



100

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

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

KasI (535) **AgeI (552)** **BspHI (560)**
501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTATCATGACCTCCAAGAAGCTGGTGAAGTCCGGTGGCTGGCTG 1▶ M T S K K L V N S V A G C

601 TGCTGATGAGCTCTTGCTGGCCTGGTGGCCTGCAACCCAACTGCAGCTCCTGCAGGGCCACCGCTGGCCCTCCGTTCTGACCTGGACAGCTCAAG 13▶ A D D A L A G L V A C N P N L Q L L Q G H R V A L R S D L D S L K

SdaI (651) **DraIII (661)**
701 GGCCGGTGGCACTGCTGTCGGTGGGGCTCTGGCCATGAGCCTGCCATGCTGGTTTCATAGGAAGGGATGCTGACTGGGGTATCGCGGGAGCTG 47▶ G R V A L L S G G G S G H E P A H A G F I G K G M L T G V I A G A

801 TGTTACCTCCCCGGCAGTGGGCAGCATCTGGCAGCCATCAGGGCCGTGGCCAGGCGGCACAGTGGGACGCTCCTTATCGTGAAGAAGTCACTGG 80▶ V F T S P A V G S I L A A I R A V A Q A G T V G T L L I V K N Y T G

SrfI (934)
901 GGATCGGCTCAACTTCGGCTGGCCCGGAGCAGCGCCGGCTGAAGGCATCCCGGTGGAGATGGTGGTATTGGGGACGACAGCGCCTTCACTGTCCTG 113▶ D R L N F G L A R E Q A R A E G I P V E M V V I G D D S A F T V L

DraIII (1042)
1001 AAGAAGCAGCGCGGGGCTGTGCGGCACCGTGTATACACAAGTGGCAGGTGCTCTGGCTGAGGCTGGTGGGGCTGGAGGAGATCGCAAAGC 147▶ K K A G R R G L C G T V L I H K V A G A L A E A G V G L E E I A K

Asp718I (1126) **Acc65I (1126)**
BstEII (1110) **NcoI (1121)**
1101 AGGTGAACGTGGTCAACAAGCCATGGTACCCTGGGGTGGAGCTTATCCTCCTGCAGCGTCCCTGGTCCAAACCCACCTTCGAGCTCTCAGCCGACGA 180▶ Q V N V V T K A M G T L G V S L S S C S V P G S K P T F E L S A D E

BamHI (1217)
1201 GGTGGAGCTGGGCTGGGATCCACGGGGAAGCTGGTGTGCGCCGGATAAAGATGGCAACCGCGATGAGATTGTGAACTCATGCTCGACCACATGACA 213▶ V E L G L G I H G E A G V R R I K M A T A D E I V K L M L D H M T

MluI (1310)
1301 AACACCACCAACCGTCCATGTGCCTGTGCAGCCCGCTCCTCAGTTGTGATGATGGTCAACAACCTGGGTGGCCTGTCATTCTGGAAGTGGGCATCA 247▶ N T T N A S H V P V Q P G S S V V M M V N N L G G L S F L E L G I

BsrBI (1416) **SacII (1431)**
1401 TAGCCGACGTACCGTCCGCTCCCTGGAGGGCCGCGGGTGAAGATTGCCCGTGCCTGGTGGGCACCTTCATGTCAGCACTGGAGATGCCTGGCATTTC 280▶ I A D A T T V R S L E G R G V K I A R A L L V G T F M S A L E M P G I S

1501 TCTCACCTCCTGGTGGATGAGCCTCCTGAACTGATAGATGATGAAACCTGCAGCAGCCTGGCCTAACGTGGCTGAGTCTCCATTACTGGG 313▶ L T L L L V D E P L L K L I D A E T T A A A W P N V A A V S I T G

1601 CGGAAGCGGAGCCGGTAGCCCCGCGGAGCCCCAGGAGGCCCTGATTCCACTGCTGCAGGAGGCTCAGCCTCGAAGCGGATGGCGTGGTGTGAAAC 347▶ R K R S R V A P A E P Q E A P D S T A A G G S A S K R M A L V L E

