



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA MfeI (82) EcoNI (96)

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCGCTACCTGAGGGCC HindIII (245) EcoNI (287) **Bsu36I (291)**

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

**NcoI (560)**  
**BstEII (555)**  
**KasI (535)** 501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTACCATGGGAACTGTCTGTATCCGGTGGAAACCTTTCACT AgeI (552) 1▶ M G N C L Y P V E T L S L

601 AGACAAGAATGGAAGTCAAGTCTGTTTACTTTGACAGCTGGAATTATTCGTTTGAAGATAACTACTCCTATGAAGTCTCGAGTGACTACAGCCTGACACCAGCT XhoI (672) 13▶ D K N G T Q F T F D S W N Y S F E D N Y S Y E L S S D Y S L T P A

701 GCTCCCTGCTACTCCTGTAATCTGCTTGAAGTCTTCCCTGCCCTTCTCATGCTCACCAGTGTCTGGGCATGCTGGCAAGTGGCAAGCATCCTCTTCCG SphI (770) NruI (797) 47▶ A P C Y S C N L L D R S S L P F F M L T S V L G M L A S G S I L F

801 CGATTCTCAGACCTTTCTCCACTGGCAGATTTGCCACAGCTGGCCATTCTGGCAGAGTTAGCAGTGGGCAGTGCCTGTTACAGATTGCAGTGCCTCAT 80▶ A I L R P F F H W Q I C P S W P I L A E L A V G S A L F S I A V P I

901 CCTGGCACCAGGCTTACACAGCGCCACAGCACAGCCATGCAACCTGGGCTACTGGGTATGGTATACTTCTGCTTTTGCCCAAGCTCTGTTGATAGGA Bst1107I (963) 113▶ L A P G L H S A H S T A L C N L G Y W V W Y T S A F A Q A L L I G

1001 TGCTATGCTTGCCTGAATCCAGACTGAATATTGGTCAACTCCGTTGGCTTACCTTGGGACTCAGTGTGGACTTTGGGAGCAGCTGCCCTCTTAGGGC SspI (1027) 147▶ C Y A C L N P R L N I G Q L R G F T L G L S V G L W G A A A L L G

1101 TGCCAGTCGCCCTGGCCAGTGTGCTTACAATGGCTTCTGCACTTTCCATCCTCCAGAGACATGGAAGCTTTGAAGTACACCTCATTATGCCATCTGTTT MscI (1112) HindIII (1166) 180▶ L P V A L A S D A Y N G F C T F P S S R D M E A L K Y T H Y A I C F

1201 TACCATCTTCACTGTATTGCCACTGACTCTTTTGGCAGCAAGGGGCTGAAGATAGCACTGAGCAAGGGGCTGGCCCTGGGTTAGTGTCTTGTGGATC EcoO109I (1266) 213▶ T I F T V L P L T L L A A K G L K I A L S K G P G P W V S V L W I

1301 TGGTTCATTTTCTGGTGGCTCATGGGATGTTTCTCATATTTGATGCTTTGGTGGAGTCCAAAACCTGTTCTTGTATACATGTCAATCCAGAAGATTC BspLU11I (1378) Bst1107I (1374) 247▶ W F I F W W P H G M V L I F D A L V R S K T V L L Y T C Q S Q K I

1401 TTGATGCAATGCTGAATGTGACAGAAGCCCTGAGTATGCTGCACTGTGTGGCTACCCACTGCTCCTGGCCCTGTTCTGCCATCAGACCACCCGTAGATC DraIII (1441) 280▶ L D A M L N V T E A L S M L H C V A T P L L L A L F C H Q T T R R S

1501 CTTGCTCACTCTCCCTCCCTACAAGACAGGCTTCTCAAATGGATGCCCTTGACGGCAAGTCTAGTTTTGTTTTGTTTTGCTAGCTGGCCAGACATG NheI (1582) 313▶ L S S L S L P T R Q A S Q M D A L A G K S •

1601 ATAAGATACATTGATGAGTTTGGACAAACCACAAGTGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCA

1701 TTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCT HpaI (1720) MfeI (1731)

1801 CTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCAT EcoRI (1816)

1901 AGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACG

2001 TCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTATGATAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAAAATAAT SspI (2055) SwaI (2069)

2101 GTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAAACAAAGAACCTTTAATAGAAATTGG EcoO109I (2130)

2201 ACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGCTGTTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAG 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 SacI (2330)

2301 CACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGC 116▶ 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 H

2401 CTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCCTGCCAATGTAGGCCT  
 82 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 A E  
 2501 CAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGC  
 49 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 A

BspHI (2644)

2601 GACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCCTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGA  
 16 V E V L E L D Q Q S I N F T K M

XmnI (2636)

AseI (2702)

SacI (2759)

2701 TGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCG

SpeI (2857)

2801 CCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGA

SnaBI (2985)

2900 CTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGT

NdeI (3090)

3000 GCCAAGTAGGAAAGTCCCATAAGGTCATGTAAGTCCATAAGTCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATA

3100 CACTTGATGTAAGTCCAAAGTGGGCGATTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATT

PstI (3269)

SdaI (3268) PacI (3276)

BspLU11I (3286)

3200 ATTGACGTCAATGGGCGGGGTCGTTGGGCGGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTG 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

3298 AAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAA

3398 GTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGG

3498 ATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTCGTTCCGCTCCAAGCTGGGC

ApaLI (3600)

3598 TGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAG

3698 CAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATT

3798 TGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCCACCGCTGGTAGCGGTGGTTTTTTTTGTT

3898 TGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAG

EagI (4036)

PacI (4016) SwaI (4025) NotI (4035)

3998 GGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCG

4098 TAACTAACATACGCTCTCCATCAAAAACAAAACGAAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATC

4198 GAA