



PvuI (7)
SgfI (6)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGGAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) **PvuII (239)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCGCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

KasI (535) **AgeI (552)** **BspHI (560)** **BsaBI (579)**
501 TCTGTTTCTGGCGGTTACAGATCCAAGCTGTGACCGCCGCTACCTGAGATCACCGGTCATCATGACTTCCATTATGTGATTGCCATCTTTGCCCTGAT
1 M T S H Y V I A I F A L M

DraIII (638)
601 GAGCTCCTGTTTAGCCTGCAGGTCCAGAGCCTGGTGCAGTGTGAACTGTGAACTGTACCTGTGAGTGCCTCCCATCTGTCCAGGCTTGTGAGAGCTTC
13 S S C L A T A G P E P G A L C E L S P V S A S H P V Q A L M E S F

BstXI (780)
701 ACTGTTTTGTGAGGCTGTGCCAGCAGAGGCACAACCTGGGCTGCCACAGGAGGTGCATGTCTGAATCTCCGACTGCAGGCCAGGGGCTGGCCAGCTAC
47 T V L S G C A S R G T T G L P Q E V H V L N L R T A G C Q G P G Q L
801 AGAGAGGTCACACTTACCTGAATCCCATCTCCTCAGTCCACATCCACACAAGTCTGTTGTCTGCTCAACTCCCCACGCCCTGTGTGGCA
80 Q R E V T L H L N P I S S V H I H H K S V V F L L N S P H P L V W H

XcmI (932)
901 TCTGAAGACAGAGACTTGCCTGGGCTCCAGACTGTTTTGGTGTCTGAGGGTCTGTGGTCCAGTTTTTCATCAGCAAACCTCTCCTTGACAGCA
113 L K T E R L A T G V S R L F L V S E G S V V Q F S S A N F S L T A

NcoI (1023) **Bsp120I (1049)**
1001 GAAACAGAAGAAAGAACTTCCCCCATGGAAATGAACATCTGTTAAATTTGGGCCGAAAAGAGTATGGAGCAGTACTTCATTACCGAACTCAAGATAG
147 E T E E R N F P H G N E H L L N W A R K E Y G A V T S F T E L K I
1101 CAAGAAACATTTATTAAGTGGGGAAAGATCAAGTGTCCCTCAAAGTGCAACATAGGGAAGAATTTCTCTCACTCAATTACCTTGTGAGTACCT
180 A R N I Y I K V G E D Q V F P P K C N I G K N F L S L N Y L A E Y L
1201 TCAACCCAAAGCAGCAGAAGGTTGTGTGATGTCAGCCAGCCAGCCAGAAATGAGGAAGTACACATCATCGAGCTAATCACCCCAACTCTAACCCCTACAGT
213 Q P K A A E G C V M S S Q P Q N E E V H I I E L I T P N S N P Y S
1301 GCTTCCAGGTGGATATAACAATTGATATAAGACCTTCTCAAGAGGATCTGAAGTGGTCAAAAATCTCATCTGATCTTGAAGTGCAAAAAGTCTGTCA
247 A F Q V D I T I D I R P S Q E D L E V V K N L I L I L K C K K S V

BglII (1483)
1401 ACTGGGTGATCAAATCTTTGATGTTAAGGGAAGCCTGAAAATTATTGCTCCTAACAGTATTGGCTTTGGAAAAGAGAGTGAAGATCTATGACAATGAC
280 N W V I K S F D V K G S L K I I A P N S I G F G K E S E R S M T M T
1501 CAAATCAATAAGAGATGACATTCCTTCAACCCAAAGGAATCTGGTGAAGTGGGCTTTGGACAATGGCTATAGTCCAATAACTTCATACACAATGGCTCCT
313 K S I R D D I P S T Q G N L V K W A L D N G Y S P I T S Y T M A P

BamHI (1685)
1601 GTGGTAATAGATTTTCATCTTCGGCTTGAATAATGCAGAGGAGATGGGAGATGAGGAAGTCCACACTATTCCTCCTGAGCTACGGATCCTGCTGGACC
347 V A N R F H L R L E N N A E E M G D E E V H T I P P E L R I L L D
1701 CTGGTGCCTGCCTGCCCTGCAGAACCCGCCATCCGGGGAGGGGAAGGCCAAAATGGAGGCCTTCCGTTTCTTTCCAGATATTTCCAGGAGAGTCTG
380 P G A L P A L Q N P P I R G G E G Q N G G L P F P F P D I S R R V W

Tth111I (1837)
1801 GAATGAAGAGGGAGAAGATGGGCTCCCTCGGCCAAAGACCCTGTCTCCAGCATAACAAGTCTTCTGGTCTCAGAGAGCCAGAAGAGGTGCAAGGG
413 N E E G E D G L P R P K D P V I P S I Q L F P G L R E P E E V Q G
1901 AGCGTGGATATTCCTGTCTCAAATGTGACAATGAGAAGATGATCGTGGCTGTAGAAAAAGATTCTTTCCAGGCCAGTGGCTACTCGGGGATGGACG
447 S V D I A L S V K C D N E K M I V A V E K D S F Q A S G Y S G M D

BamHI (2010)
2001 TCACCCTGTTGGATCCTACCTGCAAGGCCAAGATGAATGGCACACACTTTGTTTTGGAGTCTCCTCTGAATGGCTGCGGTACTCGGCCCGGTGGTCAGC
480 V T L L D P T C K A K M N G T H F V L E S P L N G C G T R P R W S A

