



PstI (6) Bsp120I (7)
SdaI (6) **NcoI (66)** **PstI (91)**
 1 CCTGCAGGGCCCACTAGGTCGCTTGCATGTATCCGATTTCCAGACTGCACCTACTGCTATTGGATAACCATGGGGCTCTCAGCATTCTGCAGTCCTTTGT

BbrPI (114)
 101 CTCTTCCATGTCACGTGGCTCCTGTTACCCAGTCTTTTTCCGCTCTGTTCTCTTAAACTGTTTCCCTTTCCTGGACCTGTCTCTCTCCATGTA

MscI (295)
 201 TATGCTTATATAAAAGCTGCATAGGATAGAAAACACATGGTATTGCTTTCTGAGTACTTCACATAAATAGTAACCTCC AGAGGTGCTTTGGCC AG

EcoRV (311) **SpeI (393)**
 300 TCACTCTGGATATCTGCCAGTGAGAGAGTGAAG AAAAACCAGGAGAGTGAACAAGGGCTCCATTTCATGTGCCCTCAATTTCTAACTAGT

BamHI (514)
 399 TGTCTGTCTCAGACCGTCAGGCAAGCACTTTACCACTGAGCACCGTCTTAGCCCAATGAGTGTCTAGTAGAGATTTAAAGTTTTGTTTTTTAA

499 ACAGTGTGGAGATTGGATCCACGGCTCTGGCCCCATTTTACCACTGAGCTACACTCCAAAGCAGTCGAAATCACAGTGGCCAGGATTGAAA

595 TGATCACTTAGATGCTTTCAGTCTTGATAAGACACTAAATCTTTGCTATCAGTTACTTTCATCTTTAATAACAGAACGTAAGTATAGCAATTTATGAGCA

StuI (796)
 695 TTGTTAGTTAGCATGACACATGCTATATGTTTTCGTCATTATGAATAATGTAACCACAGCAATTACATTGACTTTTTATTATAAAAGGGGGAGGGGAA

795 GGCCTGTCCTTTTTAACTTCTGAGAGGTTTCGATTACTAAGTAAACCTTATGTAGACTTCCATTTGGGAGCTGAGAAAAGCAGAGGATTCAAAAGGG

XbaI (912) **EcoRI (930)** **SphI (979)**
 895 GATGACATTTGCAAAGGCTAGAAAAGCGCTGGGAATTCTACCGGTTAGGGAGGCGCTTTTCCAAAGCAGTCTGGAGCATGCGCTTTAGCAGCCCC

AgeI (1050)
 995 GCTGGCACTTGGCGCTACACAAGTGGCCTCTGGCCTGCACACATTCACATCCACGGTAGGGCCAAACCGGCTCCGTTCTTTGGTGGCCCCCTCGC

SpeI (1185)
 1094 GCCACCTTCTACTCTCCCTAGTCAGGAAGTTCCTCCCGCCCGCAGCTCGCGTCTGTCAGGACGTGACAAATGGAAGTAGCAGCTCTACTAGTC

StuI (1234)
 1192 TCGTGCAGATGGACAGCACCGCTGAGCAATGGAAGCGGTTAGCCCTTTGGGGCAGCGCCAATAGCAGCTTTGCTCCTTCGCTTTCTGGGCTCAGAGGCT

BspEI (1358)
 1292 GGGAAAGGGTGGGTCCGGGGCGGGCTCAGGGCGGGCTCAGGGCGGGCGGGCGGGCCGAAGTCTCCGGAGGCGGGCATTCTGCACGCTTCAAAA

BspHI (1457)
 1391 GCGCACGTCTGTGCGCTGTTCTCTCTCTCCTCATCTCCGGCCCTTTCGACCTCACGGTGTGGCCATCATGAGCGGTTCTCATCATCATCATCATG

Bsu36I (1556) **Acc65I (1551)**
 1490 GTATGGCTAGCATGACTGGTGACAGCAAATGGGTCGGGATCTGTACGACGATGACGATAAGGTACCTAAGGATCAGCTTGGAGTGATCCCCTGCTTTT

