



PvuI (7)
SgfI (6) EcoNI (96)
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGGGGTAAGTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC
Psp1406I (203) HindIII (245) Bsu36I (291)
PvuII (239) EcoNI (287)
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT
NcoI (560)
BstEII (555)
AgeI (552)
KasI (535)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTACCATTGGCGGACGAGGTGGCGCTCGCCCTCAGGCCGCCGG
1 M A D E V A L A L Q A A G
NcoI (620) BsrBI (652) XmaI (699)
SrfI (698)
601 CTCCCTTCCGCGCGGCCGCTGAGGCGCGCTGCGAGCCGGCGGACGAGCCGCTCCGCAAGAGGCCCGCCGAGACGGGCTGGCCTCGGGCGCAGC
13 S P S A A A A M E A A S Q P A D E P L R K R P R R D G P G L G R S
SgrAI (725)
KasI (723)
701 CCGGGCGAGCCGAGCGCAGCAGTGGCGCCGCGCGGGGTGTGAGGCGCGGAGCGCCGCCGCCCGCCGCGCTGTGGCGGGAGCGGCAGGGGCGG
47 P G E P S A A V A P A A A G C E A A S A A A P A A L W R E A A G A
BsrBI (811)
801 CGCGAGCGCGGAGCGGGAGGCCCGCGGACGGCCGTGGCCGGGACGGAGACAATGGTCCGCCCTGCGGGGGAGCCGAGGGCGGCTGACGACTTCGA
80 A A S A E R E A P A T A V A G D G D N G S G L R R E P R A A D D F D
PvuI (953)
901 CGACGACGAGGGCGAGGAGGAGGACGAGCGCGCGCGGCGAGCGCGCGGCGCAGCGATCGGCTACCGAGACAACCTCCTGTTGACCGATGGACTCCTCACT
113 D D E G E E E D E A A A A A A A A I G Y R D N L L L T D G L L T
1001 AATGGCTTTCATTCCTGTGAAAGTGATGACGATGACAGAACGTACACGCCAGCTCTAGTGACTGGACTCCGCGGCCGCGGATAGGTCCATATACTTTG
147 N G F H S C E S D D D D R T S H A S S S D W T P R P R I G P Y T F
BspHI (1112)
1101 TTCAGCAACATCTCATGATTGGCACCGATCCTCGAACAATTCTTAAAGATTTATTACCAGAAACAATTCCTCCACCTGAGCTGGATGATGACGCTGTG
180 V Q Q H L M I G T D P R T I L K D L L P E T I P P P E L D D M T L W
EcoRV (152)
1201 GCAGATTGTTAATAATCCTTTTCAGAACCACCAAGCGGAAAAAAGAAAAGATATCAATACAATTGAAGATGCTGTGAAGTACTGCAGGAGTGTA
213 Q I V I N I L S E P P K R K K R K D I N T I E D A V K L L Q E C K
1301 AAGATAATAGTTCGACTGGAGCTGGGGTTTCTGTCTCCTGTGGGATTCTGACTTCAGATCAAGAGACGGTATCTATGCTCGCCTTGGCGGTGGACTTCC
247 K I I V L T G A G V S V S C G I P D F R S R D G I Y A R L A V D F
1401 CAGACCTCCAGCCCTCAAGCCATGTTTGATATTGATTTAGAAAAAGACCAAGACCATTTCTCAAGTTTGCAAAAGGAAATATATCCCGGACAGTT
280 P D L P D P Q A M F D I E Y F R K D P R P F F K F A K E I Y P G Q F
BstBI (1556)
Bsp119I (1556)
1501 CCAGCCGTCTGTGTGCACAAATTCATAGCTTTGTGAGATAAGGAAGGAAAACTACTTCAAAATATACTCAAAATATAGATACCTTGGAGCAGTTGCA
313 Q P S L C H K F I A L S D K E G K L L R N Y T Q N I D T L E Q V A
BamHI (1610)
1601 GGAATCCAAAGGATCCTTCAGTGTCTGTTCCCTTTGCAACAGCATCTTGCTGATTTGTAATACAAAGTTGATTGTGAAGCTGTTCTGTTGAGACATTT
347 G I Q R I L Q C H G S F A T A S C L I C K Y K V D C E A V R G D I
AvrII (1723)PvuII (1733) BspHI (1754)
1701 TTAATCAGGTAGTTCCTCGGTGCCCTAGGTGCCAGCTGATGAGCCACTTGCCATCATGAAGCCAGAGATTGTCTTCTTTGGTAAAACCTACCAGAACA
380 F N Q V V P R C P R C P A D E P L A I M K P E I V F F G E N L P E Q
1801 GTTTCATAGAGCCATGAAGTATGACAAAGATGAAGTTGACCTCCTCATTGTTATTGGATCTTCTGAAAAGTGAAGACAGTAGCACTAATCCAAAGTTCT
413 F H R A M K Y D K D E V D L L I V I G S S L K V R P V A L I P S S
SspI (1920)
1901 ATACCCCATGAAGTGCCTCAAATATTAATAAATAGGGAACCTTTGCTCATCTACATTTTGTAGTGTAGAGCTCCTTGGAGACTGCGATGTTATAATTAATG
447 I P H E V P Q I L I N R E P L P H L H F D V E L L G D C D V I I N
HindIII (2053)
2001 AGTTGTGTCATAGGCTAGGTGGTGAATATGCCAACTTTGTTGTAACCTGTAAAGCTTTTCAGAAATTAAGTACTGAAAAACCTCCACGCCCAAAAAGGAATT
480 E L C H R L G G E Y A K L C C N P V K L S E I T E K P P R P Q K E L
2101 GGTTCATTTATCAGAGTTGCCACCAACACCTCTTCATATTTCCGAAGACTCAAGTTCACCTGAAAGAAGTGTACCACAAGACTCTTCTGTGATTGCTACA
513 V H L S E L P P T P L H I S E D S S S P E R T V P Q D S S V I A T
SpeI (2287)
2201 CTTGTAGACCAAGCAACAAACAATGTTAATGATTTAGAAGTATCTGAATCAAGTTGTGTGGAAGAAAAACCAAGAAGTACAGACTAGTAGGAATG
547 L V D Q A T N N N V N D L E V S E S S C V E E K P Q E V Q T S R N
ScaI (2347)
2301 TTGAGAACATTAATGTGAAAAATCCAGATTTTAAAGCTGTGGTTCAGTACTGCAGACAAAAATGAAAGAAGTTCAGTTGCAGAAACAGTGAGAAAAATG
580 V E N I N V E N P D F K A V G S S T A D K N E R T S V A E T V R K C
2401 CTGGCCTAATAGACTTGCAAAGGAGCAGATTAGTAAGCGGCTTGGGGTAAATCAATACCTGTTTGTACCACCAAAATCGTTACATATTCACGGTGTGAG
613 W P N R L A K E Q I S K R L E G N Q Y L F V P P N R Y I F H G A E

Bst1107I (2500)
2501 GTATACTCAGACTCTGAAGATGACGTCTTGCCTCTAGTTCCTGTGGCAGTAACAGTGACAGTGGCACATGCCAGAGTCCAAGTTTAGAAGAACCCTTGG
647▶ V Y S D S E D D V L S S S S C G S N S D S G T C Q S P S L E E P L

EcoRI (2620)
2601 AAGATGAAAGTGAATTGAAGAATTCTACAATGGCTTGAAGATGATACGGAGAGGCCGAATGTGCTGGAGGATCTGGATTGGAGCTGATGGAGGGGA
680▶ E D E S E I E E F Y N G L E D D T E R P E C A G G S G F G A D G G D

MscI (2782)
NheI (2776)
2701 TCAAGAGGTTGTTAATGAAGCTATAGCTACAAGACAGGAATTGACAGATGTAACATCCATCAGACAAATCATAAGCTAGCTGGCCAGACATGATAAGA
713▶ Q E V V N E A I A T R Q E L T D V N Y P S D K S •

2801 TACATTGATGAGTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAA

HpaI (2914)
2901 GCTGCAATAAACAAAGTTAAACAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAA

EcoRI (3010)
3001 ATGTGGTATGGAATTCTAAATAACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCAT

SapI (3192)
3101 CAGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGGTTTGAAGCTAGCTCTTCA

SspI (3249) **Swal (3263)**
3201 TTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTGTAGTAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTT

3301 TATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCA

3401 AGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAA
141◀ • N R T Y K L P I L E E I T T K V L K G N M E I L V F

BstXI (3553)
3501 GCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACA
114◀ 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 Y P H R V

StuI (3688)
3601 GCCAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGT
80◀ 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 I Y A E I H
3701 GGACAGCAGAGATGATCTCCAGTCTTGGTCTGTATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTC
47◀ 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 E T A V E
3801 CACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATATACTATGCCGATATACTATGCCGATGATTA
14◀ V L E L D Q Q S I N F T K M

3901 ATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACAGACTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATT

SpeI (4051)
4001 TGGCTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAA

SnaBI (4179)
4101 ATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGT

NdeI (4284)
4201 AGGAAAGTCCCATAAGGTGATGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCAATAGGGGGCGTACTTGGCATATGATACACTTGA
4301 TGTAAGTCCAAGTGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACG

PacI (4470) **SdaI (4462)** **BspLU11I (4480)**
4401 TCAATGGCGGGGTCGTTGGCGGTGAGCCAGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAAATAAGAACATGTGAGCAAAAGGCCAG
4501 CAAAAGCCAGGAACCGTAAAAAGCGCGTGTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGT
4601 GGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCTGGAAGTCCCTCGTGGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTC

ApaLI (4794)
4701 CGCCTTTCTCCCTTGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCAC
4801 GAACCCCGTTCCAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTG
4901 GTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTG
5001 CGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAACAAACCAGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAG
5101 CAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAAACGAAAACTCACGTTAAGGGATTTTGG

PacI (5210) **Swal (5219)**
5201 TCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGTAACCTAACA
5301 TACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGACAGGTGCCAGAACATTTCTCTATCGAA