



PvuI (7)
SgfI (6) MfeI (82) EcoNI (96)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245) **Bsu36I (291)**
Psp1406I (203) PvuII (239) EcoNI (287)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTACCGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTCGCGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) **NaeI (441)**
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGCTTTGTTTCGTTT

NcoI (560) **BstEII (555)**
KasI (535) **AgeI (552)**
501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACTCTGAGATCACCGGTCCACATGGAGCACATACAGGGAGCTTGAAGACGATCAGCAA
1 M E H I Q G A W K T I S N

PvuII (636) **PshAI (762)**
601 TGGCTTTGACTCAAAGATGCGGTGTTTGTGGCTCCAGCTGCATCTCCCTACCATTGTTGACAGTGGTATCAGCGCCGGCCTCAGATGATGGC
13 G F G L K D A V F D G S S C I S P T I V Q Q F G Y Q R R A S D D G
701 AAGCTCACGGATTCTTCTAAGACAAGCAATACTATCCGGGTTTTCTTCCGAATAAGCAAAGACTGTGGTCAATGTGCGGAATGGAATGAGCTTACATG
47 K L T D S S K T S N T I R V F L P N K Q R T V V N V R N G M S L H

PstI (832)
801 ACTGCCTTATGAAAGCTCTGAAGGTGAGAGGCTGCAGCCAGAGTGTGTGCAGTGTTCAGACTTCTCCAGGAACACAAAGTAAAGAACGCGCTTAGA
80 D C L M K A L K V R G L Q P E C C A V F R L L Q E H K G K K A R L D

Psp1406I (993) **XmnI (990)**
901 TTGGAACACCGATGCCGCTCTCTGATTGGAGAAGAACTGCAAGTGGATTTTTGGATCATGTTCCACTCACAACCTCACAACCTTTGCTCGAAACGTT
113 W N T D A A S L I G E E L Q V D F L D H V P L T T H N F A R K T F

HindIII (1003) **PshAI (1018)** **BspHI (1077)**
1001 CTGAAGCTTGCAATCTGTGACATCTGTCAGAAGTCTCTGCTAAATGGATTTTCAGTGTGACTGTTGGCTACAAGTTTCATGAGCACTGTAGCACC
147 L K L A F C D I C Q K F L L N G F R C Q T C G Y K F H E H C S T K
1101 TACCTACTATGTGTGGACTGGAGTAATATCAGACAGCTCTTGTGTTTCCAAATCCACTGTTGGTGAAGTGGAGTCCCAGCACCACCTTCTTTCC
180 V P T M C V D W S N I R Q L L F P N S T V G D S G V P A P P S F P
1201 AATGCGTCGGATGCGAGAATCTGTTTCCGGATGCCTGCTAGTTCAGCAGCAGATACTACACCCATGCCTTCACTTTCAACACCTCCAGCCCTTCC
213 M R R M R E S V S R M P A S S Q H R Y S T P H A F T F N T S S P S

XcmI (1343) **XcmI (1364)**
1301 TCAGAAGTTCCTGTCCAGAGCAGAGTCAACGTCCACTCCCAATGTCCACATGGTCCAGCACCACCTGCATGTGGACAGCAGGATGATTGAGGATG
247 S E G S L S Q R Q R S T S T P N V H M V S T T L H V D S R M I E D

BstBI (1403)
1401 CAATTCGAAGTCACAGTGAATCAGCCTCACCTTCCAGCCCTGTCCAGCAGCCCAAAACACCTGAGTCCAACAGGCTGGTCAACAGCCCAAAACCCCTGTGCC
280 A I R S H S E S A S P S A L S S S P N N L S P T G W S Q P K T P V P

SandI (1528) **BsrBI (1510)** **EcoO109I (1528)** **XhoI (1572)**
1501 AGCACAAGAGAGCGGGACCAGGATCTGGGACCAGGAAAAAACAATTAGGCCTCGTGGGCAGAGAGACTCGAGTTACTGGGAAATAGAAGCC
313 A Q R E R A P G S G T Q E K N K I R P R G Q R D S S Y Y W E I E A

BsrGI (1649)
1601 AGTGAGGTGATGCTGCTACTCGGATCGGGTCAGGTTCTTTGGCACTGTGTACAAGGCAAGTGGCATGGAGATGTTGCAGTAAAGATCCTAAAGGTGG
347 S E V M L S T R I G S G S F G T V Y K G K W H G D V A V K I L K V

FspI (1751) **HpaI (1768)**
1701 TTGACCAACTCCAGAGCAACTCAGGCCCTCAGGAACGAGGTGGCTGTTTGGCAGAAACACGGCATGTTAACATCTGTTTCCATGGGGTACATGAC
380 V D P T P E Q L Q A F R N E V A V L R K T R H V N I L L F M G Y M T
1801 AAAGGACAACCTGGCGATTGTGACTCAGTGGTGTGAAGGCAGCAGTCTCTACAAACACCTGCATGTCCAGGAGACCAATCCAGATGTTCCAGCTAATT
413 K D N L A I V T Q W C E G S S L Y K H L H V Q E T K F Q M F Q L I

