



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


---

101 GAGAAAGTGGCGCGGGTAAACTGGGAAAGTGTGCTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC  


---

**Psp1406I (203)** **HindIII (245)** **Bsu36I (291)**  
**PvuII (239)** **EcoNI (287)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC  


---

301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  


---

**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCAACTCTACGCTTTTGTTCGTTT  


---

**BstEII (555)**  
**AgeI (552)** **NcoI (560)**  
501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCACCATGGCTGAAAACAAACACCCTGACAAACCACTTAAGGT  


---

▶ ▶ M A E N K H P D K P L K V  
**PvuII (607)**  
601 GTTGAAACAGCTGGGCAAAGAAGTCCTTACGGAGTACCTAGAAAAATTAGTACAAAGCAATGTACTGAAATTAAGGAGGAAGATAAAACAAAAATTTAAC  
13▶ L E Q L G K E V L T E Y L E K L V Q S N V L K L K E E D K Q K F N  
701 AATGCTGAACGAGTACAAGCGTTGGGTTTTGTAGATGCCATGAAAAGAAACACAGCAAAGTAGTGAAATGCTTCTCCAGACATTCTTCAGTGTGG  
47▶ N A E R S D K R W V F V D A M K K K H S K V G E M L L Q T F F S V  
**NcoI (813)** **HindIII (868)**  
801 ACCCAGGCAGCCACCATGGTGAAGCTAATCTGAAAATGGAGGAACCAGAAGAATCATTGAACACTCTCAAGCTTTGTTCCCTGAAGATTCACAAGGCT  
80▶ D P G S H H G E A N L E M E E P E E S L N T L K L C S P E E F T R L  
**NdeI (969)**  
901 TTGCAGAGAAAAGACACAAGAAATTTACCAATAAAGGAGGCCAATGGCCGTACACGAAAGGCTCTTATCATATGCAATACAGAGTTCAAACATCTCTCA  
113▶ C R E K T Q E I Y P I K E A N G R T R K A L I I C N T E F K H L S  
1001 CTGAGGTATGGGGCTAACTTTGACATCATTGGTATGAAAGGCCTTCTTGAAGACTTAGGCTACGATGTGGTGGTAAAAGAGGAGCTTACAGCAGAGGGCA  
147▶ L R Y G A N F D I I G M K G L L E D L G Y D V V V K E E L T A E G  
1101 TGGAGTCAGAGATGAAAGACTTTGCTGCACTCTCAGAACACCAGACATCAGACAGCACATTCTGGTCTAATGTCTCATGGCACACTGCATGGCATTG  
180▶ M E S E M K D F A A L S E H Q T S D S T F L V L M S H G T L H G I C  
1201 TGGAAACAATGCACAGTAAAAAACTCCAGATGTGCTACAGTATGATACCATCTATCAGATATTTCAACAATTGCCACTGTCCAGGTCTACGAGACAAACCC  
213▶ G T M H S E K T P D V L Q Y D T I Y Q I F N N C H C P G L R D K P  
**AvrII (1396)**  
**PstI (1320)** **BglII (1389)**  
1301 AAAGTCATCATTGTGCAGGCCTGCAGAGGTGGGAACTCTGGAGAAATGTGGATCAGAGAGTCTTCAAACCCAGTTGTGCAGAGGTGTAGATCTACCTA  
247▶ K V I I V Q A C R G G N S G E M W I R E S S K P Q L C R G V D L P  
**BbrPI (1432)**  
1401 GGAATATGGAAGCTGATGCTGTCAAGCTGAGCCACGTGGAGAAGGACTTATTGCCTTCTACTCTACAACCCACATCACTTGTCTACCGAGACAAAAC  
280▶ R N M E A D A V K L S H V E K D F I A F Y S T T P H H L S Y R D K T  
**BspEI (1538)**  
1501 AGGAGGCTTACTTTCATCACTAGACTCATTCTCTGCTCCGGAACATGCTTGTCTTGTCTCTTTGATATATTCTGAAGGTGCAACAATCATT  
313▶ G G S Y F I T R L I S C F R K H A C S C H L F D I F L K V Q Q S F  
1601 GAAAAGGCAAGTATTCTCCAGATGCCACCATTGATCGGGCAACCTTACGAGATATTTCTACCTTTTCTGGCAACTGAGAACAAGCAACAAGC  
347▶ E K A S I H S Q M P T I D R A T L T R Y F Y L F P G N •  
**NheI (1743)**  
**BstXI (1740)**  
1701 AACTGAATCTCATTCTTCAGCTTGAAGAAGTATCTTGGCCAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGA  


---

**HpaI (1881)**  
1801 ATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCA  


---

**EcoRI (1977)**  
1901 TTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCA  


---

▶ ◀  
2001 AAACCTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTG  


---

**SapI (2159)**  
2101 CAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTCCCAAGTGTGAAGTACTAGCTCTTCACTTCTTTATGTTTTAAATGCACTGACCTCCCAC  


---

**SspI (2216)** **SwaI (2230)** **EcoO109I (2291)**  
2201 ATTCCCTTTTGTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTC  


---

2301 ATAATATCCCCAGTTTGTAGTGTGACTTAGGGAACAAGGAACCTTAATAGAAATTTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGT  


---

141 ▶ • N R T Y

SacI (2491)

2401 ACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCT  
136 K L P I L E E I 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

BstXI (2520)

2501 GCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGCTTCTGCCCGTTG  
103 C M G C P S V V R I S R D V E D S Y P H R V A V I T D F D K Q G N

2601 CTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAGCTTGGTCC  
69 S V A S G I A I A 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

2701 TGATGGCCGCCCGACATGGTGTCTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAA  
36 I A A G V H H K 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

AseI (2863)

2801 GGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCT  
3 T K M

SacI (2920)

2901 IATCTGACGGTTCATAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTT

SpeI (3018)

3001 GGAAAGTCCCCTGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCAGCCCAT

SnaBI (3146)

3101 TGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAGGTCATGTACTGGGCATA

NdeI (3251)

3201 ATGCCAGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATAC

3301 TCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGAGCCAG

PacI (3437)

PstI (3430)

SdaI (3429)

BspLU11I (3447)

3401 GCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCGTTG  
3401 CTTGCGGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGG

3501 CTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGG

3601 CGTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGAAGCGTGGCGCTTTC

ApaLI (3761)

3701 TCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCGCTCCAAGCTGGGTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTTA

3801 TCCGGTAACTATCGTCTTGAGTCCAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCG

3901 GTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAG

4001 AGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAA

EagI (4197)

PacI (4177) SmaI (4186) NotI (4196)

4101 GATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGG

4201 CCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAAC

4301 AAACCTAGCAAATAGGCTGTCCCGAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA