



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

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

**KasI (535)** **XmaI (633)** **NcoI (560)** **BstEII (555)** **EagI (572)**  
**AgeI (552)** **NotI (571)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTACCATTGGAGGCGGGCGCGCTGCTCCACGTCGTCGCCAGCT  
1 M E A A A A P R R P Q L

601 CCTCATCGTGTGGTGGCGGGGCGAGCGTCTCCCGGGGCGAAGGCATTACAGTGTCTGCCACCTCTGTACAAAGGATAATTTTACCTGTGAGACA  
13 L I V L V A A A T L L P G A K A L Q C F C H L C T K D N F T C E T

**XhoI (785)**  
701 GATGGTCTTTGCTTTGTCTCAGTCACTGAGACCACAGACAAAAGTTATACACAATAGTATGTGTATAGCTGAAATTGACCTAATTCCTCGAGACGGCCAT  
47 D G L C F V S V T E T T D K V I H N S M C I A E I D L I P R D R P

**ApaLI (806)** **EcoO109I (891)**  
801 TTGTATGTCACCATCTTCAAAAACAGGGGCGAGTACTACAACATATTGCTGCAATCAGGACCACTGCAATAAAAATAGAACTCCCAACTACAGGACCTTT  
80 F V C A P S S K T G A V T T T Y C C N Q D H C N K I E L P T T G P F  
901 TTCAGAAAAGCAGTCAGCTGGCCTTGGTCTGTGGAGCTGGCAGCTGTCTGTTCCAGTCTGCTTGCATTGACCTATGCTGATGGTCTAT  
113 S E K Q S A G L G P V E L A A V I A G P V C F V C I A L M L M V Y

**DraIII (1027)** **BamHI (1047)**  
1001 ATCTGCCATAACCGCACTGTCATTACCACCGTGTGCCAAATGAAGAGGATCCATCACTAGATCGCCCTTTTATTTCAGAGGGCACCACCTTAAAGATT  
147 I C H N R T V I H H R V P N E E D P S L D R P F I S E G T T L K D  
1101 TAATTTATGATATGACAACATCAGGGTCTGGATCAGGTTTACCCTGCTTGTTCAAAAGAACAAATTGCCAGGACCAATTGTTACAAGAAAAGCATTGGCAA  
180 L I Y D M T T S G S G S G L P L L V Q R T I A R T I V L Q E S I G K

**XmnI (1254)** **XbaI (1267)**  
1201 AGGTCGGTTTGGAGAAGTTTGGCGAGGCAAAATGGCGGGGAGAAGAAGTTGCTGTGAAGATATTCTTCTAGAGAAGAGCGTTTCATGGTTCGAGAGGCA  
213 G R F G E V W R G K W R G E E V A V K I F S S R E E R S W F R E A  
1301 GAGATTTATCAGACTGTAATGTTACGCCATGAAAATATCCTGGGATTTATAGCAGCAGACAACAAAGACAATGGGACATGGACGACGCTGTGGTTGGTGT  
247 E I Y Q T V M L R H E N I L G F I A A D N K D N G T W T Q L W L V

**BspHI (1407)** **BamHI (1417)** **HindIII (1471)**  
1401 CAGATTATCATGAGCATGGATCCCTTTTCGATTACTTGAATAGATACACTGTTACTGTGGAAGGAATGATCAAGCTTGTCTGTCCACAGCAAGTGGTCT  
280 S D Y H E H G S L F D Y L N R Y T V T V E G M I K L A L S T A S G L

**Acc65I (1525)**  
1501 TGCCCATCTTCACATGGAGATTGTTGGTACCCAAGGAAAACAGCTATTGCCATAGAGATTTGAAATCAAAGAATATCTTGGTGAAGAAAAATGGAACC  
313 A H L H M E I V G T Q G K P A I A H R D L K S K N I L V K K N G T  
1601 TGTTGATTGCAGACTTGGGACTTGTGTGAGACATGATTCTGCCACAGATACAATTGATATTGCTCAAACCCACAGAGTAGGCACTAAAAGGTACATGG  
347 C C I A D L G L A V R H D S A T D T I D I A P N H R V G T K R Y M

**XbaI (1710)**  
1701 CCCCTGAAGTTCTAGATGATTCCATAAATGAAACATTTTGAATCCTTCAAACGCGCTGACATCTATGCAATGGGCTTAGTGTCTGGGAAATTGCTCG  
380 A P E V L D D S I N M K H F E S F K R A D I Y A M G L V F W E I A R

**BbsI (1825)**  
1801 ACGCTGTTCTATTGGTGAATCCATGAAGACTATCAGTTGCCTTATTATGATCTTGTACCTTCTGATCCATCGGTTGAAGAAATGAGAAAAGTAGTTTGC  
413 R C S I G G I H E D Y Q L P Y Y D L V P S D P S V E E M R K V V C

**BstXI (1924)**  
**SspI (1918)** **StuI (1946)**  
1901 GAACAGAAGTTAAGGCCAAATATTCAAAACAGATGGCAGAGCTGTGAGGCCTTGAGAGTGATGGCTAAAATTATGAGAGAATGCTGGTATGCCAATGGAG  
447 E Q K L R P N I P N R W Q S C E A L R V M A K I M R E C W Y A N G

**NheI (2095)**  
2001 CAGCAAGGCTGACAGCTTTGCGAATTAATAAATGTCACAACCTCAGCCAACAGGAAGGCATCAAATGTAAGTGAACACCGTGGGAACTCTGCTAG  
480 A A R L T A L R I K K T L S Q L S Q Q E G I K M •

**MscI (2101)**  
2101 CTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACAGAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT

**HpaI (2233)**  
2201 TTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAATTCATTTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTTTTAAA

**EcoRI (2329)**  
2301 GCAAGTAAAACCTCTACAAATGTGGTATGGAATTTCAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGG  
2401 ATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTCCCAA

2501 **SspI (2568)** **SwaI (2582)**  
 GGTTTGAACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGC

---

2601 **EcoO109I (2643)**  
 AATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTT

---

2701 **SacI (2843)** **BstXI (2872)**  
 TAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCAT  
 141 • N R T Y K L P I L E E I T T K V L K G N

---

2801 **SacI (2843)** **BstXI (2872)**  
 TCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATC  
 120 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 R D V E D

2901 **StuI (3007)**  
 AGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTG  
 87 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 C V T V R

---

3001 **StuI (3007)**  
 CCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTGTTGTCCTCATAGAGCATGGTGA  
 53 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 E Y L M T I

---

3101 **BspHI (3157)** **BbsI (3153)** **XmnI (3149)**  
 TCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGA  
 20 K E T A V E V L E L D Q Q S I N F T K M

---

3201 **AseI (3215)** **SacI (3272)**  
 TATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACC

---

3300 **SpeI (3370)**  
 GTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTGTGTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTTGACGTC

---

3400 **SnaBI**  
 AATGGGGTGGAGACTTGAAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAAT

---

3500 **NdeI (3603)**  
 ACGTAGATGTAAGTCCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTAC

---

3600 **NdeI (3603)**  
 TTGGCATATGATACACTTGTACTGCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGG

---

3700 **PacI (3789)** **PstI (3782)** **SdaI (3781)**  
 AACATACGTCATTATTGACGTCAATGGGGGGGGTCTTGGGGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGA

---

3800 **BspLU11I (3799)**  
 ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAA

---

3900 **BspLU11I (3799)**  
 TCGACGCTCAAGTCAGAGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCTTTCCCCCTGGAAGTCCCTCGTGCCTCTCCTGTTCCGACCCTG

---

4000 **BspLU11I (3799)**  
 CCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCT

---

4100 **ApaLI (4113)**  
 CCAAGCTGGGCTGTGTGCACGAACCCCGTTAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATC

---

4200 **ApaLI (4113)**  
 GCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGA

---

4300 **ApaLI (4113)**  
 AGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTG

---

4400 **ApaLI (4113)**  
 GTTTTTTTGGTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAA

---

4500 **PacI (4529)** **SwaI (4538)** **EagI (4549)** **NotI (4548)**  
 CTCACGTTAAGGGATTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGTTTT

---

4599 **PacI (4529)** **SwaI (4538)** **EagI (4549)** **NotI (4548)**  
 TTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAAACAAACGAAACAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGACAGGTGCCAGAA

4699 **PacI (4529)** **SwaI (4538)** **EagI (4549)** **NotI (4548)**  
 CATTCTCTATCGAA