BglII (2184)
2101 CCTTGATGGTGTGGTCTACTATAACTCCATTGTGATACAGGTTCCAGCCCTTGGGGACAGTAGTGGTTGGCCAGATGGTTATGAAGATCTGGAGTCAGGT
513 L D G V V Y Y N S I V I Q V P A L G D S S G W P D G Y E D L E S G
2201 GATAATGGATTTCCGGGAGATATGGATGAAGGAGATGCTCCCTGTTACCCGACCTGAAATCGTGGTGTAAATGCAGCCTTCCAGAGGTGAGGAACC
547 D N G F P G D M D E G D A S L F T R P E I V V F N C S L Q Q V R N
2301 CCAGCAGCTTCCAGGAACAGCCACGGAACATCACCTCAACATGGAGCTATAACAACACTGACCTCTTTTGGTGCCTCCAGGGCGTCTTCTCTGT
580 P S S F Q E Q P H G N I T F N M E L Y N T D L F L V P S Q G V F S V

BstBI (2493)
2401 GCCAGAGAATGGACACGTTTATGTTGAGGTATCTGTTACTAAGGCTGAACAAGAACTGGGATTTGCCATCAAACGTGCTTTATCTCTCCATATTGCAAC
613 P E N G H V Y V E V S V T K A E Q E L G F A I Q T C F I S P Y S N

SspI (2533)
2501 CCTGATAGGATGTCTCATTACACCATTATTGAGAATTTGTCTAAAGATGAATCTGTGAAATTTCTACAGTCCCAAGAGAGTGCACCTTCTATCCCCG
647 P D R M S H Y T I I E N I C P K D E S V K F Y S P K R V H F P I P
2601 AAGCTGACATGGATAAGAAGCGATTCAGCTTTGTCTTCAAGCCTGTCTTCAACACTCACTGCTCTTTCTACAGTGTGAGCTGACGCTGTGTACGAAGAT
680 Q A D M D K K R F S V F V K P V F N T S L L F L Q C E L T L C T K M
2701 GGAGAAGCACCCCAAGTGGCTAAGTGTGTGCTCTGACGAAGCCTGACCTCGCTGGAGCCTCGATAATCTGGGCCATGTGAGCAATAAGAAG
713 E K H P Q K L P K C V P P D E A C T S L D A S I I W A M M Q N K K

2801 ACGTTACCAAGCCCTTGTCTGTGATCCACCATGAAGCAGAATCTAAAGAAAAAGTCCAAGCATGAAGGAACCAAAATCCAATTTCTCCACCAATTTTCC
747▶ T F T K P L A V I H H E A E S K E K G P S M K E P N P I S P P I F
2901 ATGGTCTGGACACCCTAACCGTGATGGGCATTGCGTTTGCAGCCTTTGTGATCGGAGCACTCCTGACGGGGCCCTTGTGGTACATCTATTCTCACACAGG
780▶ H G L D T L T V M G I A F A A F V I G A L L T G A L W Y I Y S H T G
3001 GGAGACAGCAGGAAGGCAGCAAGTCCCCACCTCCCGCAGCCTCGGAAAACAGCAGTGTGCCACAGCATGGCAGCACGCAGAGCACGCCTTGCTCC
813▶ E T A G R Q Q V P T S P P A S E N S S A A H S I G S T Q S T P C S

NheI (3134)

3101 AGCAGCAGCACGGCTAGCCCAACCCAGCCCAACGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAAACCAACTAGAATGCAGTGA
847▶ S S S T A •

HpaI (3272)

3201 AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAAGTTAACACAACAATTGCATTCAATTTA

EcoRI (3368)

3301 TGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAAACTTTAA

3401 CCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCAC

3501 CTTCTTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGTAGCTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTT

SspI (3607)

SwaI (3621)

3601 TTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCC

3701 CCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGG

141▶ • N R T Y K L P

3801 GGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCC
133▶ I L E E I T T K 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

BstXI (3911)

3901 ACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCA

100▶ C P S V V R I S 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

4001 GACCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCG

66▶ S G I A I A E A C 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

4101 CCCCAGATGGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCAT

33▶ G V H H K N D E 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 (4254)

4201 GGTGGCCCTCTATAGTGAAGTCTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACG

4301 GTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCC

SpeI (4409)

4401 CGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGACT

SnaBI (4537)

4501 GCCAAAACCGCATCATCATGGAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCAATGACTGGGCATAATGCCAGGC

NdeI (4642)

4601 GGGCATTACCCTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGACTGCCAAGTGGGCAGTTTACCCTAAATACTCCACCCAT

4701 TGACGTCAATGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATATTGACGTCAATGGGCGGGGTGCTTGGGCGGTACGCCAGGCAGGCAT

PacI (4828)

SdaI (4820)

BspLU11I (4838)

4801 TTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGAAACCGTAAAAAGGCCGTTGCTGGCGTTT

4901 TTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTCCCC

5001 CTGGAAGCTCCCTCGTGCGTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTCTCATAGCTC

5101 ACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCGTTACGCCGACCCTGCGCTTATCCGGTAAAC

5201 TATCGTCTTGAAGTCCAAACCGTAAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAG

5301 AGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAG

5401 CTCTTGATCCGGCAACAAACCACCGCTGGTAGCGGTGTTTTTTTGTGTTGCAAGCAGCAGATTACGGCAGAAAAAAGGATCTCAAGAAGATCCTTTG

EagI (5588)

PacI (5568) SwaI (5577)

NotI (5587)

5501 ATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAA

5601 AATATCTTTATTTTTCATTACATCTGTGTGGTTTTTTTGTGTAATCGTAACATAACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCA

5701 AAATAGGCTGCCCCAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA