



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82) EcoNI (96)

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGCC
PvuII (239) EcoNI (287) **Bsu36I (291)**

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
NaeI (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) **AgeI (552)** **BspHI (560)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTCATCATGAAACTTATCAGAAGCATTACATATTTTGTGGTAT
601 TGTCATGTGAGTGCATGGAAGACTTCAGAGCTGCCAGAAGAAAGGAATTGACTACCAACTGCTCCAACATGCTTTAAGAAAGGTTCCACAGCTTG
1 M K L I R S I Y I F C G I
13 V M S V H G R T S E L P E E R E L T T N C S N M S L R K V P T D L

XcmI (707)
701 ACCCCAACCAACACACTGGATTTATCCTACAACCTCCTTTTCAACTCCAGCATTGAGATTTTATTCTTTCTCAAACTAAAAATTTGATTCTGT
47 T P T T T L D L S Y N L L F Q L Q H S D F H S F S K L K I L I L

EcoRI (838)
801 GCCATAACAGAATCCAAGAGCTGGACATCAAGACCTTTGAATTCACAAGGAGTTACAATATTTAGATGTGTCTTACAATAGACTGAAGACTGTAAGCTG
80 C H N R I Q E L D I K T F E F N K E L Q Y L D V S Y N R L K T V T W

SphI (953)
901 GTATTCACAGCAAGTCTCAGACAGTTGGATCTGTCTTCAATGACTTTGACAGCATGCCTATCTCCGAGGAGACGGGCAACATGTCACACCTGGAAATC
113 Y S L A S L R Q L D L S F N D F D S M P I S E E T G N M S H L E I
1001 CTGGTTTGGAGTGGCCAAAATACGAAAATCAGATTTCCAGAAAATGCTCATTGTCATCTAAATACTGTCTTTTGGATTGAGAAGCTTTTCTCATT
147 L G L S A A K I R K S D F Q K I A H L H L N T V F L G L R T L S H
1101 ATGAAGAAGGTAGCTGCCATCTTAAACACAACAAAACCTTACATTGTTTTACCAATAAACACAATTTCTGGGATCTTTGCGTGATGGAATCAAGAC
180 Y E E G S L P I L N T T K L H I V L P I I N T N F W D L L R D G I K T

XbaI (1224) **BspHI (1251)**
1201 TTCAAAAATATTGAAATGACGAATCTAGATGGCAAAAGCCAATTTGCAAGTCATGAAACTCAACAAAACCTTATTTTAGAGAATGCCAAGACATCCATT
213 S K I L E M T N L D G K S Q F A S H E T Q Q N L I L E N A K T S I
1301 CTGTTACTTAATAAAGTTGATTTACCCTGGGATGACCTTTTCTTATCTTACAATTTGTTGGCACACATCAGTAGAATACTCCAGATCCAACATGTGA
247 L L L N K V D L P W D D L F L I L Q F V W H T S V E Y F Q I Q H V

BsrGI (1479)
1401 TTTTGGAGGCAAGGTTTATCTTGATCACAATTCATTTGACTACTCAAATACTGTAATGAGAAGTATAAACTGGAGCATGTACATTTAGGGTTTTTAA
280 I F G G K V Y L D H N S F D Y S N T V M R T I N L E H V H F R V F N
1501 TATCCACAGGAGAGAGTCTACTTGTCTTTTACAAAATGGCTATAGACAATCTGACAATATAGATGCACAAATGCCTCACATGTTGTTCCCTACTTAT
313 I P Q E R V Y L L F T K M A I D N L T I L D A Q M P H M L F P T Y
1601 CCTACAAGATTCCAATACTTAAATTTGCTAGTAATATCTTTACAGATGACGTGTTTAGAAAACCTGTCCAAGTGCCTCATTGAAAACCTCATTGTTGA
347 P T R F Q Y L N F A S N I F T D D V F R K P V Q L P H L K T L I L

BglII (1767)
1701 AGGACAACAAATGGAGACACTTTCCTTAGTGAGTTGCTTTGTGAGAAACACATCCTTAGAACACTTAGATCTGAGCCAAAATCTGTTACAATATGAAAA
380 K D N K L E T L S L V S C F V R N T S L E H L D L S Q N L L Q Y E N
1801 TGATGAAAAGTGTGTGGCCAGAACTTTGATCACCATGAAGTGTGCTTCAATAAACTTGTGATTCGGTTTTCCAGGTGCTGGCCAGAAATATTCAA
413 D E K C L W P E T L I T M N L S F N K L A D S V F R C L P R N I Q
1901 ATGCTTGACCTGAATAATAACAACATTCACACTGTCCCTAAAGAAATTTATCTGACATCTTACAAGAGTTAAATCTTGCAATTAACCTTCTAAGT
447 M L D L N N N I H T V P K E I I H L T S L Q E L N L A F F N F L T
2001 ATCTTCTGGGTGCACTATTTGAGAAGACTCTCAGTTCTGAACATTGAGATGAAGTAAATCCTCAGCCGCTGGTGGATTTTTTTCAGAGTTGCCAGGA
480 D L P G C S H F R R L S V L N I E M N L I L S P S V D F F Q S C Q E
2101 AGTTAAGACTTTAAACGCGGGAGGAAATCCATTCGGGTGACTTGTGAATTAAGAGATTTTCCAGCTTGAATAATTTAGAGGGCATGATGGTTGGG
513 V K T L N A G G N P F R C T C E L R D F I Q L E K Y S E G M M V G

BsaBI (2257) **BsaBI (2298)**
2201 TGGTCAGATTCATACATCTGCGAATACCCTTTGGATCTAAAGGGGACTCAGCTAAAAGATGTTTCATCTTTCTGAATTATCTTGAACATAGCTTTGTTGA
547 W S D S Y I C E Y P L D L K G T Q L K D V H L S E L S C N I A L L
2301 TTGTCATCATAGTATTATCATGCTAGTTCTGGGGATGGCTGTGGCCCTCTGCTGCTCCGCTTTGATCTGCCCTGGTATCTCAGAATGCTGGGTGAGTG
580 I V I I V I I M L V L G M A V A L C C L R F D L P W Y L R M L G Q W

BbrPI (2464)
2401 GGCACGGACATGGTACAGGGTTAGGAAAACAACCAAGGACAACCTCAAGAGAATATTCAATTCACGTTGTTATTTTCTGTGAACATGATTCGGCC
613 A R T W Y R V R K T T Q G Q L K R N I Q F H V F I S F C E H D S A

XbaI (2526) **BspHI (2562)**
2501 TGGGTAAGCATGAATTGATTTCCCAATCTAGAGAAAGAAGATGGTTCTGCTGCTGATTTGCTTTTCAAGGAACTCTGATCCTGGCAAGAGCATTACTG
647 W V K H E L I P N L E K E D G S V L I C F H E G N S D P G K S I T

EcoRV (2602)
2601 AAGATATCATAAACTGCATGGAGAAAAGCTCTAAGTCCATCTTTGTTTTGTCTCCCAATTTCTCCAGAGCGAGTGGTGGCCACTATGAAGCTCTACTTTGG
680 E D I I N C M E K S S K S I F V L S P N F V Q S E W C H Y E L Y F G
2701 CCACCACCCTCTCCATAAAGGGTCTGATGACATAATTCTTATCTTACTGGAACCCATTCCACTCTACTGATTCCTACCAGGTATCTGCACTGAAA
713 H H H L F H K G S D D I I L I L L E P I P L Y C I P T R Y P A L K

2801 GCTCTCATGAAAAGAAAGCATATTTGGAATGGCCAAGGATAGGCGTAAATGTTGCCTTTTTGGGCAAACCTTAGAGCTGCTATTTCATGTTAATCTAT
747▶ A L M E K K A Y L E W P K D R R K C C L F W A N L R A A I H V N L

XhoI (2954)

2901 TAGAAACCAGAGAGGTGTGTGAACCTACAGACATTCACAGAGCTGAATGAAGGGTCTCGAGGTTCTGCAATATCTCTGATAAAAAACAGACTGCCTATAAAG
780▶ L E T R E V C E L Q T F T E L N E G S R G S A I S L I K T D C L •

NheI (3014)

3001 CCCACCTATGCCTGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGA

HpaI (3152) MfeI (3163)

3101 AATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACACAACAATTGCATTCAATTTATGTTTCAGGTTTCAGGGGAG

EcoRI (3248)

3201 GTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTAC

3301 TTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTTAAAG

3401 ATATAGTGATTTTCCCAAGGTTGAACTAGCTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAAT

SwaI (3501) EcoO109I (3562)

3501 AATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACT

3601 TAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTG
141▶ • N R T Y K L P I L E E I T

SacI (3762) BstXI (3791)

3701 GTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGGTACCACCTGA
126▶ 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 R I

3801 TGGATCTGTCACCTCATCAGAGTAGGGTGCCTGACGACCAATGGTGTCAAAGTCTTCTGCCGTTGCTCAGCAGACCAATGGCAATGGCTTC
93▶ 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 E

StuI (3926)

3901 AGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGGTGTG
60▶ 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 V H H K N

BspHI (4076)

4001 TCCTCATAGAGCATGGTGTCTTCTCAGTGGGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAG
26▶ 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 (4134) SacI (4191)

4101 TCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCACTAAACGAGCTCTGC

SpeI (4289)

4201 TTATATAGACCTCCACCGTACACGCCTACCGCCATTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAA
4300 ACAAACCTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCAT

SnaBI (4417)

4400 GGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTG

NdeI (4522)

4500 ACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGCGAGTTTACCGTAATACTCCACCATTGACGTCAATGAAAGTCC
4600 CTATTGGCGTTACTATGGGAACATACGTCAATATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAAC

PstI (4701) SdaI (4700) PacI (4708)

4700 GCCTGCAGGTTAA TTAAGAACATGTGAGCAAAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGCGTTTTTCCATAGGCTCCGCC
4798 CCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGT
4898 CGCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCAGCTGTAGGTATCTCA

ApaLI (5032)

4998 GTTCGGTGTAGGTCGTTCTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTGAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAA
5098 CCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGG
5198 CCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAAC
5298 AAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTC

EagI (5468) PacI (5448) SwaI (5457) NotI (5467)

5398 TGACGCTCAGTGGAAACGAAAACCTACGTTAAGGGATTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCAT
5498 TACATCTGTGTGTTGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCCAG
5598 TGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA