



**PvuI (7)**  
**SgfI (6)**
**MfeI (82)**

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGCGCAATTGAACGGGTGCCTA

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101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)**
**PvuII (239)**
**Bsu36I (291)**

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTCACGCGCCGCCCTACCTGAGGCC

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301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

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**BstEII (555)**  
**AgeI (552)**
**NcoI (560)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGTACCCATGGCCGCGCTGGGGCTTGCTCGTTGGACTCCTGGG

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**EagI (640)**  
**BsrBI (634)**
**BstEII (682)**

601 CGTCGTGTGGCTGCTGCGCTTGGGCCACGGCGAGGAGCGGCGCCGGAGACAGCGGCACAGCGCTGCTTCTGCCAGGTTAGTGGTTACCTGGACGACTGT

13▶ V V W L L R L G H G E E R R P E T A A Q R C F C Q V S G Y L D D C

**ClaI (718)**

701 ACCTGTGATGTCGAGACCATCGATAAGTTAATAACTACAGACTTTTCCCAAGACTACAAAAGCTTCTGAAAGTACTACTTTAGATATTACAAGGTGA

47▶ T C D V E T I D K F N N Y R L F P R L Q K L L E S D Y F R Y Y K V

801 ACTTGAAGAAGCCTTGCCTTTCTGGAATGACATCAACAGTGTGGAAGAAGAGACTGTGCCGTCAAACCTGCCATTCTGATGAAGTTCTGATGGAAT

80▶ N L K K P C P F W N D I N Q C G R R D C A V K P C H S D E V P D G I

901 TAAGTCTGCGAGCTACAAGTATTCTGAGGAAGCAACCGCATTGAAGAATGTGAGCAAGCTGAGCGACTTGGAGCCGTGGATGAGTCTCTGAGTGAGGAG

113▶ K S A S Y K Y S E E A N R I E E C E Q A E R L G A V D E S L S E E

1001 ACCCAGAAAAGCTGACTTCAGTGGACCAAGCATGATGATTCGTCAGACAGCTTCTGCGAAAATTGACGATATACAGTCCCCGATGCTGAGTATGTGGACT

147▶ T Q K A V L Q W T K H D D S C S D S F C E I D D I Q S P D A E Y V D

1101 TACTCCTTAACCTGAGCGCTACACAGGCTACAAGGGCCAGACGCTTGGAGGATATGGAGTGCATCTATGAAGAAAAGTGTAAAGCCACAGACAAT

180▶ L L L N P E R Y T G Y K G P D A W R I W S V I Y E E N C F K P Q T I

1201 TCAAAGGCCTTTGGCTTCTGGCGAGGAAAAAGTAAAGAGAACACATTTTACAAGCTGCTAGAAAGCCTCTGTGTAGAAAAGAGAGCATTCTACAGACTT

213▶ Q R P L A S G R G K S K E N T F Y N W L E G L C V E K R A F Y R L

**AseI (1321)**

1301 ATATCTGGCCTGCACGCAAGCATTATGTCATTGAGTGCAAGGTATCTTTTACAAGATACTTGGCTGGAAAAGAAATGGGGTCAATGTCACAGAGT

247▶ I S G L H A S I N V H L S A R Y L L Q D T W L E K K W G H N V T E

1401 TCCAGCAGCGCTTTGATGGGATTCTGACTGAAGGAGAAGGCCACGAAGGCTGAGGAACTTGTACTTCTGTACTGATAGAGTTAAGGGCTCTCTCCAA

280▶ F Q Q R F D G I L T E G E G P R R L R N L Y F L Y L I E L R A L S K

**SapI (1533)**
**BspHI (1593)**

1501 AGTGCTTCCATTTTTGAGCGTCCAGATTTTCACTGCTTCACTGGGAATAAAGTTCAGGATGCAGAAAACAAAGCGTTACTTCTGGAGATACTTCATGAA

313▶ V L P F F E R P D F Q L F T G N K V Q D A E N K A L L L E I L H E

**EcoRI (1629)**

1601 ATCAAGTCATTTCTTTGCACTTCGATGAGAATTCCTTTTGTGGGATAAAAAACGAAGCATAAACTAAAGGAGGACTTCCGGCTACACTTTAGGA

347▶ I K S F P L H F D E N S F F A G D K N E A H K L K E D F R L H F R

**BglIII (1787)**

1701 ACATTTCAAGAATCATGGACTGTGTTGGCTGCTTCAAGTGCCGCTGTGGGGCAAGCTTCAGACGCAGGGGCTGGGCACTGCTCTGAAGATCTTGTTTTC

380▶ N I S R I M D C V G C F K C R L W G K L Q T Q G L G T A L K I L F S

**NsiI (1883)**
**XmnI (1892)**

1801 CGAAAACTGATCGAAATATGCCGAAAAGCGGACCAAGTTATGAGTTCAGCTAACCCAGACAAGAAATAGTATCACTGTTTAAATGCATTTGGAAGGATT

413▶ E K L I A N M P E S G P S Y E F Q L T R Q E I V S L F N A F G R I

**MscI (1977)**

**NheI (1971)**

1901 TCCACAAGTGTGAGAGAAGTACAGAACTTCAGGCACTTGTACAGAATGTTCACTGAGGAGGACGGTTGGAGCTAGCTGGCCAGACATGATAAGATACAT

447▶ S T S V R E L E N F R H L L Q N V H •

2001 TGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAGAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGC

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**HpaI (2109)**
**MfeI (2120)**

2101 AATAACAAGTTAAACAACAATTGCATTCATTTATGTTTCAGGTTGAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTG

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**EcoRI (2205)**

2201 GTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGG

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**SapI (2387)**

2301 GCTGTTGCCAATGTGCATTAGCTGTTTGAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTACTCTTCATTTCT

2401 TTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTGTAGAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTA  
SspI (2444) SwaI (2458)

2501 GGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAA  
EcoO109I (2519)

2601 GCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGT  
141 • N R T Y K L P I L E E I T T K V L K G N M E I L V F C D  
SacI (2719)

2701 CAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCAC  
112 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 H R V A V  
2801 AATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACAGCACAGAGTGACCTGCCAATGTAGGCCTCAATGTGGACA  
79 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 A E I H V  
2901 GCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCA  
45 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 A V E V L  
BbsI (3029)

3001 GCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCCTATAGTGAGTCTGATTATACTATGCCGATATACTATGCCGATGATTAATTGT  
XmnI (3025) AseI (3091)  
12 E L D Q Q S I N F T K M

3101 CAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTGCGT  
SacI (3148)

3201 CAATGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTGATTACTAGTCAAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCC  
SpeI (3246)

3301 CGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAA  
SnaBI (3374)

3401 AGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTAC  
NdeI (3479)

3501 TGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAAT

3601 GGGCGGGGTCGTTGGCGGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAA  
PacI (3665) PstI (3658) SdaI (3657) BspLU11I (3675)

3701 GGCCAGGAACCGTAAAAAGCGCGTGTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGA  
3801 AACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGAAAGTCCCTCGTGCCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCT

3901 TTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGCACGAACC  
ApaLI (3989)

4001 CCCCCTTACAGCCGACCGCTGCGCTTATCCGTAATCTCGTCTTGAAGTCCAAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAAC

4101 AGGATTAGCAGAGCGAGTATGTAGGCGGTGCTACAGATTCTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTC

4201 TGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCAGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGAT

4301 TACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACTCACGTTAAGGGATTTTGGTCATG

EagI (4425)  
PacI (4405) SwaI (4414) NotI (4424)

4401 GCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGC

4501 TCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAAATAGGCTGTCCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA