



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

MfeI (82) EcoNI (96)

101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCCTACCTGAGGCC

301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTAACTCTACGTCTTTGTTTCGTTT

**KasI (535)** **AgeI (552)** **BstEII (555)** **FspI (575)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTCACCATGGCACCCCTTCTGCGCATCTCTTCAATTCTATGA

1▶ M A P F L R I S F N S Y E

601 GCTGGGCTCCCTGCAAGTTGAGGACGAAGCAAGCCAGCCTTTCTGTGCTGTGAAGATGAAGGAGGCACTCAGCACAGAGCGAGGGAAGACACTGGTACAG

13▶ L G S L Q V E D E A S Q P F C A V K M K E A L S T E R G K T L V Q

Psp1406I (732)

701 AAGAAGCCACCATGTATCTGAGTGAAGACAACGTTTCGACGCCACATCTATGAAGCCGTGTTATCCAGATTGTGCTGATCGGGCAGCTGAAGACC

47▶ K K P T M Y P E W K T T F D A H I Y E G R V I Q I V L M R A A E D

**Eco47III (839)** Bsu36I (889)

801 CCGTGTCTGAGGTACGGTGGGCGTGTCACTACTGGCTGAGCGCTGCAAGAAGAACAACGGCAAGGCTGAGTTCTGGCTGGATCTGCAGCCCTCAGGCCAA

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

901 GGTGCTGATGTGTGTCAGTATTTCTGGAGGATGGGATTGCAAACAGTCTATGCGTAGTGAGGAGGCAAGTTTCCAACCATGAACCGCTCGTGA

113▶ V L M C V Q Y F L E D G D C K Q S M R S E E E A K F P T M N R R G

1001 GCCATTAACAGGCCAAGATCCACTACATCAAGAACCACGAGTTTATCGCCACCTTCTCGGGCAGCCACCTTCTGTCTGTGTGCAAAGAGTTTGTCT

147▶ A I K Q A K I H Y I K N H E F I A T F F G Q P T F C S V C K E F V

**NsiI (1158)** **EagI (1176)**

1101 GGGCCTCAACAAGCAAGGCTACAAATGCAAGCAATGCAACGCTGCCATCCACAAGAAATGCATTGACAAGATTATCGGCCGCTGCACCTGGCACTGCCAC

180▶ W G L N K Q G Y K C R Q C N A A I H K K C I D K I I G R C T G T A T

1201 CAATAGCCGGGACACCATCTCCAGAAAGAAGCCTTCAACATCGACATGCCTCACCGATTCAAGTTTATAACTACATGAGCCCCACCTTCTGTGACCC

213▶ N S R D T I F Q K E R F N I D M P H R F K V Y N Y M S P T F C D H

**MscI (1388)**

1301 TGTGGCAGTTTGCTCTGGGACTGGTGAAGCAGGGATTAAGTGTGAAGATTGTGGCATGAATGTGCACCACAATGCCGGGAGAAGTTGGCCAACCTGT

247▶ C G S L L W G L V K Q G L K C E D C G M N V H H K C R E K V A N L

**StuI (1427)** **BglII (1450)**

1401 GTGGTATCAACAAAAGCTCTTGGCTGAGGCTTGAACCAAGTGACCCAGAGATCTTCCCGAAGCTGGACACAACAGAGTCTGTGGAATATAACAGGG

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

**BglII (1562)** **DraIII (1578)**

1501 ATTTGAGAAGAAGCCAGAAGTCTCTGGGAGTGACATCCTAGACAACAACGGACCTATGGCAAGATCTGGGAGGGGAGCACCCGGTGCACCCTTGAGAAC

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

**XcmI (1608)**

1601 TTCACCTTCAAAAAGTACTTGGCAAAGCAGCTTTGGCAAGTGTCTGCTGGCAGAGTGAAGGGCAAAGACAAGTACTTTGCAATCAAGTGTCTGAAGA

347▶ F T F Q K V L G K G S F G K V L L A E L L K G K D K Y F A I K C L K

1701 AGGACGTGTGTTGATTGACGATGATGTAGACTGTACCATGGTGGAGAAGCGGTGCTGGCGCTCGCCTGGGAGACTCCCTTCCACCCATCTG

380▶ K D V V L I D D D V E C T M V E K R V L A L A W E S P F L T H L I C

**BstEII (1852)** **BstBI (1888)**

1801 TACCTCCAGACCAAGGACCACCTGTTCTCGTATGGAGTTTCTCAATGGGGGTGACCTGATGTTCCACATTCAAGGACAAAGCCGCTTCAACTCTAC

413▶ T F Q T K D H L F F V M E F L N G G D L M F H I Q D K G R F E L Y

1901 CGGGCTACGTTTTATGACGCTGAGATCATCTGCGGACTGACGTTTCTACACAGCAAAGGCATTATTTACAGGGACCTCAAGTGACAAATGTGATGCTAG

447▶ R A T F Y A A E I I C G L Q F L H S K G I I Y R D L K L D N V M L

2001 ACAGGGACGGCCACATCAAGATCGTACTTTGGGATGTGCAAAGAGAATATATTTGGGAGGGCCGGCCAGCACATTTCTGCGGCACTCCTGACTACAT

480▶ D R D G H I K I A D F G M C K E N I F G E G R A S T F C G T P D Y I

**SdaI (2112)**

2101 CGCCCTGAGATCCTGCAGGGCCTGAAGTACTCCTTCTCGGTGGACTGGTGGTCTTTCGGGGTCTCCTGTACGAAATGCTCATCGCCAGTCCCCCTTC

513▶ A P E I L Q G L K Y S F S V D W W S F G V L L Y E M L I G Q S P F

**BstXI (2231)** **XcmI (2279)** **XmlI (2295)**

2201 CACGGCAGCATGAGGACGAGCTCTTCGAGTCCATCCGGTGGACACACCACACTATCCCCGTTGGATCACCAGGAATCCAAGGACATCATGGAGAAGC

547▶ H G D D E D E L F E S I R V D T P H Y P R W I T K E S K D I M E K

**SandI (2309)**

2301 TATTGAGAGGGACCTGACAAGAGGCTGGGAGTAACAGGAAACATCAGGATTCACCCCTTTTCAAGACTATCAACTGGTCCCTCCTGGAGAAGCGGAA

580▶ L F E R D P D K R L G V T G N I R I H P F F K T I N W S L L E K R K

2401 GGTGGAGCCGCTTTAAGCCAAAGTGAATCCCTTCAGACTACAGCAACTTTGACCCAGAGTTCTGAATGAGAAACCTCAGCTTTCTTCAGTAC

613▶ V E P P F K P K V K S P S D Y S N F D P E F L N E K P Q L S F S D

2501 AAGAACCTCATCGACTCTATGGACCAGGAAGCCTTCCATGGCTTCTCCTTTGTGAATCCCAAGTTTGAAGCAATTCCTGGACATTTAATTAAGCTCCAGA

647▶ K N L I D S M D Q E A F H G F S F V N P K F E Q F L D I •

**MscI (2623)** **NheI (2617)**

2601 CCTGCTTAAACGCCCTGTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTG

2701 **HpaI (2755)** MfeI (2766)  
TGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGGTTCAAGGGG

2801 **EcoRI (2851)**  
GAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACTCCAATCAAGCCTC

2901  
TACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGACGCTCACCTTTTTCATGGAGTTT

3001 **SspI (3090)**  
AAGATATAGTGATTTTTCCAAGGTTTGAAGTACTGCTCTTCATTTCTTTATGTTTTAAATGCACCTGACCTCCCACATTCCTTTTTAGTAAATATTCAGA

3101 **SwaI (3104)**  
AATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGG

3201  
ACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATG  
141 • N R T Y K L P I L E E I

3301 **BstXI (3394)**  
GTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCC  
127 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 C P S V V R

3401  
TGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGC  
94 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 S G I A I A

3501 **StuI (3529)**  
TTCAGCACAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTG  
61 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 A G V H H K

3601 **XmnI (3671)**  
TTGTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGT  
27 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

3701 **AseI (3737)**  
GAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTC

3801 **SpeI (3892)**  
TGCTTATATAGACCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCA

3901  
AAACAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATC

4001 **SnaBI (4020)**  
ATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCATAAAGTCAATGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCAT

4101 **NdeI (4125)**  
TGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTAAGTGGGAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGT

4201  
CCCTATTGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTGCTTGGGCGGTACGCCAGGCGGGCCATTTACCGTAAAGTTATGTA

4301 **SdaI (4303)** **BspLU11I (4321)**  
ACGCCTGCAGGTTAAATTAAGAACATGTGAGCAAAGGCCAGAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCC

4401  
CCCTGACGAGCATCACAATAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTG

4501  
CGCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTCGGGAAGCGTGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCA

4601  
GTTGCGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCCAA

4701  
CCCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGG

4801  
CCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAAC

4901  
AAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTC

5001 **EagI (5071)** **SwaI (5060)** **NotI (5070)**  
TGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCAT

5101  
TACATCTGTGTGGTTTTTTGTTGTGAATCGTAACTAACATACGCTCCATCAAACAACAAACGAAACAAACAACTAGCAAATAGGCTGTCCCCAG

5201  
TGCAAGTGACAGGTGCCAGAACATTTCTCTATCGAA