



**PvuI (7)**  
**SgfI (6)** MfeI (82) EcoNI (96)  
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **HindIII (245)** Bsu36I (291) EcoNI (287)  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCGCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGCGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) NaeI (441)  
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) **AgeI (552)** **BspLU11I (568)** **SandI (580)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGTAGGAGGGCCAAACATGCTGCTGGGGACCCAAGGTCTGGTAGA  
1 M S S G D P R S G R

NotI (618) **Bsp120I (607)** EagI (619) Eco4VII (626) NgoMIV (651) NaeI (651)  
601 CAGGACGGGGCCCGCGTGC GGCCGACGCTCTGTGGCTGTACCACGAGGCCGCCAGCAACTACAGCGCTGAAGGATCAGCTGGCCGCGGTGACG  
11 Q D G A P R A A A A L C G L Y H E A G Q Q L Q R L K D Q L A A R D

**NruI (706)** KasI (749) Eco4VII (787)  
701 CCCTCATCGGAGCCTCCGACCCGCTCGGGCTCTGGAAGGGCACACGGCCCGTCACTCGTGGAGCACTTCTGGATCAGGTGGAGCGCTCCGTTGA  
44 A L I A S L R T R L A A L E G H T A P S L V D A L L D Q V E R F R E

**XbaI (872)**  
801 GCAGCTGCAGCACAGGAGGAAGCGCTTCGGAGACCCAGCTGCGGCAGGAAGTTGAAAGACTTACGGAGCGTCTAGAGGAAAAAGAGAGGGAGATGCAA  
77 Q L R R Q E E G A S E T Q L R Q E V E R L T E R L E E K E R E M Q  
901 CAGCTGATGAGCCAGCCTCAGCATGAGCAAGAGAAGGAGGTAGTCTTGGTTCGGCGAAGTGTGGCAGAAAGGAGAAAGCCAGGCGCGCAGTGTCTC  
111 Q L M S Q P Q H E Q E K E V V L L R R S V A E K E K A R A A S D V

**BsrBI (1004)** **FspI (1033)** **BspLU11I (1060)** BstXI (1078)  
1001 TGTGCCGCTCCTGGCTGATGAGACCCACCAACTGCGCAGGACATTGGCAGCCACTGCCACATGTGCCAACATCTGGCCAAATGTCTGGATGAACGACA  
144 L C R S L A D E T H Q L R R T L A A A T A H M C Q H L A K C L D E R Q  
1101 GTGTGCACAGGGAGACGCTGGGGAGAAAAGCCCTGCTGAGCTAGAGCAAAACAGCAGCGATGCTTGGCCAGAGTGTATTAAGAAGTTACAGGAAGAA  
177 C A Q G D A G E K S P A E L E Q T S S D A S G Q S V I K K L Q E E

**SphI (1295)**  
1201 AATCGACTGTAAAAACAGAAGGTGACTCATGTAGAAGACCTCAATGCTAAGTGGCAGCGTTATGATGCAAGTAGGGACGAATATGTAAGGGGTTGCATG  
211 N R L L K Q K V T H V E D L N A K W Q R Y D A S R D E Y V K G L H  
1301 CCCAGCTAAAGAGGCGGAGGTCCCTCTGGAGCCTGAGCTGATGAAGAAGGAGATTTCCCGACTTAACAGACAGTTGGAGGAGAAAATAAGTACTGTGC  
244 A Q L K R R Q V P L E P E L M K K E I S R L N R Q L E E K I S D C A

**XmaI (1435)** **SmaI (1435)**  
1401 GGAAGCAAACCAGGAGCTGACAGCCATGAGGATGTCGGGACACTGCGCTGGAGCGAGTGCAGATGTAGAACAGCAGATTCTGCTTACAAGGATGAC  
277 E A N Q E L T A M R M S R D T A L E R V Q M L E Q Q I L A Y K D D  
1501 TTCAAATCAGAAAGGCGAGATCGGGAACGAGCGCACAGTAGGATCAAGAGCTGGAGGAAAAGATCATGTCCTTGATGTACCAAGTGCCAGAGACAGG  
311 F K S E R A D R E R A H S R I Q E L E E K I M S L M Y Q V S Q R Q

**XmaI (1603)** **SmaI (1603)** **Tth111I (1615)** **ScaI (1651)** **StuI (1698)**  
1601 ACTCCGGGAGCCAGGACCCTGTGCGATTACATCGGGGAACAAAACCTGCAAGTACTTAGAGATGGATGCACTGGAGCATGTGACCCCTGGCGCTGGAG  
344 D S R E P G P C R I H T G N K T A K Y L E M D A L E H V T P G G W R

**PstI (1732)** **BstEII (1773)**  
1701 GCCTGAGTCTAGGTCCCAACAGATGGAACCTTCTCGAGAGGGTGGCATGTGTGCACAGCCCAGAGAGGTCAGGGTGACCTTCAGTGCCTCATTGCCTG  
377 P E S R S Q Q M E P S A E G G H V C T A Q R G Q G D L Q C P H C L

**Bsu36I (1832)**  
1801 CGGTGCTTCAGTGATGAGCAAGGCGAGGCATTCTCAGGCACCTGTCTGAGTGTGCAATGAGCCAGACATTGCCCGTGTGACCCATGACCACCATAGC  
411 R C F S D E Q G E A F L R H L S E C C Q •

**NheI (1924)**  
1901 TGCTTAAGGACTGGGAGGGTCTGCTAGTGGCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAACCTAGAATGCAGTAAAAAATGCT

**HpaI (2062)** MfeI (2073)  
2001 TTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACCAATTGCATTATTATGTTTCAGGT

**EcoRI (2158)**  
2101 TCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTTCTAAAATACAGCATAGCAAACTTTAACCTCAAATC  
2201 AAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCAT

**SspI (2397)**  
2301 GGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAT

**SwaI (2411)**  
2401 ATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTTATAATATCCCCAGTTAG

2501 TAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGGATGAGTTC  
 141 • N R T Y K L P I L E  
 SacI (2672)

2601 CTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTG  
 130 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 C M G C P S  
 BstXI (2701)

2701 ACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGG  
 96 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 S V A S G I A  
 StuI (2836)

2801 CAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATG  
 63 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 I A A G V H  
 BspHI (2986)

2901 GTGCTTGTGCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTC  
 30 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 T K M  
 XmnI (2978)

VspI (3044)  
 AseI (3044)

3001 CTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCCTAA  
 SacI (3101) SpeI (3199)

3101 CGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTA

3201 CTAGTCAAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAAC  
 SnaBI (3327)  
 Eco105I (3327)

3300 GCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCCATTT

NdeI (3432)

3400 ACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAA

3500 TGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGCGGGGTCGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAA

PstI (3611)  
 SdaI (3610) PacI (3618) BspLU111 (3628)

3600 GTTATGTAACGCCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGAAAGCCAGGAACCGTAAAAGGCCGCGTGTGCTGGCGTTTTCCATA  
 GGCTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAG

3698

3798 CTCCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGCCGCTTTCTCATAGCTCACGCTGT

3898 AGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCGTTAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTC

3998 TTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCCGGTGCTACAGAGTTCCT

4098 GAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTGCTGAAGCCAGTTACCTTCGGAAAAAGATTGGTAGCTCTTGA

4198 TCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTT

EagI (4378)  
 PacI (4358) SmaI (4367) NotI (4377)

4298 CTACGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAATATCT

4398 TTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGG

4498 CTGTCACAGTGAAGTGACAGTGCAGAACATTTCTCTATCGAA