



PvuI (7) SgfI (6) MfeI (82) EcoNI (96)
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245) Bsu36I (291)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCTTGGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

SphI (560) AgeI (552) BspLU11I (572)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTCAGCATGCAACCAGACATGTCCTTGGACAATATTAAGATGGC
13 M Q P D M S L D N I K M A
601 ATCCAGTGACCTGCTGGAGAAGACAGACCTAGACAGCGGAGGCTTCGGGAAGGTGTCCTTGTGTTACCACAGAAGCCATGGATTTGTCATCCTGAAAAA
13 S S D L L E K T D L D S G G F G K V S L C Y H R S H G F V I L K K

NcoI (675)
701 GTATACACAGGGCCCAACCGCGCTGAGTACAATGAGGTTCTCTTGAAGAGGGGAAGATGATGCACAGACTGAGACACAGTTCGAGTGGTGAAGCTACTGG
47 V Y T G P N R A E Y N E V L L E E G K M M H R L R H S R V V K L L

Bsp120I (709) Tth111I (773)
801 GCATCATCATAGAAGAAGGGAACATTCGCTGGTGTGAGTACATGGAGAAGGGCAACCTGATGCACGTGCTAAAGACCCAGATAGATGTCCCACTTTC
80 G I I I E E G N Y S L V M E Y M E K G N L M H V L K T Q I D V P L S
901 ATTGAAAGGAAGGATAAATCGTGGAGGCCATAGAAGGCATGTGCTACTTACATGACAAAGGTGTGATACACAAGGACCTGAAGCCTGAGAATATCCTCGTT
113 L K G R I I V E A I E G M C Y L H D K G V I H K D L K P E N I L V
1001 GATCGTGACTTTACATTAAGATAGCCGATCTTGGTGTGGCTTCTTTAAGACATGGAGCAAAGTACGTAAGGAGAAAAGACAACAAGCAGAAAAGAAAGTGA
147 D R D F H I K I A D L G V A S F K T W S K L T K E K D N K Q K E V

BbrPI (865)
1101 GCAGCACCCTAAGAAGAACAATGGTGGTACCCTTTACTACATGGCACCCGAACACCTGAATGACATCAATGCAAAGCCACGGAGAAGTCCGACGCTGTA
180 S S T T K K N N G G T L Y Y M A P E H L N D I N A K P T E K S D V Y

BsrGI (1196)
1201 CAGCTTTGGCATTGTCCTTTGGGCAATATTTGCAAAAAAGGAGCCCTATGAGAATGTCATCTGTACTGAGCAGTTCGTGATCTGCATAAAATCTGGGAAC
213 S F G I V L W A I F A K K E P Y E N V I C T E Q F V I C I K S G N

BstAPI (1222) Scal (1325) BsrBI (1357)
1301 AGGCCAAATGTAGAGAAATCCTTGAGTACTGTCCAAGGGAGATCATCAGCCTCATGGAGCGGTGCTGGCAGGCGATCCAGAAGACAGGCCAACATTT
247 R P N V E E I L E Y C P R E I I S L M E R C W Q A I P E D R P T F

StuI (1420)
1401 TTGGCATTGAAGAAGAATTTAGGCCTTTTTACTTAAAGTCAATTTGAAGAATATGTAGAAGAGGATGTGGCAAGTTTAAAGAAAAGAGTATCCAGATCAAAG
280 L G I E E E F R P F Y L S H F E E Y V E E D V A S L K K E Y P D Q S

XmnI (1514)
1501 CCCAGTGCTGCAGAGAATGTTTCACTGCAGCATGACTGTGTACCCTTACCTCCGAGCAGGTCAAATTCAGAACAACCTGGATCGTGCACAGTTCACAG
313 P V L Q R M F T S L Q H D C V P L P P S R S N S E Q P G S L H S S Q
1601 GGGCTCCAGATGGTCTGTGGAGGAGTCTGGTTTTCTTCTCCAGAGTACCCACAGGACGAGAATGATCCGAGTGTGACAGGCTAAGCTGCAAGAGG
347 G L Q M G P V E E S W F S S S P E Y P Q D E N D R S V Q A K L Q E
1701 AAGCCAGTATCATGCTTTTGAATATTTGCAGAGAAAAGACAAAACCGCAGCAAGGAGAATGAGGCTTACAACAGAGAGAGGAAAAGAAAAGCAAG
380 E A S Y H A F G I F A E K Q T K P Q P R Q N E A Y N R E E E R K R R

BspHI (1806)
1801 GGTCTCTCATGACCCTTTGCACAGCAGAGAGCTCGTGAAGATTAAGAGTGCAGGAGCAAGAGGTCAATCTGATCCCAGCACAAACGAGTCTGGAATT
413 V S H D P F A Q Q R A R E N I K S A G A R G H S D P S T T S R G I

PvuII (1909) MscI (1918)
1901 GCAGTGCAACAGCTGTATGGCCAGCCACCCAAACAGTTTGAACAATGGATTGTATAATCAGCATGGATTTGGAACATAGGTACAGGAGTTTGGTATC
447 A V Q Q L S W P A T Q T V W N N G L Y N Q H G F G T I G T G V W Y

Scal (2023)
2001 CGCCAAATCTAAGCCAAATGTATAGTACTTATAAACTCCAGTGCCAGAGACCAACATACCGGAAGCACACCCACCATGCCATACTTCTCTGGCCAGT
480 P P N L S Q M Y S T Y K T P V P E T N I P G S T P T M P Y F S G P V

EcoRI (2181)
2101 AGCAGATGACCTCATAAAATATACTATATTCAATAGTTCTGGTATTGAGATTGAAAACCAACAATTATATGGATGTTGGACTGAATTCACAACCCAAAC
513 A D D L I K Y T I F N S S G I Q I G N H N Y M D V G L N S Q P P N

SalI (2217) SpeI (2254)
2201 AATACTTGCAAAGAAGAGTCGACTTCCAGACACCAAGCCATCTTTGATAACACCCTAGTCTGACTGATGAACACCTGAACCCCTATCAGGGAAAACCTGG
547 N T C K E E S T S R H Q A I F D N T T S L T D E H L N P I R E N L

ClaI (2350)
2301 GAAGGCAGTGGAAAACTGTGCCCGCAAGCTGGGCTTCACTGAGTCTCAGATCGATGAAATCGACCATGACTATGAAAGAGATGGACTGAAAGAGAAAAGT
580 G R Q W K N C A R K L G F T E S Q I D E I D H D Y E R D G L K E K V
2401 TTACCAAATGCTTCAAGAGTGGCTGATGCGGGAAGGCACCAAGGGCCACAGTGGGAAAAGTTGGCCAGGCACTTACCAATGTTGCAGGATAGACCTG
613 Y Q M L Q K W L M R E G T K G A T V G K L A Q A L H Q C C R I D L

MscI (2592)

2501 CTGAACCACTTGATTCTGCGCCAGCCAGAGCTAAGCCTGGGCAGGCTCTGGCAGTGGGAAGCAAACCTATTGTCTGGTGCAAAACCGCTAGCTGGCCAGA
647 ▶ L N H L I R A S Q S •

2601 CATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTA

HpaI (2724) MfeI (2735)

2701 ACCATTATAAGCTGCAATAAACAAAGTTAACAAACAATTGCATTCATTTTATGTTTCAGGTTACGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAA

EcoRI (2820)

2801 ACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAG
2901 GCATAGGCATCAGGGGCTTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAC

SapI (3002) SwaI (3073)

3001 TAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAAT
3101 AAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAA
3201 TTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAA
1+1 • N R T Y K L P I L E E I T T K V L K G N M E I

BstXI (3363)

3301 TGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGG
117 ▶ 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 S Y P

StuI (3498)

3401 GTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAG
84 ▶ 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 I Y
3501 GCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTGTGCTCATAGAGCATGGTATCTTCTCAG
50 ▶ 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 K E T

XmnI (3640)

3601 TGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATG
17 ▶ A V E V L E L D Q Q S I N F T K M

AseI (3706)

3701 CCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCT

SpeI (3861)

3801 ACCGCCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGG

SnaBI (3989)

3901 AGACTTGGAAATCCCGTGAGTCAAACCGCTATCCAGCCCATTTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGT

NdeI (4094)

4001 ACTGCCAAGTAGGAAAGTCCCATAAAGTGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATG
4101 ATACACTTGATGTACTGCCAAGTGGGCAGTTTACCCTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTC

PacI (4280)

SdaI (4272) BspLU111 (4290)

4201 ATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAAATAAGAACATGTGAGC
4301 AAAAGGCCAGCAAAGGCCAGGAACCGTAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCA
4401 AGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCTCGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCTGCCGTTACCG
4501 GATACCTGTCGCTTTCTCCCTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGG

ApaLI (4604)

4601 CTGTGTGCACGAACCCCGTTCCAGCCGACCGCTGCGCTTATCCGTTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCA
4701 GCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTAT
4801 TTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTGT
4901 TTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAA

EagI (5040)

PacI (5020) SwaI (5029) NotI (5039)

5001 GGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTAATC
5101 GTAACAAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGACGGTCCAGAACATTTCTCTAT
5201 CGAA