCGGCAGAGCAATCAGATGCTGAGGGAACGCTGTGAGGAGCTGC
47 T P E T L Q R C L E E N Q E L R D A I R Q S N Q M L R E R C E E L

XmnI (828) 801 TGCATTTCCAGGTGAGCCAGCGGAGGAGAAGGAGTTCCCTTATGTGCAAATTCAGGAAGCCGGAAGCTGGTGGAGAGACTGAGCTTGAGAAGCTTGA
80 L H F Q V S Q R E E K E F L M C K F Q E A R K L V E R L S L E K L D
901 TCTTCGGAGTCAGAGGGAACAGGCCTTAAAGGAGTTGGAGCAACTGAAGAAATGCAACAGCAGATGGCTGAGGACAAGGCCTCTGTGAAAGCTCAGGTG
113 L R S Q R E Q A L K E L E Q L K K C Q Q Q M A E D K A S V K A Q V
1001 ACATCATTGCTCGGAGAAGTCCAGGAGAGCCAGAGCCGTTTGGAGGCTGCCACCAAGGATCGGCAAGCTTTAGAGGGAAGGATTTCAGCAGTTAGTGAGC
147 T S L L G E L Q E S Q S R L E A A T K D R Q A L E G R I R A V S E

BsrBI (1120) 1101 AGGTCAGACAGCTGGAGAGTGGAGGAGGTGCTACAGCAGCAGCACAGCTCCAGGTGGACCAGCTGCGTATGCAGAACCAGAGCCTGGAGGCTGCCTT
180 Q V R Q L E S E R E V L Q Q Q H S V Q V D Q L R M Q N Q S V E A A L

BsrBI (1207) **SapI (1269)** 1201 GCGAATGGAGCGGCAGGTGCTTCAGAGGAGAAGCGGAAGCTGGCTCAGTTGCAGGCAGCCTATCACCAAGCTCTTCCAAGACTACGACAGCCACATTAAG
213 R M E R Q A A S E E K R K L A Q L Q A A Y H Q L F Q D Y D S H I K

SphI (1310) **BglIII (1323)** **EcoO109I (1355)** 1301 AGCAGCAAGGGATGCAGCTGGAAGATCTGAGGCAACAGCTCCAGCAAGCTGAGGAGGCCCTGGTAGCCAAACAGGAATTGATTGATAAGCTGAAAGAGG
247 S S K G M Q L E D L R Q Q L Q Q A E E A L V A K Q E L I D K L K E

EcoRV (1456) **XmaI (1493)** 1401 AGGCTGAGCAGCACAAGATTGTGATGGAGACTGTGCCAGTCTTGAAGGCCAGCGGATATCTACAAGCTGACTTCCAAGCTGAGAGGCATGCCCGGA
280 E A E Q H K I V M E T V P V L K A Q A D I Y K A D F Q A E R H A R E

PstI (1546) 1501 GAAGCTGGTGGAGAAGAAGGAGTATTTGCAGGAGCAGCTGGAGCAGCTGCAGCGCGAGTTCAACAAGCTGAAAGTTGGCTGCCATGAGTCAGCCAGGATT
313 K L V E K K E Y L Q E Q L E Q L Q R E F N K L K V G C H E S A R I
1601 GAGGATATGAGGAAGCGGCATGTAGAGACTCCCGAGCTCCTTACTCCCTGCTCCAGCTCACCCTCTTTTCAATTTGGCCTTGTTCAACCAGCGGAGGA
347 E D M R K R H V E T P Q P P L L P A P A H H S F H L A L S N Q R R

BspLU11I (1776) 1701 GCCCTCTGAAGAACCCTCTGACTTCTGTTGTCCGAAGTGCCAGTATCAGGCTCCTGATATGGACTCTACAGATACATGTCATGGAGTGCATAGAGTA
380 S P P E E P P D F C C P K C Q Y Q A P D M D T L Q I H V M E C I E •

MscI (1815) **NheI (1809)** 1801 GGAGCAGCAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAAGTGAATGCAAGTGAATAAATGCTTTATTTGTGAAATTT
413

HpaI (1947) **MfeI (1958)** 1901 GTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCATTATTTATGTTTCAGGTTTCAGGGGAGGTGTG

EcoRI (2043) 2001 GGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTTCAAAATACAGCATAGCAAACTTTAACTCCAATCAAGCCTCTACTTGAA
2101 TCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTAAGATATA

SapI (2225) **SspI (2282)** **SwaI (2296)** 2201 GTGTATTTTCCAAGGTTTGAAGTAGCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTGTAGTAAATATTCAGAAATAATTT

EcoO109I (2357) 2301 AAATACATCATTGCAATGAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGG
2401 AACAAAGGAACCTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTT
141 • N R T Y K L P I L E E I T T K
BstXI (2586) 2501 GACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCTGATGGAT
125 V L 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

2601 CTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCAC
91 R D 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
2701 AGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTGTCTC
58 V T 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

BbsI (2867)
XmnI (2863)

2801 ATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCCTATAGTGAGTCGTA
25 Y L M T I K E T A V E V L E L D Q Q S I N F T K M

AseI (2929)

2901 TTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTACTAAACGAGCTCTGCTTATA

SpeI (3084)

3001 TAGACCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAAC
3101 TCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAAT

SnaBI (3212)

3201 AGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCA

NdeI (3317)

3301 ATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTG

PstI (3496)
SdaI (3495)

3401 GCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCTCTGC

PacI (3503) **BspLU11I (3513)**

3501 AAGTTAATAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACG
3601 AGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAAGCTCCCTCGTGCCTCTCC
3701 TGTTCGACCCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTACGCTGTAGGTATCTCAGTTCGGTG

ApaLI (3827)

3801 TAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTGAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAA
3901 GACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTA
4001 CGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCC
4101 GCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTC

EagI (4263)
PacI (4243) **Swal (4252)** **NotI (4262)**

4201 AGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCCAATAAAATATCTTTATTTTATTACATCTG
4301 TGTGTTGGTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCCAGTGAAGTG
4401 CAGGTGCCAGAACATTTCTATCGAA