



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

Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGCC
HindIII (245)
PvuII (239) 301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC
Bsu36I (291)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

KasI (535) 501 TCTGTTCTGCGCGCTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGTCAACATGTCGTGCGTCAAGTTATGGCCAGCGGTGCCCCCGC
AgeI (552) 1► M S C V K L W P S G A P A
BspLU11I (560)

601 CCCCTTGGTGTCCATCGAGGAACGGAGAACCAGGAGCTCGTCGGCAAAGCGGGTTCGGCACAGTGTTCGGGCGCAACATAGGAAGTGGGGCTACGAT
13► P L V S I E E L E N Q E L V G K G F G T V F R A Q H R K W G Y D

701 GTGGCGGTCAAGATCGTAAACTCGAAGGCGATATCCAGGGAGGTCAAGGCCATGGCAAGTCTGGATAACGAATTCGTGCTGCGCTAGAAGGGGTTATCG
47► V A V K I V N S K A I S R E V K A M A S L D N E F V L R L E G V I
EcoRV (729) **NcoI (749)** **EcoRI (769)**

801 AGAAGGTGAAGTGGACCAAGATCCCAAGCGGCTCTGGTACTAAATTCATGGAGAACCAGGCTCCTTGTGGGGTGTGTCAGTCCCAGTGCCTCGGCC
80► E K V N W D Q D P K P A L V T K F M E N G S L S G L L Q S Q C P R P
NgoMIV (828)

901 CTGGCCGCTCCTTTGCCGCTGTGAAAGAAGTGGTGTGGGATGTTTTACCTGCACGACCAGAACCAGGCTCCTGCACCGGGACCTCAAGCCATCC
113► W P L L C R L L K E V V L G M F Y L H D Q N P V L L H R D L K P S
BsrBI (904)

1001 AACGTCCTGCTGGACCCAGAGCTGCACGTCAAGCTGGCAGATTTTGGCCTGTCCACATTTTCAGGGAGGCTCACAGTCAGGACAGGGTCCGGGAGCCAG
147► N V L L D P E L H V K L A D F G L S T F Q G G S Q S G T G S G E P
Tth111I (1080)

1101 GGGCACCTGGGCTACTTGGCCCCAGAACTGTTTGTAAACGTAACCGGAAGGCTCCACAGCCAGTACGCTTACAGCTTCGGGATCCCTAATGTGGG
180► G G T L G Y L A P E L F V N V N R K A S T A S D V Y S F G I L M W A
StuI (1151) **BamHI (1184)**

1201 AGTGCTTGTGGAAGAGAAGTTGAGTTGCCAACGAACCATCACTCGTGTACGAGCAGTGTGCAACAGGCAGAACCGGCTTCATTGGCTGAGCTGCC
213► V L A G R E V E L P T E P S L V Y E A V C N R Q N R P S L A E L P
1301 CAAGCCGGGCTGAGACTCCCGGCTTAGAAGGACTGAAGGAGCTAATGCAGCTCTGCTGGAGCAGTGAAGCCAGGACAGACCTCCTCCAGGAATGCC
247► Q A G P E T P G L E G L K E L M Q L C W S S E P K D R P S F Q E C

1401 TACCAAAAAGTGAAGTCTTCCAGATGGTGGAGAACAATATGAATGCTGCTGTCTCCACGGTAAAGGATTTCTGTCTCAGCTCAGGAGCAGCAATAG
280► L P K T D E V F Q M V E N N M N A A V S T V K D F L S Q L R S S N R
BbsI (1417)

1501 GAGATTTCTATCCAGAGTCAAGGAGGACAGAAATGGATGGCTTTAGGAGAACCATAGAAAACAGCACTCTGTAATGATGTCATGGTTTCT
313► R F S I P E S G Q G G T E M D G F R R T I E N Q H S R N D V M V S

1601 GAGTGGCTAAACAACTGAATCTAGAGGAGCCTCCAGCTCTGTTCTAAAAAATGCCGAGCCTTACCAAGAGGAGCAGGGCACAAGAGGAGCAGGTT
347► E W L N K L N L E E P P S S V P K K C P S L T K R S R A Q E E Q V
XbaI (1620)

1701 CACAAGCCTGGACAGCAGGCACATCTTCAGATTCGATGGCCCAACCTCCAGACTCCAGAGCTCAACTTTAGAAAACAGATGCCAGCCCTACCTC
380► P Q A W T A G G T S S D S M A Q P P Q T P E T S T F R N Q M P S P T S

1801 AACTGGAACACCAAGTCTGGACCCGAGGGAATCAGGGGGCTGAGAGACAAGGCATGAAGTGGTCTGCAGGACCCCGAGCCAAATCCAGTAAACAGGG
413► T G T P S P G P R G N Q G A E R Q G M N W S C R T P E P N P V T G
SdaI (1865)

1901 CGACCGCTCGTTAACATATACTGCTCTGGGGTGAAGTTGGAGACAACAACACTACTGACTATGCAACAGACAACCTGCCTTGGCCACATGGGGCTTGG
447► R P L V N I Y N C S G V Q V G D N N Y L T M Q Q T T A L P T W G L
BsrBI (1903)

2001 CACCTTGGGCAAGGGGAGGGGCTTGCAGCACCCACCAGTAGGTTGCAAGAAGGCCTAAAGATCTGAAGCCTGGAGCAGGCCACAGGTTGGTA
480► A P S G K G R G L Q H P P P V G S Q E G P K D P E A W S R P Q G W Y

2101 TAATCATAGCGGAAATAAAGCACCTTCCAAGCTTGCCTCCAAGATTACGAGTTAAGGAAGAGTGCCACCCCTGCTAGCTGGCCAGACATGATAAGATA
513► N H S G K •
HindIII (2129) **NheI (2174)**

2201 CATTGATGAGTTTGACAAACCAACTAGAATGCAGTAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGC

2301 TGCAATAAACAAGTTAACAAACAATTGCATTCATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAT

2401 GTGGTATGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCTCTACTTGAATCCTTTTCTGAGGATGAATAAGGCATAGGCATCA
EcoRI (2408)

2501 GGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTGCTTTCATT

2601 TCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTGTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTA
SspI (2647) **SwaI (2661)**

2701 TTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAG
2801 AAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAGC
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 C
2901 AGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGC
113 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 A
StuI (3086)
3001 CACAATGGTGTCAAAGTCTTCTGCCCTTGTCTACAGCAGACCCAATGGCAATGGCTTACGACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGG
80 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
3101 ACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCA
46 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 V
BspHI (3236)
BbsI (3232) XmnI (3228) AseI (3294)
3201 CCAGTCCAGATCCTGTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAAT
13 L E L D Q Q S I N F T K M
3301 TGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTG
SpeI (3449)
3401 CGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAAT
SnaBI (3577)
3501 CCCCCTGAGTCAAACCGTATCCACGCCATTGATGTAAGTCCGATCATCATGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAG
NdeI (3682)
3601 GAAAGTCCATAAGGTCATGTAAGTCCGATGTAAGTCCGATGTAAGTCCGATGTAAGTCCGATGTAAGTCCGATGTAAGTCCGATGTAAGTCCGATGTAAGT
3701 TACTGCCAAGTGGGCGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATATTGACGTC
SdaI (3860) PacI (3868) BspLU11I (3878)
3801 AATGGGCGGGGGTCTTGGGCGGTGAGCCAGGCGGGCCATTTACCCTAAGTATGTAACGCTGCAGGTTAATTAAAGAACATGTGAGCAAAAGGCCAGCA
3901 AAAGGCCAGGAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGG
4001 CGAAACCCGACAGGACTATAAAGATACCAGGCTTTCCCTGGAAAGTCCCTCGTGGCTCTCTGTTCCGACCTGCCGCTTACCGGATACCTGTCCG
ApaLI (4192)
4101 CCTTTCTCCCTTCGGAAGCGTGGCGTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGA
4201 ACCCCCCTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAAGTCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGT
4301 AACAGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCG
4401 CTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTATCCGGCAAAACAAACCCTGCTGAGCGGTGTTTTTTTGTGGAAGCAGCA
4501 GATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCT
EagI (4628)
PacI (4608) SmaI (4617) NotI (4627)
4601 ATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGGTTTTTTTGTGTAATCGTAACATA
4701 CGCTCTCCATCAAAACAAACGAAACAAACAACTAGCAAAATAGGCTGTCCCAGTGAAGTGCAGGTGCCAGAACATTTCTATCGAA