111 G M A S M T G G Q Q M G R D L Y D D D D K V P K D Q L G V D P V V L
 1590 ACAACGTCTGACTGGGAAAACCTGGCGTTACCACTTAATCGCCTTGACGACATCCCCCTTTCGCCAGCTGGCGTAATAGCGAAGAGGCCCGCACC

44 Q R R D W E N P G V T Q L N R L A A H P P F A S W R N S E E A R T
FspI (1711)
 1690 GATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCAATGGCGTTCGCTGGTTCGGCCACAGAAGCGGTGCCGAAAAGCTGGCTGGAGTGCGATC

78 D R P S Q Q L R S L N G E W R F A W F P A P E A V P E S W L E C D
Bsu36I (1793)
 1790 TTCCTGAGGCCGATACTGTCTGTCVCCCTCAAACCTGGCAGATGACAGGTTACGATCGCCCATCTACACCAACGTAACCTATCCCATACGGTCAATCC

111 L P E A D T V V L R S N W Q M H G Y D A P I Y T N V T Y P I T V N P
 1890 GCGCTTTGTTCCACGGAGAATCCGACGGGTTGTTACTCGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACCGCAATATTTTTGAT

144 P F V P T E N P T G C Y S L T F N V D E S W L Q E G Q T R I I F D
 1990 GCGTAACTCGGCTTTCATCTGTGGTGAACGGCGGTGGTTCGTTACGGCCAGGACAGTCTGTTGGCTGTAATTTGACCTGAGCGCATTTTTAC

178 G V N A S C F H L W C N R V W V G Y G Q D S R L P S E F D L S A F L
AatIII (2192)
 2090 GCGCCGGAGAAAACCGCTCGGGGTGATGGTCTGCTGGTGGAGTGACGGCAGTTACTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTCCGTGA

211 R A G E N R L A V M V L R W S D G S Y L E D Q D M W R M S G I F R D
 2190 CGTCTGTTGCTGCATAAACCGACTACACAAATCAGCGATTTCATGTTGCCACTCGCTTAAATGATGATTTGAGCCGCGTGTACTGGAGGCTGAAGTT

244 V S L L H K P T T Q I S D F H V A T R F N D D F S R A V L E A E V
 2290 CAGATGTGGCGGAGTGGCTGACTACTACGGTAACGTTCTTTATGGCAGGGTGAACAGCGAGTCCAGCCGCGCTTTCCGGCGGTGAAA

278 Q M C G E L R D Y L R V T V S L W G G E T Q V A S G T A P F G G E
ClaI (2393)
 2390 TTATCGATGAGCGTGGTGGTTATGCCGATCGCGTCACTACTGCTGAAAGCTGAAAACCCGAACTGTGGAGCGCGAAATCCCGAATCTCTATCGTC

311 I D E R G G Y A D R V T L R L N V E N P K L W S A E I P N L Y R A
 2490 GGTGGTTGAACTGCACACCGCCGACGGCAGCTGATTGAAGCAGAAGCTGCGATGTCGGTTCGCGAGGTGCGGATTGAAAATGGTCTGCTGCTGCTG

344 V V E L H T A D G T L I E A E A C D V G F R E V R I E N G L L L L
EcoRV (2682)
 2590 AACGGCAAGCCGTTGCTGATTCGAGGCGTAAACCGTCACGAGCATCATCCTTGCATGGTCAAGTCATGGATGAGCAGACGATGGTGCAGGATATCCTGC

378 N G K P L L I R G V N R H E H P L H G Q V M D E Q T M V Q D I L
DraIII (2759)
 2690 TGATGAAGCAGAACAACCTTAAACCGCTGCGCTGTTCCGATTATCCGAACATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGATGTGGTGA

411 L M K Q N N F N A V R C S H Y P N H P L W Y T L C D R Y G L Y V V D
SspI (2799)
 2790 TGAAGCCAATATTGAAACCCACGGCATGGTCCAAATGAATCGTCTGACCGATGATCCGCGTGGTACCAGGCGATGAGCGAACCGGTAACCGCAATGGTG

444 E A N I E T H G M V P M N R L T D D P R W L P A M S E R V T R M V
BsaBI (2895)
 2890 CAGCGCATCGTAATACCCGAGTGTATCATCTGGTCTGGGGAATGAATCAGGCCAGCGCTAATCACGACGCGTGTATCGCTGGATCAAACTCTG

478 Q R D R N H P S V I I W S L G N E S G H G A N H D A L Y R W I K S
BssHIII (3067)
 2990 TCGATCCTTCCCGCCGGTGCAGTATGAAGCGCGGAGCCGACACCAGCCGATATTTTGGCCGATGACGCGCGTGGATGAAGACCGCC

511 V D P S R P V Q Y E G G G A D T T A T D I I C P M Y A R V D E D Q P
 3090 CTTCCGGCTGTGCCAAATGGTCCATAAAAAATGGCTTTCGCTACTGAGAGACGCCCGCTGATCCTTTGCGAATACGCCACCGATGGGTAAC

544 F P A V P K W S I K K W L S L P G E T R P L I L C E Y A H A M G N
 3190 AGTCTGGCGGTTTCGCTAAATACCTGCGAGCGGTTTCGTGAGTATCCCGCTTACAGGGCGGCTTCGCTGGGACTGGGTGGATCAGTCTGATTAAT

578 S L G G F A K Y Q A F R Q Y P R L Q G G F V W D W V D Q S L I K
 3290 ATGATGAAAACGGCAACCGTGGTGGCTTACGGCGGTGATTTTGGGATACGCCGAACGATCGCCAGTCTGTATGAACGGTCTGCTTTGGCGACCG

611 Y D E N G N P W S A Y G G D F G D T P N D R O F C M N G L V F A D R

Eco47III (3404)
3390 CACGCCGATCCAGCGCTGACGGAAGCAAACACCAGCAGCAGTTTTTCCAGTTCGCTTTATCCGGCAAACCATCGAAGTGACCAGCGAATACCTGTT
644▶ T P H P A L T E A K H Q Q Q F F Q F R L S G Q T I E V T S E Y L F

SacI (3509)
3490 CGTCATAGCGATAACGAGCTCCTGCACCTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTCGCTCCACAAGGTAAC
678▶ R H S D N E L L H W M V A L D G K P L A S G E V P L D V A P Q G K
3590 AGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGGCAACTCTGGCTCACAGTACGCGTAGTGAACCGAACCGCACCATGTCAGAAGC
711▶ Q L I E L P E L P Q P E S A G Q L W L T V R V V Q P N A T A W S E A
3690 CGGGACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGAAAACCTCAGTGTGACGCTCCCGCGCGTCCACGCCATCCCGCATCTGACCACCGCGAA
744▶ G H I S A W Q Q W R L A E N L S V T L P A A S H A I P H L T T S E
3790 ATGGATTTTGCATCGAGCTGGTAATAAGCGTTGGCAATTAACCGCCAGTCAGGCTTTCTTTTACAGATGGATTGGCGATAAAAAACAACCTGCTGA
778▶ M D F C I E L G N K R W Q F N R Q S G F L S Q M W I G D K K Q L L
3890 CGCGCTGCGCATCAGTTCACCCGTCACCGCTGGATAACGACATTGGCGTAAGCGAACCGCATTGACCTAACCGCTGGGTGAAACGCTGGAA
811▶ T P L R D Q F T R A P L D N D I G V S E A T R I D P N A W V E R W K
3990 GCGCGCGGGCATTACCAGGCCAAGCAGCGTTGTCAGTGCACGGCAGATACACTTGTGTGATGCGGTGCTGATTACGACCGCTCAGCGTGGCAGCAT
844▶ A A G H Y Q A E A A L L Q C T A D T L A D A V L I T T A H A W Q H
4090 CAGGGAAAACTTATTATCAGCCGAAAACCTACCGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCAGCGATACCCG
878▶ Q G K T L F I S R K T Y R I D G S G Q M A I T V D V E V A S D T P
4190 ATCCGCGCGGATTGGCTGAACTGCCAGCTGGCGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACATCCCGACCGCTTAC
911▶ H P A R I G L N C Q L A Q V A E R V N W L G L G P Q E N Y P D R L T

Bst1107I (4331)
BspLU11I (4328) BsiWI (4339)
4290 TGCCGCTGTTTTGACCCTGGGATCTGCCATTGTGACACATGTATACCCGCTAGCTTCCCGAGCGAAAACGGTCTGCGCTGCGGGACGCGGAATTG
944▶ A A C F D R W D L P L S D M Y T P Y V F P S E N G L R C G T R E L
4390 AATTATGGCCACACCGAGTGGCGGCGACTTCCAGTTCAACATCAGCCGCTACAGTCAACAGCAACTGATGAAACCGCATGCCATCTGCTGCACG
978▶ N Y G P H Q W R G D F Q F N I S R Y S Q Q Q L M E T S H R H L L H

NdeI (4526)
4490 CGGAAGAAGGCACATGGCTGAATATCGACGGTTCCATATGGGATTGGTGGCGACGACTCCTGGAGCCGTCAGTATCGCGGAATTACAGCTGAGCGC
1011▶ A E E G T W L N I D G F H M G I G G D D S W S P S V S A E L Q L S A

NheI (4648)
EcoRI (4642)
4590 CGGTCGCTACCATTACCAGTTGGTCTGGTGTCAAAAAATAATCTAGTCGAGAACTCGCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAA
1044▶ G R Y H Y Q L V W C Q K •
4690 CCACAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACC

MfeI (4822)
4790 ATTATAAGCTGCAATAAACAGTTAAACAACAATTCATTTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACC

SwaI (4913)
4890 TCTACAAATGTGGTAGATCCATTTAAATGTTAATTAAGTCCATGACCAAAATCCCTTAACGTGAGTTTTCTGTTCCACTGAGCGTCAGACCCCGTAGAA
4990 AAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGAACAACAAAAAACCCGCTACCAGCGGTGGTTTTGTTGCCGGATC
5090 AAGAGCTACCAACTCTTTTTCCGAAGGTAAGTGGCTTACGACAGCGCAGATACCAAATACTGTTCTTCTAGTGTAGCGTAGTTAGGCCACCACCTCAA
5190 GAACTCTGTAGCACCGCTACATACCTCGCTCTGCTAATCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCGTGCTTACCAGGTTGGACTCAAGA
5290 CGATAGTTACCGGATAAAGCGCAGCGGTGGGCTGAACGGGGGTTCTGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACTAC
5390 AGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCT
5490 TCCAGGGGAAACCGCTGGTATCTTTATAGTCTGCTGGGTTTCCGCACCTCTGACTTGGCGTCTGATTTTTGTGATGCTCGTCAGGGGGCGGAGCCTA

BspLU11I (5651) **AseI (5689)**
5590 TGGAAAAACGCCAGCAACCGCCCTTTTTACGGTTCCTGGCCTTTTGTGCTGCTTTTGTGCTCAGTGTCTTAATTAATTTTTCAAAGTAGTTGACAAT

SfiI (5740) MscI (5751)
5690 TAATCATCGGCATAGTATATCGGCATAGTATAATACGACTCACTATAAGGAGGGCCATCATGGCCAAGTTGACCAGTGTGTCCAGTGTCTCACAGCCAGG
5790 GATGTGGCTGGAGCTGTTGAGTTCTGACTGACAGGTTGGGTTCTCCAGAGATTTTGTGGAGGATGACTTTGCAGGTGGTTCAGAGATGATGTACCC
15▶ D V A G A V E F W T D R L G F S R D F V E D D F A G V V R D D V T
5890 TGTTTCATCTCAGCAGTCCAGGACCGGTGGTGCCTGACAACACCTGGCTTGGGTGTGGTGGAGGACTGGATGAGCTGTATGCTGAGTGGAGTGGGT
48▶ L F I S A V Q D Q V V P D N T L A W V W V R G L D E L Y A E W S E V
5990 GGTCTCCACCAACTTCCAGGATGCCAGTGGCCCTGCCATGACAGAGATTGGAGAGCAGCCCTGGGGAGAGAGTTTGCCTGAGAGACCCGACGAGGCAAC
81▶ V S T N F R D A S G P A M T E I G E Q P W G R E F A L R D P A G N

DraIII (6101) **SfiI (6149)**
6090 TGTGTGCACTTTGTGGCAGAGGAGCAGGACTGAGGATAAGAATTGAGTTTCAGAAAAGGGGGCCTGAGTGGCCCCTTTTTCAACTTAATTA
115▶ C V H F V A E E Q D •