1701 GGTGTGCAGCACTCTCCTGGGCTGGAGAACACCTGAATGCCTGGACCGGCTGCTGGTGCAGGCGACTGTGGCACCACCACAGCCGTGGCGCCAG 380▶ R V C S T L L G L E E H L N A L D R A A G D G D C G T T H S R A A R

Bsp120I (1824)
1801 AGCAATCCAGGAGTGGCTGAAGGAGGGCCACCCCTGCCAGCCCTGCCAGCTGCTCTCAAGTTGTCTGTTCTGCTCCTGGAGAAGATGGGAGGCTCA 413▶ A I Q E W L K E G P P P A S P A Q L L S K L S V L L L E K M G G S

NcoI (1982)
1901 TCTGGGGCGCTCTATGGCCTGTTCTGACTGCGGCTGCACAGCCCTGAAGGCCAAGACCAGCCTCCAGCCTGGTCTGCTGCCATGGATGCCGGCTGG 447▶ S G A L Y G L F L T A A A Q P L K A K T S L P A W S A A M D A G L

2001 AAGCCATGCAGAAGTATGGCAAGGCTGCTCCAGGGGACAGGACTATGCTGGATTCTCTGTGGGCGAGGGGACAGGCTCCAAGCCTGGAAGAGCCAGG 480▶ E A M Q K Y G K A A P G D R T M L D S L W A A G Q E L Q A W K S P G

2101 AGCTGATCTGTTACAAGTCTGACCAAAGCAGTCAAGAGTGCAGGAGCTGCAGCCGAGGCCACCAAGAATATGGAAGCTGGAGCCGGAAGAGCCAGTTAT 513▶ A D L L Q V L T K A V K S A E A A E A T K N M E A G A G R A S Y

2201 ATCAGCTCAGCAGGCTGGAGCAGCCAGCCCGGGGCGTGGCAGCTGCTGCATCTCCGGCCATCTTGGAGGCTTGGCAGAGCTAGGGTGTGTGAC 547▶ I S S A R L E Q P D P G A V A A A I L R A I L E V L Q S •

MscI (2312) **BalI (2312)**
NheI (2306)
2301 TGCCTCGTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAAGTGAAGTGCAGTGAAGGAAATGCTTTATTTGTGAAATTTGTG

HpaI (2444) **MfeI (2455)**
2401 ATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTATGTTTCAGGTTACAGGGGAGGTGTGGGA

EcoRI (2540)
2501 GGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCC

2601 TTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAGATATAGTG

2701 TATTTTCCAAGTTTGAAC TAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAA
SspI (2779) Swal (2793)

2801 TACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAAC

2901 AAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGAC
141 • N R T Y K L P I L E E I T T K V

3001 CAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGTGACCACCCTGATGGATCTG
124 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 R

3101 TCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGA
90 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 V

StuI (3218)
Eco147I (3218)

3201 CAGTGACCCTGCCAATGTAGGCCCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATA
57 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 Y
BspHI (3368)

XmnI (3360)

3301 GAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCCTATAGTGAGTCGTATTA
24 L M T I K E T A V E V L E L D Q Q S I N F T K M

VspI (3426)
AseI (3426)

3401 TACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGATGGCGTCTCCAGCTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAG

SpeI (3581)

3501 ACCTCCCACGTTACACGCCTACCGCCATTGCGTCAATGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAACAAACTC
←

3600 CCATTGACGTC AATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTA CTGACAAAACCGCATCATCATGGTAATAG

SnaBI (3709)
Eco105I (3709)

3700 CGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTA CTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAAT

NdeI (3814)

3800 AGGGGGCGTACTTGGCATATGATACACTTGATGTA CTGCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGC

SdaI (3992)

3900 GTTACTATGGAAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGT CAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCCTGCA

PacI (4000) BspLU11I (4010)

3999 GGTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACG
←

4098 AGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGGCTCTCC

4198 TGTTCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTACGCTGTAGGTATCTCAGTTCGGTG

ApaLI (4324)

4298 TAGGTCGTTTCGCTCAAGCTGGGCTGTGTGCACGAACCCCGCTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAA

4398 GACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTA

4498 CGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACC

4598 GCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTC

EagI (4760)
PacI (4740) Swal (4749) NotI (4759)

4698 AGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTG

4798 TGTGTTGGTTTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTG

4898 CAGGTGCCAGAACATTTCTCTATCGAA