



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

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
 101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

---

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

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

---

**NgoMIV (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

---

**KasI (535)**
**AgeI (552)**
**SphI (560)**
**NsiI (562)**
**AseI (576)**

501 TCTGTTCTGGCGCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTCAGCATGCATCATGAAGAATTAATCTTGACACTCTGCATTCT  
 601 CATTGTTAAAAGTGCCTCAAAAAGTTGTATTACCGGATCACAATTCATGTGGTAGAGGGAGAACCCTTTTATCTGAAGCCATGTGGCATATCTGCACCA  
 13▶ I V K S A S K S C I H R S Q I H V V E G E P F Y L K P C G I S A P  
 1▶ M H H E E L I L T L C I L

**AprLI (700)**
**BspHI [m]**

701 GTGCACAGGAATGAAACAGCCACCATGAGATGGTTCAAAGGCAGTGCTTACATGAGTATAGAGAGCTGAACAACAGAAGCTCGCCAGAGTCACTTTT  
 47▶ V H R N E T A T M R W F K G S A S H E Y R E L N N R S S P R V T F

**EcoRI (814)**

801 ATGATCACACCTTGGAATTCGGCCAGTTGAGATGGAGGATGAGGGAACGTACATTTCTCAAGTCGGAATGATCGTCGCAATTGGACCTTAAATGTCAC  
 80▶ H D H T L E F W P V E M E D E G T Y I S Q V G N D R R N W T L N V T

**PvuII (915)**
**HpaI (958)**

901 CAAAAGAAACAAACACAGCTGTTTCTCTGACAAGCTCGTGACAAGCAGAGATGTTGAAGTTAAACAAATCTCTGCATATCACTTGAAGAATCCTAACTAT  
 113▶ K R N K H S C F S D K L V T S R D V E V N K S L H I T C K N P N Y

**BamHI (1061)**

1001 GAAGAGCTGATCCAGGACACATGGCTGTATAAGAACTGTAAGGAAATATCCAAAACCCCAAGGATCCTGAAGGATGCCGAGTTTGGAGATGAGGGCTACT  
 147▶ E E L I Q D T W L Y K N C K E I S K T P R I L K D A E F G D E G Y  
 1101 ACTCCTGCGTGTCTTCTGTCACCATAATGGGACACGGTACAACATCACCAGACTGTCAATATAACAGTTATTGAAGGAAGGAGTAAAGTAACTCCAGC  
 180▶ Y S C V F S V H H N G T R Y N I T K T V N I T V I E G R S K V T P A

**PstI (1260)**

1201 TATTTTAGGACCAAAGTGTGAGAAGTTGGTGTAGAAGTGTGAGTTGAACTGCAGTGTCTTATTGAATAAAGACGATCTGTTTTATTGG  
 213▶ I L G P K C E K V G V E L G K D V E L N C S A S L N K D D L F Y W

**BbsI (1339)**
**SphI (1383)**

1301 AGCATCAGAAAGAGGACAGCTCAGACCCTAATGTGCAAGAAGACAGGAAGGAGACGACAACATGGATTCTGAAGGCAAACCTGCATGCTTCAAAAATAC  
 247▶ S I R K E D S S D P N V Q E D R K E T T T W I S E G K L H A S K I  
 1401 TGAGATTTAGAAAATTACTGAAAATCTCAATGTTTTATATAATTGCACCGTGGCCAACGAAGAAGCCATAGACACCAAGAGCTTCTGTTGGTGAG  
 280▶ L R F Q K I T E N Y L N V L Y N C T V A N E E A I D T K S F V L V R

**EcoRV (1513)**

1501 AAAAGAAATACCTGATATCCAGGCCATGTCTTTACAGGAGGAGTAAGTGTGCTTGTCTCGCCTCTGTGGCAGCAGTGTGTATAGTATTTTGTGTGTC  
 313▶ K E I P D I P G H V F T G G V T V L V L A S V A A V C I V I L C V

**NdeI (1673)**

1601 ATTTATAAGTTGACTTGGTTCTGTTCTATAGGCGCATAGCGGAAAGAGACGAGACACTAACAGATGGTAAAACATATGATGCCTTTGTGTCTTACCTGA  
 347▶ I Y K V D L V L F Y R R I A E R D E T L T D G K T Y D A F V S Y L

**Bst1107I (1728)**
**EcoO109I (1757)**
**NsiI (1788)**

1701 AAGAGTGTATCTGAGAATAAAGAAGAGTATACTTTTGTGTGGAGACGTTACCCAGGGTCCGGAGAAACAGTTTGGGTATAAGTTATGCATATTTGA  
 380▶ K E C H P E N K E E Y T F A V E T L P R V L E K Q F G Y K L C I F E  
 1801 AAGAGATGTGGTCCCTGGCGGAGCTGTTGTGCGAGGAGATCCATCACTGATAGAAAAAGCCGGAGGCTAATCATCGTTCTCAGCCAGAGTTACCTGACT  
 413▶ R D V V P G G A V V E E I H S L I E K S R R L I I V L S Q S Y L T

**XhoI (1918)**
**BsaBI (1956)**

1901 AACGGAGCCAGGCGTGAGCTCGAGAGTGGACTCCACGAAGCACTGGTAGAGAGGAAGATTAAGATCATCTTAATTGAGTTTACTCCAGCCAGCAACATCA  
 447▶ N G A R R E L E S G L H E A L V E R K I K I I L I E F T P A S N I  
 2001 CCTTCTCCCGGCTCGTGAACCTCCTGAAGTCTACAGAGTTCTAAAATGGAGGGCTGACAGTCCCTCCATGAACCTAAGTTCTGGAAAGATCTTGT  
 480▶ T F L P P S L K L L K S Y R V L K W R A D S P S M N S R F W K N L V

**NeoI (2128)**
**NheI (2176)**

2101 TTACCTGATGCCCCGAAAAGCCGTCAAGCCATGGAGAGAGGAGTCCGAGGCGCGGTCTGTTCTCTCAGCACCTTGAGCTAGCTGGCCAGACATGATAAGA  
 513▶ Y L M P A K A V K P W R E E S E A R S V L S A P •

2201 TACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAA

---

**HpaI (2314)**

2301 GCTGCAATAAACAAGTTAAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAA

---

**EcoRI (2410)**

2401 ATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCAT  
 2501 CAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTATTTTCCAAGGTTTGAAGTACGCTCTTCA

---

**SspI (2649)**
**Swal (2663)**

2601 TTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTT

EcoO109I (2724)

2701 TATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCA

2801 AGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTTCCTAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAA  
 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

2901 GCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACA  
 114 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 R V

StuI (3088)

3001 GCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGT  
 80 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 I H

3101 GGACAGCAGAGATGATCTCCCCAGTCTGGTCCCTGATGGCCGCCCGACATGGTGCTTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTC  
 47 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 V E

BbsI (3234)

XmnI (3230) AseI (3296)

3201 CACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTA  
 14 V L E L D Q Q S I N F T K M

3301 ATTTGCAAACACAGCGTGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATT

SpeI (3451)

3401 TGGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAA

SnaBI (3579)

3501 ATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGT

NdeI (3684)

3601 AGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACTTGA

3701 TGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACG

PacI (3870)

PstI (3863) BspLU11I (3880)

SdaI (3862)

3801 TCAATGGGCGGGGTGCTTGGCGGTGACCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAAATAAGAACATGTGAGCAAAAGGCCAG  
 GCCTGCAGGTTAAATAAGAACATGTGAGCAAAAGGCCAG

3901 CAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGT

4001 GGCGAAACCCGACAGGACTATAAAGATACCAGGCTTTCCCCCTGGAAGTCCCTCGTGCGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTC

ApaLI (4194)

4101 CGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCAC

4201 GAACCCCCGTTCCAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTG

4301 GTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTG

4401 CGTCTGTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTGTGCAAGCAG

4501 CAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTGG

EagI (4630)

PacI (4610) SwaI (4619) NotI (4629)

4601 TCATGGCTAGTTAATTAACATTTAAATCAGCGGCCCAATAAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTTGTGTAATCGTAACTAACA

4701 TACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA