



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA **MfeI (82)**  
101 GAGAAAGTGGCGCGGGTAAACTGGGAAAGTGTGCTGTACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

---

**Psp1406I (203)** 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC  
**HindIII (245)**  
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTAAAGCTCAGGTCGAGACC

---

**NgoMIV (441)** 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCAGCCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

---

**KasI (535)** 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTCAACATGTCAGTGTCTGTTCTGCTGTCCTTCTGTTGGA  
**AgeI (552)** 1▶ M S L L L F L L S F L L D  
601 TGGGCTCAAGGTGAGAGTACTTCTACAGTGCAGAGAATTGTGAAGGCACAGGAGGTTGTGCATCTTCTGCTGCTCCTTCTCCTCC  
13▶ G P Q G Q M E S Y F L Q V Q R I V K A Q E G L C I F V P C S F S S

---

**MscI (782)** 701 CCTGAGGGAAAATGGCTTAACCGTTCCCACTTTATGGCTACTGGTCAAAGGCATCAGAAAACCATCACTTTCAATTCAGTGGCCACAAAATAACAAG  
47▶ P E G K W L N R S P L Y G Y W F K G I R K P S L S F P V A T N N K  
**EcoRV (847)** 801 ATAAAGTGTAGAATGGGAGCCGAGGGCGCTTCCAGCTCTTGGGGATATCTCTAAAAGAAGTGTCTTCTGTAATCAAAGTGTTCAGTGGGGAGA  
80▶ D K V L E W E A R G R F Q L L G D I S K K N C S L L I K D V Q W G D  
**EcoRV (997)** 901 CTCAACAACTATTTCTCCGATGGAGAGAGGATTTGAGAGATTCAAGGAGGAGTTGAGGCTACAAGTGAAGCCCTGACTCAGAAGCCAGAT  
113▶ S T N Y F F R M E R G F E R F S F K E E F R L Q V E A L T Q K P D

---

**PshAI (1038)** 1001 ATCTTCATTCTGAGGCTCTGGAGCCTGGGAGCCAGTACCCTGCTGCTTTTCTGGACCTCAACCAATGCCAGCTCCTTCTTCTCCTGGA  
147▶ I F I P E V L E P G E P V T V V C L F S W T F N Q C P A P S F S W  
1101 TGGGGATGCTGTCTCCTTCCAAGAAAGCAGACCGCACACATCCAATTACTCAGTCTGAGCTTTATCCAGGACTTCAACACCATGATACTGAGCTCAC  
180▶ M G D A V S F Q E S R P H T S N Y S V L S F I P G L Q H H D T E L T

---

**XbaI (1216)** 1201 ATGTCAGCTGGACTTCTAGAAAGGACACAAAGGACTGTCCGACTAAGAGTGGCCTATGCCCCAGATCTTGTCTATCAGATTTTCCATGACAAT  
213▶ C Q L D F S R M S T Q R T V R L R V A Y A P R S L A I S I F H D N  
1301 GTATCAGTCCAGACTTGCATGAGAATCCTTACATCTGGAAGTTCAGCAAGGCCAGTCTTTCGCTCCTGTACTGCTGACGCCAGCCCTGCTA  
247▶ V S V P D L H E N P S H L E V Q Q G Q S L R L L C T A D S Q P P A

---

**Th111I (1420)** 1401 CACTGAGCTGGGTCTAGAGCAAGTCTTTCTTGGTCTAGCCTGTGGGTGCGAGAACCCTGGCACTAGAGTGCCTGGGTGAAAGCTGGGGACTC  
280▶ T L S W V L E D Q V L S W S S P V G S R T L A L E L P W V K A G D S  
1501 TGGACACTACCTTGCAAGCAGAGAATAGGCTGGGCTCCAGCAACATACCCTGGACCTCTGTGCTGTACCCCCACAGGACCTGAGAGTACTGTT  
313▶ G H Y T C Q A E N R L G S Q Q H T L D L S V L Y P P Q D L R V T V  
1601 TCCAAGCAAACAGGACAGTGTGGAAATCCTCAGGAATGCCATCTCCCTCCAGTCTGGAGGGCAAAGCCTGTGCCTAGTCTGTGCACCTATAGCA  
347▶ S Q A N R T V L E I L R N A I S L P V L E G Q S L C L V C V T Y S

---

**BsaBI (1743)** 1701 ATCCCCAGCCAATGTGAGTTGGGCTTGGGTGACACAGACCCTGATCCCAATCAGTCTTCCAGCCTGGGGTCTGGAGCTGCCTCTGGTCCAGAGAGA  
380▶ N P P A N V S W A W V T Q T L I P I Q S S E P G V L E L P L V Q R E

---

**EcoRI (1810)** 1801 ACATGAAGGAGAATTCACCTGTGCTGCACAGAACCCTGGGTGCGCAGCAGTCTCTGAGCCTCTGTGCACTAGCCAGCCAGATGTCCAGCCCC  
413▶ H E G E F T C A A Q N P L G A Q R I S L S L S V H Y P P Q M S S P  
1901 TCCTGCTCCTGGAGGCCAAGGTTGCTGCACTGCAACTGCTCCTCAGAGCCTGGCCTGCCCTCCCTCGCTGGCGGCTGGGGAGGGGCTGCTGGAGG  
447▶ S C S W E A K G L H C N C S S R A W P A P S L R W R L G E G L L E

---

**Bsp120I (2086)** 2001 GGAACAGCAGCAATGCCTCCTTACAGTCACTTTCAGTCACTTGGACCTGGGTCAACAGCTCCCTGAGCCTCCTTCAAGAGCTGGGGCCAGCCTCTG  
480▶ G N S S N A S F T V T F S S L G P W V N S S L S L L Q E L G P S L W

---

**NcoI (2124)** 2101 GCTCAGTGTGAGTCTGGAACACCCATGGAGCCAGACCCTGTCTGCTGCTACCTGATAAAGACAGTGCACAGCATTCTCCAAGGAGCAGTT  
513▶ L S C E S W N T H G A Q T T S V L L L P D K D S A T A F S K G A V  
2201 TTGGGCTTTGGCATCACAGCCCTCCTTGCCTGTGCTCATCGTGGTTCATCGTGAAGACCCTCCAGAAGAAAGGAACCCAGGAGGAACCTCCAGGCCA  
547▶ L G F G I T A L L A L C L I V V I V K T L Q K K G T Q E E P S R P

---

**XmaI (2306)** 2301 AGCTCTCCCGGGGAGCAGCAGTCTGGACTACATCAATGTGGTCCCAAGACCAGTCCCTGGCTCGGAATTGAAAGCTGAACCAGATGCCCTTCTAG  
580▶ K L S R G S T I L D Y I N V V P K T R S L A R N W K A E P D A P S R  
2401 GAGCTCACCCCTGGACACTCACTTCCCTAAACCAAGAAAGCAAAAGGACCACATTTACGTACCCTGGTTGCCAGATCCACATCATCTCTCAG  
613▶ S S P L D T H F P K P K K K Q K D P H F T Y P G C P D P T S S S Q

---

**BstXI (2351)** 2501 GTCCAGTCTCTGAGAATAACCCGGAAGAACTCCACTATGCTGCTCTCAACTTCTCCGCTGAGACTGCAGGAGACCCAGGATCCCCAAGACACCTATT  
647▶ V P V S E N N P E E L H Y A A L N F S R L R L Q E T Q D P Q D T Y  
**Tth111I (2349)**  
**MscI (2642)** 2601 CTGATTACACAGAGTCCAGTCCACTGAGGGTGTCTGCTAGCTGGCAGACATGATAAGATACATTGATGAGTTTGGACAACCCACAACCTAGAATGCAGT  
680▶ S D Y T E V R V H •

2701 **HpaI (2774)** MfeI (2785)  
GAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCATTT

2801 EcoRI (2870)  
TATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTT

2901 AACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTTTGCCAATGTGCATTAGCTGTTTGCAGCCTC

3001 ACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGTTTGAAGTAGCTCTTCATTTCTTTATGTTTAAATGCACTGACCTCCACATTCCCT

3101 **SspI (3109)** SwaI (3123)  
TTTTAGTAAAATATTTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATAT

3201 CCCCCAGTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTCGGTGACTTTGAG  
141 • N R T Y K L

3301 GGGGATGAGTTCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATG  
134 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 C M

3401 **BstXI (3413)**  
CCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAG  
100 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 S V A

3501 **StuI (3548)**  
CAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGC  
67 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 I A

3601 **XmnI (3690)**  
CGCCCCGACATGGTGCTTGTGTCCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGGCTTC  
34 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 T K

3701 **AseI (3756)**  
ATGATGGCCCTCCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTG  
0 M

3800 ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAG

3900 **SpeI (3911)**  
TCCCGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATG

3999 **SnaBI (4039)**  
TACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCTACTGGGCATAATGCC

4099 **NdeI (4144)**  
AGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGACTGCCAAGTGGGAGTTTACCGTAAATACTCCAC

4199 CCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGG

4299 **PstI (4323)** **SdaI (4322)** **PaeI (4330)**  
CCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTCTG

4397 GCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGT

4497 TTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTCTCCCTTCGGAAGCGTGGCGCTTCTCA

4597 **ApaLI (4654)**  
TAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCTTATCC

4697 GGTAACTATCGTCTTGTGTTCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTG

4797 CTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGT

4897 TGGTAGCTCTTGATCCGGCAAACAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGGCAGAAAAAAGGATCTCAAGAAGAT

4997 **EagI (5090)** **PaeI (5070)** **SwaI (5079)** **NotI (5089)**  
CCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCG

5097 CAATAAAATATCTTTATTTTATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAA

5197 CTAGCAAAATAGGCTGTCCCGAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA