



**PvuI (7)**  
**SgfI (6)**
**EcoNI (96)**

1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
 101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

---

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

201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCCTCCCGCCTGTGGTGCCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

---

**NgoMIV (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

---

**KasI (535)**
**AgeI (552)**
**BspHI (560)**
**BstXI (593)**

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTCATCATGAGTGAATTCGTAAGGACACCTTGAAGGCCATTCT  
▶
▶
▶
▶

**BbsI (640)**

601 GTTGAGTTAGAATGTCATTTTACATGGAATTTACTTAAGGAAGACATTGATCTGTTTGGAGTGAAGATACAATTGGGCAACAGCTTGAATTTCTTACC  
 13▶ L E L E C H F T W N L L K E D I D L F E V E D T I G Q Q L E F L T

**XbaI (706)**

701 ACAAATCTAGACTTGCTCTTTATAACCTATTGGCCTATGTGAAACACCTAAAAGGCCAAAATAAAGACGCGCCTTGAGTGCCTTGAACAAGCAGAAGAAA  
 47▶ T K S R L A L Y N L L A Y V K H L K G Q N K D A L E C L E Q A E E  
 801 TAATCCAGCAAGAACACTCAGACAAAGAAGATCAAGCCTGGTCACTTGGGGAGCTTGGCTGGGTGATTATCACATGGCAGCTTGAAGAAGC  
 80▶ I I Q Q E H S D K E E V R S L V T W G N Y A W V Y Y H M D Q L E E A

**Bst1107I (906)**

901 TCAGAAGTATACAGGTAAGATAGGGAATGTCTGTAAGAAATTGTCCAGTCCCTTAACTACAAGTTGGAGTGTCTGAGACTGACTGTGAGAAAGGCTGG  
 113▶ Q K Y T G K I G N V C K K L S S P S N Y K L E C P E T D C E K G W  
 1001 GCACCTTTGAAATTTGGAGGAAAGTATTATCAAAGGCTAAAGCGGCTTTTGAAGGCTCTGGAAGTGGAGCCTGACAATCCAGAATTTAACATCGGCT  
 147▶ A L L K F G G K Y Y Q K A K A A F E K A L E V E P D N P E F N I G

**EcoO109I (1164)**

1101 ATGCTATCACAGTGTATCGGCTGGATGATTCTGATAGAGAAGGCTGTGTAAGAGCTTTTCTTGGGCGCTTTGAGAAAGGCTTACCTGAACCCAGA  
 180▶ Y A I T V Y R L D D S D R E G S V K S F S L G P L R K A V T L N P D

**HindIII (1231)**
**BsrGI (1242)**

1201 TAACAGCTATATTAAGGTTTTCTGGCACTGAAGCTTCAAGATGTACATGCAGAAGCTGAAGGGGAAAAGTATATTGAAGAAATCCTGGACCAATATCA  
 213▶ N S Y I K V F L A L K L Q D V H A E A E G E K Y I E E I L D Q I S

**XmnI (1343)**
**StuI (1382)**

1301 TCCAGCCTTACGTCCTTCTGTTATGCGACCAAGTCTATAGGAGAAAAAATTCCTGGAACAAAGCTCTCGAACTTTAAAAAGGCGCTTGGAGGTGACAC  
 247▶ S Q P Y V L R Y A A K F Y R R K N S W N K A L E L L K K A L E V T

**BsaBI (1452)**

1401 CAACTTCTTCTTCTGTCATCACCAGATGGGACTTTGCTACAGGGCACAAATGATCCAATCAAGAAGGCCACACACAACAGACCTAAAGGAAAGGATAA  
 280▶ P T S S F L H H Q M G L C Y R A Q M I Q I K K A T H N R P K G K D K

**BspLU11I**

**NcoI (1550)**
**MscI (1592)**

1501 ACTAAAGGTTGATGAGCTGATTTTCATCTGCTATATTTCAATTTCAAAGCAGCCATGGAACGAGACTCTATGTTTGCATTTGCCTACACAGACCTGGCCAAC  
 313▶ L K V D E L I S S A I F H F K A A M E R D S M F A F A Y T D L A N

**BspEI (1643)**
**XcmI (1695)**

1601 ATGTACGCTGAAGGAGGCCAGTATAGCAATGCTGAGGACATTTCCGGAAGCTCTTCGTCGTTGGAGAACATAACCGATGATCACAAACATCAGATCCATT  
 347▶ M Y A E G G Q Y S N A E D I F R K A L R L E N I T D D H K H Q I H  
 1701 ACCACTATGGCGCTTTCAGGAATTTACCAGTAAATCAGAAAACTACTGCCATCCATCATTATTTAGAAGCCTTAAAGGTCAAAGACAGATCACCCCTTCG  
 380▶ Y H Y G R F Q E F H R K S E N T A I H H Y L E A L K V K D R S P L R

**Tth111I (1841)**
**AvrII (1881)**

1801 CACCAAAGTACAAGTGTCTGTAAGAAATTGTCTACCAAGAGACTTTGTACAATGCTTTAGATGTGCAGAGTTTAAAGTGCCTAGGGTTTGTTTACAAG  
 413▶ T K L T S A L K K L S T K R L C H N A L D V Q S L S A L G F V Y K

**ScaI (1928)**
**EcoRI (1969)**

1901 CTGGAAGGAGAAAAGAGGCAAGCTGCTGAGTACTATGAGAAGGCACAAAAGATAGATCCAGAAAATGCAGAATTCCTGACTGCTCTGTGAGCTCCGAC  
 447▶ L E G E K R Q A A E Y Y E K A Q K I D P E N A E F L T A L C E L R

**MscI (2017)**

**NheI (2011)**

2001 TTTCCATTTAAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAAT  
 480▶ L S I •

---

**HpaI (2149)**

2101 TTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGGAGGTG

---

**EcoRI (2245)**

2201 TGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTG  
▶
▶

2301 AATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATA

---

**SspI (2484)**
**Swal (2498)**

2401 TAGTGATTTTTCCAAGTTTGAAGTACTCTTCAATTTCTTATGTTTTAAATGACTGACCTCCACATTCCCTTTTGTAGTAAATATTCAGAAATAAT

2501 TAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAG

2601 GGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGTT  
 141 • N R T Y K L P I L E E I T T  
 BstXI (2788)

2701 TTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACACATGCCACAGGGGCTGACCACCCTGATGG  
 125 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 I S

2801 ATCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGC  
 92 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 E A

2901 ACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTGTCC  
 59 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 N D  
 StuI (2923)

3001 TCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCCTATAGTGAGTCG  
 25 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  
 BbsI (3069)  
 XmnI (3065)

3101 TATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTA  
 AseI (3131)

3201 TATAGACCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTTGATTTACTAGTCAAAACAA  
 SpeI (3286)

3301 ACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTA  
 SnaBI (3414)

3401 ATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGT  
 NdeI (3519)

3501 CAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGCAGTTTACCCTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTAT  
 PstI (3698)  
 SdaI (3697)

3601 TGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGCGGGGGTCTGTTGGCGGTCAGCCAGGCGGGCCATTTACCCTAAGTTATGTAACGCCCT  
 PacI (3705) BspLU11I (3715)

3701 GCAGGTTAATTAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCGCGTGTGGCGTTTTCCATAGGCTCCGCCCCCTGA  
 CGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCT  
 CCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGG

3801

3901

4001 TGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCAACCCGGT  
 ApaLI (4029)

4101 AAGACACGACTTATCGCCACTGGCAGCAGCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAAC

4201 TACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCA

4301 CCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGTCTGACGC  
 EagI (4465)  
 PacI (4445) SwaI (4454) NotI (4464)

4401 TCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAAATATCTTTATTTTCATTACATC

4501 TGTGTGTTGGTTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAG

4601 TGCAGGTGCCAGAACATTTCTCTATCGAA