



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

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCAACTCTACGCTTTTGTTCGTTT **NgoMIV (441)**

501 TCTGTTCTGGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTACCATTGGCAGAACTGTGCCGATGGATTCCACACTGACTGC **KasI (535)** **AgeI (552)** **BstEII (550)** **NcoI (560)**
1▶ M A E L C R M D S T L T A

601 TCTGGACGAGGAGATGCTCTGGATATGCTGGAGAGTACCGATGCGAGATTGTGCGAGCATCTGCCCTAGCCGGCTCACCCCTACCTGCGCCAGGCC **NgoMIV (671)**
13▶ L D E E M L W D M L E S H R C R I V Q S I C P S R L T P Y L R Q A

701 AAGTGCTGGCCAGCTGGACGAGGAGATCCTGCATAGTCCCGTTCCACACAGTGCATGAGAGTTGGGCATTGCTGGATCTGCTAAAGGCC
47▶ K V L G Q L D E E E I L H S S R F T N S A M R V G H L L D L L K A

801 GAGGAAGAATGGAGCCATTGCCTTTCTGAAAGCCTGAAGTTCACACCCCTGATGTCTACACCCTGGTCACTGGGTCAGTCTGACATTGACTTCAG
80▶ R G K N G A I A F L E S L K F H N P D V Y T L V T G L Q S D I D F S

901 CACTTTCAGCGGTCTCATGGAGACATCCAAGCTGACCGAGTGTCTGGCTGGGGCCATCAGCAGCTGCAGGAGGAGCTGGCCAGGAGAAGGCACAGAAG
113▶ T F S G L M E T S K L T E C L A G A I S S L Q E E L A Q E K A Q K

1001 GAGGTTCTGCTCCGGAGATGCCAGCAGCTGAAGGAGCGCCTGGGCTTGGCTGAGGCTCACGCAGAAGGTTCTGCGCCAGCTGGAGGTCGACCACAGCCGCA **BspEI (1010)** **SalI (1084)**
147▶ E V L L R R C Q Q L K E R L G L A E A H A E G L R Q L E V D H S R

1101 TGAAACGTGAGGTCAGCACCCACTTCCACGAGGCTGAAACTGAAGGACGAGATGCTGAACCTGCTACTGCACTACAGCAACGCACTCAGAGAGAAGGA
180▶ M K R E V S T H F H E V L K L K D E M L N L S L H Y S N A L R E K E

1201 GCTGGCTGCCACACGCTGCCACAGCCTTACGAAAGAGCTCTACCTGGTGAAGCAGGAAGTCCAGCGAGCAAGCCTTGTATCGTCATGTGAAAGAGAATCT **XhoI (1298)**
213▶ L A A T R C H S L Q E E L Y L V K Q E L Q R A S L V S S C E R E S

1301 CGAGAGAGGTCCTGAAGATGGCCAGCAACCTGGAGCCTCAGGAGAAAGAACTAAATCGGCTTAAGGAGGAGAATGAGAACTCCGCTCCATGACCTTCA **Bsu36I (1336)** **BsrBI (1383)**
247▶ R E R S L K M A S N L E P Q G E E L N R L K E E N E K L R S M T F

1401 GCCTGGTGGAGAAGGACATTCTGGAACAGAGTCTGGATGAGGCCAGGAGCAAGCAAGCTGGTGGACCCATCCACTACTGCGGGAGAGAGAGT
280▶ S L V E K D I L E Q S L D E A R E S K Q E L V D R I H S L R E R A V

1501 GGCCGCGGAGAGGAGCAGCAGAAGCAGTACTGGGAGGAGAAGGAACAGACCTACTCCAGTTCGGAAAGCACAGGTGGAAGTATACAAAGAAAAG **SacII (1502)** **ScaI (1523)** **BspEI (1559)**
313▶ A A E R Q Q K Q Y W E E K E Q T L L Q F R K T Q V D C E L Y K E K

1601 ATGACCATGCTTCAGGGCCAGGTGGCTGAGCTGCAGAAGGAACGTGACCAGGCATACACAGCAAGGGACAGGGCCAGATGGAGATTTCTCAGCGCTGG **Bsp120I (1670)**
347▶ M T M L Q G Q V A E L Q K E R D Q A Y T A R D R A Q M E I S Q R L

1701 TGGAGAAGGATGCCCTTCGAGGAGAGTGTTCGAGCTGACGGAGCAGGTCTGTGAGCTGCGTACTCAGCTGCGCAGGTCGAGCGGAGGCCAGGAGG **FspI (1769)**
380▶ V E K D A L R R R V F E L T E Q V C E L R T Q L R R L Q A E A P G G

1801 ACCCAAGCAGGAAGCCGGAGCCAGGAACTCTGCCTCCGGGGAAAGCAGAGGCTGTGCGGATGCATGCTGTGTGCCACCAGATGACAGTACTGCAGC **NsiI (1861)**
413▶ P K Q E A G A R E L C L R G K Q R L V R M H A V C P P D D S D C S

1901 CTCCTCAGCTCCACAGAGTCCCGGCTGTGGTGGGACCTGAATTCACATCCAGCCGGGAGCAGATGGACAGCTTCCGCTCCAGCAGCCCCATGCCTCCCA **EcoRI (1938)** **BsrBI (1974)**
447▶ L L S S T E S R L W W D L N S T S S R E Q M D S F R S S S P M P P

2001 GCCAGCAGTCCCTGTACAAGCGGGTGGCAGAGGACTTCTGGAAGACCCGAGTCTCTAAGCTTCCAGAACTTCCAGATGCGCCTTCAAGGGGCTAC **BsrGI (2012)** **HindIII (2058)**
480▶ S Q Q S L Y K R V A E D F L E D P E S L S F P E V L E M R L Q G A T

2101 AGTGGACGACACAGACAGACCTGGAGTTTGGATGATTGACGGAGCAGACCTCTCAGACAGAAGACAGCTGCAGGGGCTTCCCGGAGCTGAAT
513▶ V D D T D T D L E F E M I D G A D L S Q T E D S L Q G S S R S L N

2201 GTCTCAGAAAGCAGTGTCCCGTGGAGGAGGAGCCAGCCGCAAGATCCTAAGCCAGGTACCGGTGCTGGCTTCCAAGGGGACGCTTGGAAACAGA **MluI (2282)**
547▶ V S E S S V P V R R R P A R K I L S Q V T V L A F Q G D A L L E Q

2301 TTGGTGCATCGGTGGGAACCTCACTGGGATCTTCACTACCGTGTACCCCGGCTCTGCGAGCAGATGAGATGGCCCTGCGCCTTACCCAGATCAT **Acc65I (2386)**
580▶ I G V I G G N L T G I F I H R V T P G S A A D E M A L R P G T Q I M

2401 GATGGTGGACTATAAACCTACCAAGCCATCATTAAAGGGCACTCTGGAGAATAACAACGCTGGAGCAGGCTGTGGGCTTCTCAGGAGGTGAATGGCTCC
613▶ M V D Y K P T K P S L R A T L E N T T L E Q A V G L L R R V N G S

2501 TGCTACTTGTCTGTGAAGATCAACTGAAGTTATAAGAACCTCATCCAGGACCTAGATGCCAAAGTGGTAACGCTGGGGATTCTTCTACATCCGTG
647▶ C Y L S V K I N T E G Y K N L I Q D L D A K V V T S G D S F Y I R

2601 TCAACCTGGCCATGCAGAGGGGAGGGGACGGAGAAGTCAAACTCACTGCAATGACATCCTGCATGCTACTGACACCATGTTCCAAGGCCGAGCTGCTG
680▶ V N L A M Q R G G D G E L Q T H C N D I L H V T D T M F Q G R S C W

DraIII (2707)
2701 GCATGCCACCATTGTGAACCCCTACACCATGAAAGACATGGAGCCTGGCACCATCCCCAACTATTACAGGCTCAGCAGCAGCTTCTGGCCCTCATCCAG
713▶ H A H H V N P Y T M K D M E P G T I P N Y S Q A Q Q Q L L A L I Q
2801 GACATGACTCAACGGTGCACAGTCCCCGCAAGCCTCCTGGAGGACCACAGAAGTTAGTACGAATTGTAGTGGACAAAGCCGCTGTCACTCTCTGA
747▶ D M T Q R C T V P R K P P G G P Q K L V R I V S V D K A A V S P L
2901 CTTTCATCCTTTGACCAAAGCCAGTGGGATTCTGGCAAGGAGGAAGGTGGTCTAGCGTGTGCTTCTGGTCAGAGAGCTGCTTACCCTGGCACCGTACAC
780▶ T S S F D Q S Q W D S G K E E G G P S V C F W S E S C F T L A P Y T

SfiI (3017) **BamHI (3065)**
3001 CCTGGTGCACCCACAGGCCTGCCCGCCCCGGCCTGTGCTGTTTGTGCTAGATTAGTTGGAAGGATCCTGGGTAAAAAGCTGTGTCTCCTCCAAGGT
813▶ L V H P H R P A R P R P V L F V P R L V G R I L G K K L C L L Q G

ScaI (3119) **BstEII (3190)**
3101 TTTAAGCAATGTTTCAGCAGACTTTGAGCCAGGAGTATGCCACCTGGAGTCAGAGAGGGGACATCATCCAGGAGGGAGAGTCAATAGGTGACCAC
847▶ F K Q C S A E Y L S Q E E Y A T W S Q R G D I I Q E G E S I G D H

Tth111I (3271) **BspLU11I**
3201 ACTGGATCACCCGGCATGCTGTGGAGTCCCTCATGAATATGAGCACCCACGCCCTGCTGGATGTGCGGCTGGACAGCGTCCGAGTCTACATAGGATGGA
880▶ H W I T R H A V E S L M N M S T H A L L D V R L D S V R V L H R M D
3301 CATGTTTCCATTATCATCCATGTCTGTCAATGAGAAGACAGCAAAGAACTCAGGAAGGGCCTGCATCGGCTTGGCAGCTCGGAGGAGCAGTTCCTG
913▶ M F P I I I H V S V N E K T A K K L R K G L H R L G S S E E Q F L

BsrGI (3446)
3401 GAGGTGGCCCGCAGGAGGAGGGGAGCTGGACAGAGTCCCGTGTCTGTACAGCAGCCTGGCCCGCAGCCTGGAGTGTCTGGACAGCCTGCTCAGCT
947▶ E V A R Q E E G E L D R V P C L Y S S L A P D S W S D L D S L L S

NheI (3588)
3501 GTGTGCGCCTGGCCATTGCAGATGAGCAGAAGAAGGTGGTGTGGACAGAGCCCTGCTGAAGCCAGACCTGGCTTGGACTGTGGCTAGCTGGCCA
980▶ C V R L A I A D E Q K K V V W T E S P C •
3601 GACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAGAAAAATGCTTTATTTGTGAATTTGTGATGCTATTGCTTTATTTG

HpaI (3726) **MfeI (3737)**
3701 TAACCATTATAAGCTGCAATAAAACAAGTTAAACAACAACATTGCATTCTTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTA

EcoRI (3822)
3801 AAACCTCTACAAATGTGGTATGGAATTC TAAATACAGCATAGCAAACCTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATA
3901 AGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGA

SspI (4061) **SwaI (4075)**
4001 ACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAAATTCAGAAAATATTAAATACATCATTGCAATGAAA
4101 ATAAATGTTTTTATTAGGCAGAATCCAGATGTCTAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGA
4201 AATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTATCTC
141▶ • N R T Y K L P I L E E I T T K V L K G N M E
4301 AATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGCCACCTCATCAGAGTAG
118▶ 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 D V E D S Y
4401 GGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTTCAGCAGACAGTGCACCTGCCAATGT
84▶ 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 T V R G I Y

StuI (4500)
4501 AGGCCTCAATGTGGACAGCAGAGATGATCTCCCGAGTCTTGGTCTGATGGCCCGCCGACATGGTGTCTGTTGCTCCTCATAGAGCATGGTATCTTCTC
51▶ 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 L M T I K E

XmnI (4642)
4601 AGTGGCGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTA
18▶ T A V E V L E L D Q Q S I N F T K M

AseI (4708)
4701 TGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAACGAGCTCTGCTTATATAGACCTCCACCGTACAG

SpeI (4863)
4800 CCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAACCTCCATTGACGTCAATGGG

SnaBI (4991)
4899 GTGGAGACTTGAAATCCCGTGAAGTCAAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAG

NdeI (5096)
4999 ATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTAAGTGGGCATAATGCCAGGCGGGCCATTTACCGTATTGACGTCAATAGGGGGCGTACTTGGCA
5099 TATGATACTTGTGTAAGTGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATA

PacI (5282) **BspLU11I (5292)**
5199 CGTCATTATTGACGTCAATGGGGGGGGTCTGTTGGGGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTG C A G G T T A A T T A G A A C A T
5297 GTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAAAAAATCGA
5397 CGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGTCCCTCGTGCCTCTCTGTTCCGACCTGCCGC
5497 TTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAA

5597 GCTGGGCTGTGTGCACGAACCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCA
5697 CTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAA
5797 CAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTT
5897 TTTTGTGGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACTCA

EagI (6042)

PacI (6022) SmaI (6031) **NotI (6041)**

5997 CGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGTTTTTGT
6096 GTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATT
6196 TCTCTATCGAA