SphI (1938)
1901 GACATTGCCGACAGACAGCTCAGGAATGGACTATTTGCAATGCAAGAAACATCATCCACAGAGACATGAAATCCAACAATATATTTCTCCATGAAGGCC
447 D I A R Q T A Q G M D Y L H A K N I I H R D M K S N N I F L H E G
2001 TCACGGTGAATTTGGAGATTTTGGTTTGGCAACAGTGAAGTCAAGTGGAGTGGTCTCAGCAGGTTGAACAGCCACTGGCTCTGTGCTGTGGATGGC
480 L T V K I G D F G L A T V K S R W S G S Q Q V E Q P T G S V L W M A

BspEI (2111) **BsiWI (2159)**
2101 CCCAGAAGTAATCCGGATGACAGTGAACCCGTTCCAGTTCAGCTCCAGCTGACTCGTACCGCATCGTGTGTACGAGCTGATGGCTGGGGAGCTT
513 P E V I R M Q D D N P F S F Q S D V Y S Y G I V L Y E L M A G E L

Ppu10I (2255) **NsiI (2255)**
2201 CCCTACGCCACATCAACAACCGAGACCAGATCATCTTATGGTAGGCCGTGGTATGATCCCTGATCTCAGCAGGCTCTACAAGAACTGCCCAAGG
547 P Y A H I N N R D Q I I F M V G R G Y A A S P D L S R L Y K N C P K
2301 CAATGAAGAGTTGGTGGCTGACTGTGTGAAGAAAGTCAAAGAAGAGAGACCTTTGTTTCCAGATCCTGTCTTCCATCGAGCTGCTTCCAGCTCTCT
580 A M K R L V A D C V K K V K E E R P L F P Q I L S S I E L L Q H S L
2401 GCCGAAATCAACAGGAGCGCTCTGAGCCTTCCCTGCATCGGGCAGCTCACACTGAGGACATCAATGCTTGCAGCTGACTACATCCCAAGGCTACCA
613 P K I N R S A S E P S L H R A A H T E D I N A C T L T T S P R L P

MseI (2541)

2501 GTCTTCTAGCTGATGATGTAGCTGTTCTTAGGCCAG**NheI (2535)**CTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACACTAGAATGCAGTG
647▶ V F •

HpaI (2673) MfeI (2684)

2601 AAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAAGTTAAACAACAACAATTGCATTCATTTT

EcoRI (2769)

2701 ATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAAACTTTA

2801 ACCTCAAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCA

2901 CCTCTTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGTCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTT

SspI (3008) SwaI (3022) EcoO109I (3083)

3001 TTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATC

3101 CCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGG
141▶ • N R T Y K L

SacI (3283)

3201 GGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTCCATTCTCAATGAGCACAAGCAGTCAAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGC
133▶ P 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

3301 CACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGC
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

3401 AGACCCAATGGCAATGGCTTCCAGCAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCC
67▶ 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

BspHI (3597)

3501 GCCCCGACATGGTCTTGTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCA
33▶ A 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 (3655)

3601 TGATGGCCCTCTATAGTGTGATTACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGAC
0▶

SacI (3712)

3701 GGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTC

SpeI (3810)

3801 CCGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTA

SnaBI (3938)

3900 CTGCCAAAACCGCATCATCATGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGACTGGGCATAATGCCAG

NdeI (4043)

4000 GCGGGCATTACCCTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGCGAGTTTACCCTAAATACTCCACCC

4100 ATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATATTGACGTCAATGGGCGGGGTGTTGGGCGGTACAGCCAGGCGGGCC

PstI (4222) SdaI (4221) PacI (4229) BspLU11I (4239)

4200 ATTTACCCTAAGTTATGTAACGCC T G C A G G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G G A A C C G T A A A A A G G C C G T T G C T G G C
▶

4298 GTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTGT

4398 CCCCCTGGAAGCTCCCTCGTGGCTCTCTGTCCGACCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATA

ApaLI (4553)

4498 GCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACAGCCGACCGCTGCGCTTATCCGG

4598 TAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCT

4698 ACAGAGTCTTGAAGTGGTGGCCTAACTACGGTACACTAGAAGAACAGTATTTGGTATCTGCGTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTG

4798 GTAGCTCTTGATCCGGCAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCC

EagI (4989)
PacI (4969) SwaI (4978) **NotI (4988)**

4898 TTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCA

4998 ATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACT

5098 AGCAAAATAGGCTGTCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA