



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

**Psp1406I (203)** HindIII (245) **Bsu36I (291)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAACTGCGTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
**NaeI (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

**NcoI (560)**  
**BstEII (555)**  
**AgeI (552)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACGGTCCACCATGGCCGCTCTAAACCTGTGGAGGCAGCGGTGGTCGC  
1▶ M A A S K P V E A A V V A

**XmaI (651)**  
**SrfI (650)**  
**Bsp120I (648)**  
601 AGCCGCTGTACCGAGCTCCGGGAGTGGGGTGGGCGCGCGGGACTGCGGGCCCGGGCACGGGGGGTGC CGCGATGGCAGCTGGCTCTGGCGGTCCGGG  
13▶ A A V P S S G S G V G G G T A G P G T G G L P R W Q L A L A V G

**KasI (752)**  
701 GCACCCCTGTGCTGGGCGCGGGTGCATATACCTGTGGAGTCGGCAGCAACGGCGCCGGGAGGCCAGAGCCGGGGCGACGCCAGCGGCCTGAAGCGCA  
47▶ A P L L L G A G A I Y L W S R Q Q R R R E A R G R G D A S G L K R

**BbsI (810)** **SfiI (828)** **XmaI (840)** **EcoO109I (861)**  
801 ACAGCGAACGGAAGACCCCGGAGGGCAGGGCCAGTCCGGCCCCGGCAGCGGACCCCTGAAGTCCCGGTGCTCACTTGACATGAACCTCTTGTATAG  
80▶ N S E R K T P E G R A S P A P G S G H P E G P G A H L D M N S L D R

**SspI (929)**  
901 AGCCCAAGCAGCCAAGAATAAAGCAATAAATATTTTAAAGCAGGAAAATATGAACAAGCTATTCACTGCTATACTGAGGCTATTAGCTTGTGCCCTACA  
113▶ A Q A A K N K G N K Y F K A G K Y E Q A I Q C Y T E A I S L C P T

**BsrGI (1087)**  
1001 GAGAAGAATGTTGACCTTTCTACATTTTATCAAAACAGAGCTGCTGCCTTTGAACAGTTGCAAAAATGGAAAGAAGTGGCACAAGACTGTACAAAAGCTG  
147▶ E K N V D L S T F Y Q N R A A A F E Q L Q K W K E V A Q D C T K A  
1101 TTGAACCTAATCCCAAATATGTGAAAGCTCTTTTAGACGTGCAAAAGCCCATGAGAAGCTAGACAATAAGAAGGAATGTTAGAAAGTGTCACTGCTGT  
180▶ V E L N P K Y V K A L F R R A K A H E K L D N K K E C L E D V T A V

**SphI (1232)**  
1201 GTGTATATTAGAAGGGTTCCAAAATCAACAAAGCATGCTGTTAGCCGATAAAGTTCTTAAACTCCTTGAAAAGAGAAAGCCAAAGAAAATATAAGAAT  
213▶ C I L E G F Q N Q Q S M L L A D K V L K L L G K E K A K E K Y K N

**EcoRV (1360)**  
1301 CGTGAACCTCTGATGCCATCTCCACAGTTTATCAAATCTTACTTCAGTCTTTTACGGATGATATCATTCCCAGCCCATGCTTAAAGGAGAGAAATCTG  
247▶ R E P L M P S P Q F I K S Y F S S F T D D I I S Q P M L K G E K S

**XcmI (1463)**  
1401 ATGAAGATAAAGACAAGGAGGGGAGGCTTTAGAAAGTAAAGAAAATTCTGGATACTTAAAGCCAAAACAGTATATGGAAGAAGAAAACACGATAAAAAT  
280▶ D E D K D K E G E A L E V K E N S G Y L K A K Q Y M E E E N Y D K I  
1501 CATAAGTGAATGCTCAAAAGAAATAGATGCTGAAGGCAATACATGGCAGAAGCATTGCTACTACGAGTACCTTCTACTGCTTATTGGCAATGCCAAT  
313▶ I S E C S K E I D A E G K Y M A E A L L R A T F Y L L I G N A N

**HindIII (1651)** **BsrGI (1688)**  
1601 GCAGCCAAACCAGATTTAGATAAAGTCATCAGTTTAAAGAAAGCTAATGTGAAGCTTCGAGCAAAATGCTCTCATCAAAAGAGGCAGCATGTACATGCAAC  
347▶ A A K P D L D K V I S L K E A N V K L R A N A L I K R G S M Y M Q

**ClaI (1747)** **BsaBI (1765)**  
1701 AGCAGCAGCCTTTGCTGTCCACTCAAGATTTTAAACATGGCTGTGACATCGATCCTCAGAATGCAGATGTTTATCACCACCGAGGACAGCTGAAAATACT  
380▶ Q Q Q P L L S T Q D F N M A A D I D P Q N A D V Y H H R G Q L K I L

**PshAI (1853)**  
1801 CCTTGATCAAGTTGAAGAAGCAGTGGCAGATTTTATGATGAATGATTAGGTTAAGACCTGAGTCTGCTCTGGCACAAGCACAGAAATGTTTTCATTGTAC  
413▶ L D Q V E E A V A D F D E C I R L R P E S A L A Q A Q K C F A L Y  
1901 CGCCAGGCATATACGGGAAACAACCTTTCACAAATCCAAGCAGCTATGAAAGGTTTGAAGAGGTCATAAAGAAATTTCCAAGGTGTCCCGAAGGCTATG  
447▶ R Q A Y T G N N S S Q I Q A A M K G F E E V I K K F P R C A E G Y

**NdeI (2096)**  
2001 CACTATACGCCAGGCATTAACAGATCAACAACAGTTTGGTAAAGCTGATGAAATGTATGATAAATGATTGATTGGAACAGATAATGCTACAACATA  
480▶ A L Y A Q A L T D Q Q Q F G K A D E M Y D K C I D L E P D N A T T Y

**BglII (2136)**  
2101 TGTTCAAAAGGTTTACTTCAACTTCAGTGAAGCAAGATCTGGATAGAGGTTTGAAGCTTATCAGCAAGGCTATTGAAATGACAATAAATGTGATTTT  
513▶ V H K G L L Q L Q W K Q D L D R G L E L I S K A I E I D N K C D F

**NcoI (2210)** **BspLU11I (2258)** **MseI (2282)**  
2201 GCCTATGAAACCATGGGAACATTGAAGTACAAAGAGGAAACATGGAGAAAGCCATTGACATGTTCAACAAAGCTATTAACCTGGCCAAATCGGAAATGG  
547▶ A Y E T M G T I E V Q R G N M E K A I D M F N K A I N L A K S E M  
2301 AGATGGCCCATCTGTATTCACTTTGCGATGCGCCCATGCCGACAGAAAGTTGCAAAGAAATACGGATTAACCAACATTATAAAACAGGGGGAA  
580▶ E M A H L Y S L C D A A H A Q T E V A K K Y G L K P P T L •

MscI (2416)  
**NheI (2410)**  
2401 AGCAGACTGAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATT

**HpaI (2548)** MfeI (2559)  
2501 TGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGT

**EcoRI (2644)**  
2601 GGGAGGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGA  
2701 ATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCTTCTTTTCATGGAGTTAAGATAT

SspI (2883) SwaI (2897)  
2801 AGTGTATTTTCCAAGGTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAATAATT

EcoO109I (2958)  
2901 TAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGG  
3001 GAACAAAGGAACCTTTAATAGAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTT  
141 • N R T Y K L P I L E E I T T K

**BstXI (3187)**  
3101 TGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGA  
125 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  
3201 TCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCA  
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

**StuI (3322)**  
3301 CAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGGTCTTGTGTCTCT  
58 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 E

**BspHI (3472)**  
BbsI (3468)  
**XmnI (3464)**  
3401 CATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGT  
25 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

**AseI (3530)**  
3501 ATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCATAACAGGCTCTGCTTA

**SpeI (3685)**  
3600 TATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACA  
3699 AACTCCCATTGACGTCAATGGGGTGAGACTTGAAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGT

**SnaBI (3813)**  
3799 AATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACG

NdeI (3918)  
3899 TCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCCTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTA

**PstI (4097)**  
**SdaI (4096)**  
3999 TTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGACCCAGGCGGGCCATTTACCCTAAGTTATGTAACGCC

PacI (4104) BspLU11I (4114)  
4099 T G C A G G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G A A A G G C C A G G A A C C G T A A A A A G C C G C G T T G C T G G C G T T T T C C A T A G G C T C C G C C C C C  
4197 T G A C G A G C A T C A C A A A A T C G A C G C T C A A G T C A G A G G T G G C G A A A C C C G A C A G G A C T A T A A G A T A C C A G G C G T T T C C C C T G G A A G C T C C C T G T G C G C  
4297 T C T C T G T T C C G A C C C T G C C G T T A C C G G A T A C C T G T C C G C T T T C T C C T T C G G A A G C G T G G C G T T T C T A T A G C T A C G C T G T A G G T A T C T C A G T T

**ApaLI (4428)**  
4397 C G G T G T A G G T C G T T C G T C C A A G C T G G G C T G T G T C A C A G A C C C C C G T T C A G C C G A C C G T G C G C C T T A T C C G G T A A C T A T C G T C T T G A G T C C A A C C C  
4497 G G T A A G A C A C G A C T T A T C G C C A C T G G C A G C A G C C A C T G G T A A C A G G A T T A G C A G A G C G A G G T A T G T A G C G G T G C T A C A G A G T T C T T G A A G T G G T G C C T  
4597 A A C T A C G G C T A C A C T A G A A G A A C A G T A T T T G G T A T C T G C G C T C T G T G A A G C C A G T T A C C T T C G G A A A A A G A G T T G G T A G C T C T T G A T C C G G C A A A C A A A  
4697 C C A C C G C T G G T A G C G G T G G T T T T T G T T T G C A A G C A G C A G A T T A C G C G C A G A A A A A A A G G A T C T C A A G A A G A T C C T T T G A T C T T T T C T A C G G G T C T G A

**EagI (4864)**  
PacI (4844) SwaI (4853) **NotI (4863)**  
4797 C G C T C A G T G G A A C G A A A A C T C A C G T T A A G G G A T T T T G G T C A T G G C T A G T T A A T T A A C A T T T A A A A T C A G C G G C C G A A T A A A A T A T C T T T A T T T T C A T T A C  
4897 A T C T G T G T T G G T T T T T T G T G T G A A T C G T A A C T A A C A T A C G C T C C A T C A A A A C A A A A C G A A A C A A A A C A A A C T A G C A A A A T A G G C T G T C C C C A G T G C  
4997 A A G T C A G G T G C C A G A A C A T T T C T A T C G A A