



PvuI (7)
SgfI (6) **EcoNI (96)**
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **PvuII (239)** **EcoNI (287)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCCTTACGCGCCCGCGCCCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) **AgeI (552)** **BspHI (568)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTAGGAGGGCCATCATGAAAGGGTTCCTCTTATCTAATGTAC
1 M K G C S S Y L M Y

PshAI (610) **PstI (680)**
601 TCCTTTGGGGGACTTTTGTCCCTATGGATTCTTCTGGTGTCTCCACAAACCAATGCACTGTGAGATACAACGTAGTGTACTGCAGCCATTTGAAGCTAA
11 S F G G L L S L W I L L V S S T N Q C T V R Y N V A D C S H L K L
701 CACACATACTGATGATCTTCCCTCTAACATAACAGTGTGAATCTTACTCACAACCAACTCAGAAGATTACCACCTACCAACTTTACAAGATACAGCCA
44 T H I P D D L P S N I T V L N L T H N Q L R R L P P T N F T R Y S Q

XcmI (829)
801 ACTTGCTATCTTGGATGCAAGATTTAACTCCATTTCAAAAAGTGGAGCCAGAAGTGTGCCAAAATACTCCCTTTGTTGAAAGTATTGAACCTGCAACATAAT
77 L A I L D A G F N S I S K L E P E L C Q I L P L L K V L N L Q H N
901 GAGCTCTCAGATTTCTGATCAAACTTTGTCTTCTGACGAACTGACAGAAGTCTGATCTAATGTCTAACTCAATACACAAAATTAAGCAACCCCTT
111 E L S Q I S D Q T F V F C T N L T E L D L M S N S I H K I K S N P
1001 TCAAAAACAGAAGAATCTAATCAAATAGATTTGTCTCATAATGTTTATCATCTACAAAAGTGGGAACGGGGTCCAAGTGGAGAAGCTCCAAGAAGT
144 F K N Q K N L I K L D L S H N G L S S T K L G T G V Q L E N L Q E L
1101 GCTCTTAGCAAAAATAAAATCCTTGCCTTGCAGAGTGAAGAAGTGTGAGTTTCTTGGCAATCTCTTTCGAAAAGTGGACTTGTATCAAATCCACTT
177 L L A K N K I L A L R S E E L E F L G N S S L R K L D L S S N P L

XmaI (1211) **BstXI (1223)**
1201 AAAGAGTTCTCCCGGGGTGTTCCAGACAATTGGCAAGTATTTCGCCCTCCTCTTGAACAACGCCCAACTGAACCCCACTCACAGAGAAGCTTTGCT
211 K E F S P G C F Q T I G K L F A L L L N N A Q L N P H L T E K L C

PvuII (1347)
1301 GGGAACTTCAAACAAGCATCCAGAATCTCTCTGCTAACAACAGCTGCTGCCACCAGCGAGAGCACTTTCTCTGGGCTGAAGTGGACAAATCT
244 W E L S N T S I Q N L S L A N N Q L L A T S E S T F S G L K W T N L
1401 CACCAGCTCGATCTTCTCACAACAACCTCCATGATGTCGGCAACGGTTCCTTCTCCTATCTCCAAGCCTGAGGTATCTGTCTCTGGAGTACAACAAT
277 T Q L D L S Y N N L H D V G N G S F S Y L P S L R Y L S L E Y N N

Acc65I (1546)
1501 ATACAGCTGTGCTCCCTCGCTCTTTTTATGGACTCTCCAACCTGAGGTACTGAGTTTGAAGCGAGCATTTACTAAGCAAAGTGTTCACCTGCTTCAC
311 I Q R L S P R S F Y G L S N L R Y L S L K R A F T K Q S V S L A S
1601 ATCCCAACATTGACGATTTTTCCTTCAATGGTAAAAATTTGGAATATCTCAACATGGATGACAATAATATTTCAAGTACCAAAAGCAATACCTTTCAC
344 H P N I D D F S F Q W L K Y L E Y L N M D D N N I P S T K S N T F T
1701 GGGATTGGTGAGTCTGAAGTACCTAAGTCTTCCAAAAGTTCACAAGTTTGCAAAATTAACAAATGAAACATTTGTGCTCACTTGTCTCATTCTCCCTTG
377 G L V S L K Y L S L S K T T T S L Q T L T N E T F V S L A H S P L
1801 CTCCTCTCAACTTAACGAAAAATCACATCTCAAAAATAGCAATGGTACTTTCTTGGTTAGGCCAACTCAGGATACTTGTCTCGGCCTTAATGAAA
411 L T L N L T K N H I S K I A N G T F S W L G Q L R I L D L G L N E

BglII (1951)
1901 TTGAACAAAACTCAGCGCCAGGAATGGAGAGTCTGAGAAATATTTGAGATCTACTTCTATAACAAATACCTCCAAGTGTCTACCAGTTTCCTT
444 I E Q K L S G Q E W R G L R N I F E I Y L S Y N K Y L Q L S T S S F

EcoRV (2058)
2001 TGCATTGGTCCCAAGCCTTCAAAGACTGATGCTCAGGAGGGTGGCCCTTAAAAATGTGGATATCTCCCTTACCTTTCCGCCCTTTCGTAACCTTGACC
477 A L V P S L Q R L M L R R V A L K N V D I S P S P F R P L R N L T

XbaI (2165)
2101 ATTCTGGACTTAAGCAACAACAATAGCCAACATAAATGAGGACTTGTGGAGGGTCTTGAAGTCTAGAAATCCTGGATTTTCAGCACAATAAAGT
511 I L D L S N N N I A N I N E D L L E G L E N L E I L D F Q H N N L
2201 CCAGGCTCTGAAACGCGCAAAACCCGGTGGTCCCGTTAATTTCTGAAGGGGCTGTCTCACCTCCACATCTTGAATTTAGAGTCCAACGGCTTAGATGA
544 A R L W K R A N P G G P V N F L K G L S H L H I L N L E S N G L D E

BstBI (2328)
Bsp119I (2328)
2301 AATCCCAGTCGGGGTTTTCAAGAAGTATTTCGAACTAAAGAGCATCAATCTAGGACTGAATAACTTAAACAAACTTGAACCACTTCAATTTTGTGACCCAG
577 I P V G V F K N L F E L K S I N L G L N N L N K L E P F I F D D Q
2401 ACATCTTAAGGTCACTGAACCTCAGAAGAACCTCATAACATCTGTTGAGAAGGATGTTTTCGGGCCGCTTTTCAAAAACCTGAACAGTTTATAGATGC
611 T S L R S L N L Q K N L I T S V E K D V F G P P F Q N L N S L D M

BbrPI (2519) **HpaI (2544)**
2501 GCTTCAATCCGTTTCGACTGCAGTGTGAAAGTATTTCTGGTTTGTAACTGGATCAACCAGACCCACACTAATATCTCTGAGCTGTCCACTCACTACCT
644 R F N P F D C T C E S I S W F V N W I N Q T H T N I S E L S T H Y L
2601 CTGTAACACTCCACATCATTATTATGGCTTCCCTGAAAGCTTTTCTGATACATCATCTGTAAAGACAGCGCCCTTTGAACTCCTTCTCATAATCAGC
677 C N T P H H Y Y G F P L K L F D T S S C K D S A P F E L L F I I S

XcmI (2701)
2701 ACCAGTATGCTCCTGTTTTTACTTGTGGTACTGCTCATTACATCGAGGGCTGGAGGATCTTTTTTACTGGAATGTTTCAGTGCATCGGATTTCTG
711 T S M L L V F I L V V L L I H I E G W R I S F Y W N V S V H R I L

Tth111I (2874)

2801 GTTTCAAGGAAATAGACACACAGGCTGAGCAGTTTGAATATACAGCCTACATAATTCATGCCATAAAGACAGAGACTGGGTCTGGGAACATTTCTCCCC
744▶ G F K E I D T Q A E Q F E Y T A Y I I H A H K D R D W V W E H F S P
2901 AATGGAAGAACAAAGACCAATCTCTCAAATTTTGGCTAGAAGAAAGGACTTTGAAGCAGGCGTCTTGGACTTGAAGCAATTGTTAATAGCATCAAAGA
777▶ M E E Q D Q S L K F C L E E R D F E A G V L G L E A I V N S I K R
3001 AGCCGAAAAATCATTTCGTTATCACACACCATTTATTTAAAAGACCCTCTGTGAGAAGATTCAGGTACATCACGCAGTTCAGCAAGCTATTGAGCAA
811▶ S R K I I F V I T H H L L K D P L C R R F K V H H A V Q Q A I E Q
3101 ATCTGGATTCAATTATACTGATTTTTCTCCAGAATATCCAGATTATAAACTAAACCATGCACCTCTGTTTGCGAAGGGAATGTTAAATCTCATTGCAT
844▶ N L D S I I L I F L Q N I P D Y K L N H A L C L R R G M F K S H C I

EcoRI (3272)

3201 CTTGAACTGGCCAGTTCAGAAAGAACGGATAAATGCCTTTTCATATAAATTGCAAGTAGCACTTGGATCTCGGAATTCAGCACATTAACCTCATTGAAAG
877▶ L N W P V Q K E R I N A F H H K L Q V A L G S R N S A H •

NheI (3318)

3301 ATTTGAGTTCGGTAAAGGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTT

HpaI (3456)

3401 GTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACAAATTGCATTCAATTTATGTTTCAGGTTTCAGGG

EcoRI (3552)

3501 GGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAACCTTTAACCTCCAATCAAGCCT
3601 CTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTT

SapI (3734)

3701 TAAGATATAGTGTATTTTCCAAGGTTTGAAGTCTCTTCATTTCTTTATGTTTAAATGCAGTGCCTCCACATTCCTTTTATGAAAAATATTCAG

SwaI (3805) **EcoO109I (3866)**

3801 AAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTG
3901 GACTTAGGGAACAAAGGAACCTTAAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAAT
141▶ • N R T Y K L P I L E E I

BstXI (4095)

4001 GGTGGTTTTGACCAGCTTGCATTTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACC
128▶ 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 C P S V V
4101 CTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGG
94▶ 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 S G I A I A

StuI (4230)

4201 CTTAGCAGACAGCAGTGACCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTGCTT
61▶ 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 G V H H K
4301 GTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAG
28▶ 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 (4438)

4401 TGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCT

SpeI (4593)

4501 CTGCTTATATAGACCTCCCACCGTACACGCTACCGCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTC
4601 AAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCAT

SnaBI (4721)

4701 CATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCA

NdeI (4826)

4801 TTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAG
4901 TCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGT

Pacl (5012)

PstI (5005)

SdaI (5004) **BspLU11I (5022)**

5001 AACGCCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCATAGGCTCCGCC
5101 CCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGT
5201 GCGCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGGAAGCGTGGCGTTTCTCATAGCTCACGCTGTAGGTATCTC

ApaLI (5336)

5301 AGTTCGGTGTAGGTGTTCCGCTCCAAGCTGGGCTGTGTGCAGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCA
5401 ACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTG
5501 GCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAA
5601 CAAACCACCGCTGGTAGCGGTGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGT

EagI (5772)

PacI (5752) SmaI (5761) **NotI (5771)**

5701 CTGACGCTCAGTGGAACGAAAACACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTCA

5801 TTACATCTGTGTGTTGGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCA

5901 GTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA