



PvuI (7)
SgfI (6)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGGGGTAAGTGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTAAAGTCAAGTGCAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

KasI (535) **AgeI (552)** **NcoI (568)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCCGGTAGGAGGGCCACCATGGTTCTCCGTGCAAGGACTCTGCACCCC
1 M V L R R R T L H P

Acc65I (648)
601 TTGTCCTCTGTCACAGCTGCAGTGTGGTGCAGACTCTGGCCTGGGTACCTGCCTGCCTTCTACCTGTGAGCTGAAGCCTCATGGCCTGGTGG
11 L S L L V Q A A V L A E T L A L G T L P A F L P C E L K P H G L V
701 ACTGCAATTGGCTGTTCTGAAGTCTGTACCCCGTTTCTGCGGCAGCATCTGCTCCAACATCACCCGCCTCTCCTGATCTCCAACCGTATCCACCA
44 D C N W L F L K S V P R F S A A A S C S N I T R L S L I S N R I H H

Tth11II (813)
801 CCTGCACAACCTCCGACTTCGTCCACCTGTCCAACCTGCGGCAGCTGAACCTCAAGTGGAACTGTCCACCCACTGGCCTTAGCCCCCTGCACCTTCTTTGC
77 L H N S D F V H L S N L R Q L N L K W N C P P T G L S P L H F S C
901 CACATGACCATTGAGCCAGAACCTTCTGGCTATGCTACACTGGAGGAGCTGAACCTGAGCTATAATGGTATCACCCTGTGCCCGACTGCCAGCT
111 H M T I E P R T F L A M R T L E E L N L S Y N G I T T V P R L P S

XbaI (1040) **NgoMIV (1059)**
1001 CCCTGGTGAATCTGAGCCTGAGCCACACCAACATCCTGTTTCTAGATGCTAACAGCCTCGCCGCCTATACAGCCTGCGCCTTCTTTCATGGACGGGAA
144 S L V N L S L S H T N I L V L D A N S L A G L Y S L R V L F M D G N

KasI (1146)
BstEII (1136)
1101 CTGCTACTACAAGAACCCTGCACAGGAGCGGTGAAGGTGACCCAGGCGCCCTCTGGGCTGAGCAATCTACCCATCTGTCTCTGAAGTATAACAAC
177 C Y Y K N P C T G A V K V T P G A L L G L S N L T H L S L K Y N N
1201 CTCACAAAGTCCCCGCCAACCTGCCCCAGCCTGGAGTACCTCTGGTGTCTATAACCTCATTGTCAAGCTGGGGCTGAAGACCTGGCCAATCTGA
211 L T K V P R Q L P P S L E Y L L V S Y N L I V K L G P E D L A N L

SeaI (1310)
1301 CCTCCCTTCGAGTACTTGATGTGGGTGGGAATTGCCGTGCTGCGACCATGCCCCCAATCCCTGTATAGAATGTGGCCAAAAGTCCCTCCACCTGCACCC
244 T S L R V L D V G G N C R R C D H A P N P C I E C G Q K S L H L H P
1401 TGAGACTTCCATCACCTGAGCCATCTGGAAGGCTGGTGTGCTGAAGKACACTCTCCATACACTGAACCTTCTCCTGTTTCCAAGGCTGTGGTCAACCT
277 E T F H H L S H L E G L V L K D S S L H T L N S S W F Q G L V N L

FspI (1576)
1501 TCGGTGCTGGACCTAAGCGAGAAGTCTCTCTAATGAAAGCATCAACACACCAATGCCTTTGAGAAGTAAACCCGCTGCGCAAGCTCAACCTGTCCCTTCA
311 S V L D L S E N F L Y E S I N H T N A F Q N L T R L R K L N L S F
1601 ATTACCGAAGAAGTATCCTTTGCCCGCTCCACTGGCAAGTTCCTTCAAGAACCTGGTGTCACTGAGGAGCTGAACATGAACGGCATCTTCTTCCG
344 N Y R K K V S F A R L H L A S S F K N L V S L Q E L N M N G I F F R
1701 CTCGCTCAACAAGTACAGCTCAGATGGCTGGCCGATCTGCCAAACTCCACACTCTGCATCTTCAAATGAACCTCATCAACCAGGCACAGCTCAGCAT
377 S L N K Y T L R W L A D L P K L H T L H L Q M N F I N Q A Q L S I

Acc65I (1803)
1801 TTTGGTACCTTCCGAGCCCTTCGCTTTGTGACTTGTGACAGACAATCGCATCAGTGGGCTTCAACGCTGTGAGAAGCCACCCCTGAAGAGGCAGATGATG
411 F G T F R A L R F V D L S D N R I S G P S T L S E A T P E E A D D

BamHI (1925) **NcoI (1999)**
1901 CAGAGCAGGAGGAGCTGTTGCTGCGGATCCTCACCCAGCTCCACTGAGCACCCTGCTTCTAAGAAGTTCATGGACAGGTGTAAGAAGTTCAGTTTCA
444 A E Q E E L L S A D P H P A P L S T P A S K N F M D R C K N F K F T
2001 CATGGACCTGTCTCGAAACAACCTGGTACTATCAAGCCAGAGATGTTTGTCAATCTCTCAGCCTCCAGTGTCTTAGCCTGAGCCACAACCTCCATTGCA
477 M D L S R N N L V T I K P E M F V N L S R L Q C L S L S H N S I A

XmnI (2186)
2101 CAGGCTGCAATGGCTCTCAGTCTCTGCCGCTGACTAATCTGCAGGTGCTGGACCTGTCCATAACAAGTGGACTTGTACCCTGGAATCGTTCAGT
511 Q A V N G S Q F L P L T N L Q V L D L S H N K L D L Y H W K S F S
2201 AGTACCACAGTTGACGGCCTGGACCTGAGCTACAACAGCCAGCCCTTTAGCATGAAGGGTATAGGCCACAATTTAGTCTTTGTTGGCCCATCTGTCCAT
544 E L P Q L Q A L D L S Y N S Q P F S M K G I G H N F S F V A H L S M
2301 GCTACACAGCCTTAGCCTGGCACACAATGACATTCATACCCGTGTGCTCCTCACATCTCAACAGCAACTCAGTGAAGTCTTCTGACTTCAGCGGCAACGGT
577 L H S L S L A H N D I H T R V S S H L N S N S V R F L D F S G N G

SfiI (2448)
2401 ATGGGCCGATGTGGGATGAGGGGGGCTTTATCTCCATTTCTTCCAAGGCTGAGTGGCCTGCTGAAGCTGGACCTGTCTCAAATAACCTGCATATCC
611 M G R M W D E G G L Y L H F F Q G L S G L L K L D L S Q N N L H I
2501 TCCGGCCCGAGAACCTTGACAACCTCCCAAGAGCCTGAAGCTGCTGAGCCTCCGAGACAACCTACCTATCTTTCTTTAACTGGACCTGTGTCTCTCT
644 L R P C Q N L D N L S A D P H K S L K L L S L R D N Y L S F L N W T S L S F L
2601 G C C C A A C C T G G A A G T C C T A G A C C T G G C A G G C A A C C A G T A A A G G C C T G A C C A R D N Y L S F L N W T S L S F L
677 P N L E V L D L A G N Q L K A L T N G T L P N G T L L Q K L D V S
2701 AGCAACAGTATCGTCTGTGGTCCAGCCTTCTCGCTGCGGGTGCAGCTGAAAGAGGTCAACCTCAGCCACAACATTCTCAAGCAGGTGGATCGCT
711 S N S I V S V V P A F F A L A V E L K E V N L S H N I L K T V D R

Bsp120I (2808) **XbaI (2834)**
2801 CCTGGTTTGGGCCATTGTGATGAACCTGACAGTCTAGACGTGAGAAGCAACCTCTGCACTGTGCCTGTGGGGCAGCCTTCGTAGACTTACTGTTGGA
744 S W F G P I V M N L T V L D V R S N P L H C A C G A A F V D L L L E

2901 GGTGCAGACCAAGGTGCCTGGCCTGGCTAATGGTGTGAAGTGTGGCAGCCCCGGCCAGCTGCAGGGCCGTAGCATCTTCGCAAGACCTGCGGCTGTGC
777▶ V Q T K V P G L A N G V K C G S P G Q L Q G R S I F A Q D L R L C
3001 CTGGATGAGGTCTCTCTTTGGGACTGCTTTGGCCTTTCACTCTTGGCTGTGGCCGTGGGCATGGTGGTGCCTATACTGCACCATCTCTGCGGCTGGGACG
811▶ L D E V L S W D C F G L S L L A V A V G M V V P I L H H L C G W D
3101 TCTGGTACTGTTTTATCTGTGCCTGGCATGGTACCTTTGCTGGCCCGCAGCCGACGCGCCCAAGCTCTCCCTATGATGCCTTCGTGGTGTTCGA
844▶ V W Y C F H L C L A W L P L L A R S R R S A Q A L P Y D A F V V F D
3201 TAAGGCACAGAGCGAGTTGGGACTGGGTGTATAACGAGCTGCGGGTGGGCTGGAGGAGCGCGCGGTCGCCGAGCCCTACGCTTGTGTCTGGAGGAC
877▶ K A Q S A V A D W V Y N E L R V R L E E R R G R R A L R L C L E D

Th111I (3390)

RsrII (3388)

3301 CGAGATTGGCTGCCTGGCCAGACGCTCTTCGAGAACCTCTGGGCTTCCATCTATGGGAGCCGCAAGACTCTATTTGTGCTGGCCACACGGACCGCTCA
911▶ R D W L P G Q T L F E N L W A S I Y G S R K T L F V L A H T D R V

FspI (3409)

BspEI (3485)

3401 GTGGCCTCTGCGCACAGCTTCTCTGCTGGCTCAGCAGCGCTGTTGGAAGACCAGGACGTGGTGGTGGTGGTATCCTGCTCCGGATGCCACCCG
944▶ S G L L R T S F L L A Q Q R L L E D R K D V V V L V I L R P D A H R

Bsp120I (3586)

3501 CTCCCCTATGTGCGACTGCGCCAGCGTCTCTGCCCCAGAGTGTGCTTCTGGCCCGCAGCAGCCCAACGGGAGGGGGCTTCTGGCCCGAGCTGAGT
977▶ S R Y V R L R Q R L C R Q S V L F W P Q Q P N G Q G G F W A Q L S

NheI (3694)

3601 ACAGCCCTGACTAGGACAACCGCCACTTCTATAACGAGAAGTCTGCGGGGACCTACAGCAGAATAGCTCAGAGCAACAGCTGAAACAGCTGCTAGC
1011▶ T A L T R D N R H F Y N Q N F C R G P T A E •

3701 TGGCCAGACATGATAAGATACATTGATGAGTTTGGACAACCACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTT

HpaI (3832)

3801 TATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACCAATTGCATTCATTTATGTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTAAAG

EcoRI (3928)

3901 CAAGTAAACCTCTACAAATGTGGTATGGAATTTCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGA

4001 TGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAG

SspI (4167)

SwaI (4181)

4101 GTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCA

4201 ATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTT

4301 AATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGTTGACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATT

141▶ • N R T Y K L P I L E E I T T K V L K G N

SacI (4442)

4401 CATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGTAGCTCTGTCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCA

120▶ M E 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

4501 GAGTAGGGGTGCCTGACAGCCCAATGGTGTCAAAGTCTTCTGCCCCTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGC

86▶ S Y 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

4601 CAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTGCTCATAGAGCATGGTGTAT

53▶ I Y 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

BspHI (4756)

XmnI (4748)

4701 CTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGAAGTATTACTATGCGCAT

20▶ K E T A V E V L E L D Q Q S I N F T K M

AseI (4814)

SacI (4871)

4801 ATACTATGCCGATGATTAATGTCAAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAAGAGCTCTGCTTATATAGACCTCCACCGT

SpeI (4969)

4901 ACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCCATTGACGTCA

SnaBI (5097)

5000 ATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATA

5100 CGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTGATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACT

NdeI (5202)

5200 TGGCATATGATACTTGTGACTGCAAGTGGGCGTTCACGTAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGA

SdaI (5380)PacI (5388)

5300 ACATACGTCATTATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAA TTAAG

BspLU11I (5398)

5398 AACATGTGAGCAAAAGCCAGCAAAAGCCAGGAACCGTAAAAAGCCGCTGCTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAA

5498 ATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGTCCCTCGTGGCTCTCTGTTCCGACCT

5598 GCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCG

ApaLI (5712)

5698 TCCAAGCTGGGCTGTGTGCAGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACATCGTCTTGTAGTCCAACCCGGTAAGACAGACTTAT

5798 CGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAG
5898 AAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGT
5998 GGTTTTTTTGTGGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAA

EagI (6148)

PacI (6128) **SwaI (6137)** **NotI (6147)**

6098 ACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTT
6198 TTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAAGTGCCAGAA
6298 CATTCTCTATCGAA