



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

101 GAGAAAGTGGCGGGGTAACGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** HindIII (245) EcoNI (287)  
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGCTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMI (441)  
NaeI (441)  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

**NcoI (560)**  
**BstEII (555)**  
**KasI (535)** **AgeI (552)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTCCACCATGGTGGCACCAAGAGTCCACACAGATGACTGGCTCC  
1 M V A P K S H T D D W A P

**SspI (639)**  
601 TGGCCCTTTCTCCAGTAAGCCACAGAGGAGTCACTGCAAATATTCTCTTCTGTTCTACAGACCTCTCTCCTCTTCTGCTCATGGGACTAAGAGCCTCT  
13 G P F S S K P Q R S Q L Q I F S S V L Q T S L L F L L M G L R A S

**AvrII (735)**  
701 GAAAAGGACTCAGCCCCAACAGTGGTGTGTCAGGGATCCTAGGGGTTCTGTGACTCTCCCCTAAACATCTCAGTAGACACAGAGATTGAGAACGTCATCT  
47 G K D S A P T V V S G I L G G S V T L P L N I S V D T E I E N V I

**DraIII (888)**  
801 GGATTGGTCCAAAAATGCTCTTCTTTCGCACGTCCCAAGAAAATGTAACCATTATGGTCAAAAGCTACCTGGGCCACTAGACATCACCAAGTGGAG  
80 W I G P K N A L A F A R P K E N V T I M V K S Y L G R L D I T K W S

**EcoRI (994)**  
901 TTAATCCCTGTGCATCAGCAATCTGACTCTGAATGATGCAGGATCCTACAAAGCCAGATAAACCAAGGAATTTTGAAGTCACTGAGGAGGAATTC  
113 Y S L C I S N L T L N D A G S Y K A Q I N Q R N F E V T T E E E F

1001 ACCCTGTTCTGATGAGCAGCTGCAGGAGCCCCAAGTCCACTGAAGTCTGTGAAGGTGTCTGAGAAGTCTCCTGTAACATCACTCTAATGTGCTCCG  
147 T L F V Y E Q L Q E P Q V T M K S V K V S E N F S C N I T L M C S

**DraIII (1196)**  
1101 TGAAGGGGGCAGAGAAAAGTGTCTGTACAGCTGGACCCCAAGGGAACCCCATGCTTCTGAGTCCAATGGAGGCTCCATTCTTACCGTCTCCCGAACACC  
180 V K G A E K S V L Y S W T P R E P H A S E S N G G S I L T V S R T P

1201 ATGTGACCCAGACTGCCATACATCTGCACAGCCAGAACCCCGTCCAGCCAGAGAAGCTCCCTCCCTGTCCATGTTGGGAGTCTGTACAGATCCAGGA  
213 C D P D L P Y I C T A Q N P V S Q R S S L P V H V G Q F C T D P G

1301 GCCTCCAGAGGAGGAACAACGGGGGACTGTGGTAGGGTCTGGGAGAGCCAGTACCCTGCCACTTGCACTCCAGCCTGCCGGGACACAGAGAAGG  
247 A S R G G T T G E T V V G V L G E P V T L P L A L P A C R D T E K

1401 TTGTCTGTTGTTTAAACACATCCATCATTAGCAAGAGAGGGAAGAAGCAGCAACGGCAGATCCACTCATTAAATCCAGGGATCCTTACAAGAACAGGGT  
280 V V W L F N T S I I S K E R E E A A T A D P L I K S R D P Y K N R V

**NgoMI (1555)**  
**NaeI (1555)**  
1501 GTGGTCTCCAGCCAGGACTGCTCCCTGAAGATCAGCCAGCTGAAGATAGAGGACGCCGGCCCTACCATGCCTACGTGTGCTCAGAGGCTCCAGCGTC  
313 W V S S Q D C S L K I S Q L K I E D A G P Y H A Y V C S E A S S V

**BspLU111 (1611)** **Eco72I (1656)**  
**PshAI (1608)** **BbrPI (1656)**  
1601 ACCAGCATGACACATGTCACCCTGCTCATCTACCGCAGGCTGAGGAAGCCAAAATCACGTGGAGCCTCAGGCACAGTGGAGTGGCATCTGCAGGATCA  
347 T S M T H V T L L I Y R R L R K P K I T W S L R H S E D G I C R I

1701 GCCTGACCTGCTCCGTGGAGGACGGGGAAACTGTACATGACACATGGACCCCGTGCAGAAGGAAGCTGTTGTGTCCAAAGGGAACTCACACCTCAA  
380 S L T C S V E D G G N T V M Y T W T P L Q K E A V V S Q Q G E S H L N

1801 TGTCTCATGGAGAAGCAGTGAATAACACCCCACTCAGTGCACAGCCAGCAACCCCTGTCAGCAGGAGTTCCACCAGTTTCTTCTGAGAATCTGT  
413 V S W R S S E N H P N L T C T A S N P V S R S S H Q F L S E N I C

**HindIII (1921)**  
1901 TCAGGACCTGAGAGAAACACAAAGCTTTGGATTGGGTTGTTCTGATGGTTTGCCTTCTGTGCGTTGGGATCTTCACTGGTGCATTGGAAGCGAAAAG  
447 S G P E R N T K L W I G L F L M V C L L C V G I F S W C I W K R K

**MscI (2070)**  
2001 GACGGTGTTCAGTCCCAGCCTTCTGTTCCAGCCAAGCTGAGGCCCCAGCGGATACACCAGAACCACAGCTGGCCACACGCTATACTCTGTGCTCCCA  
480 G R C S V P A F C C S S Q A E A P A D T P E P T A G H T L Y S V L S Q

2101 AGGATATGAGAAGCTGGACACTCCCTCAGGCCTGCCAGGCAACAGCCTACCCCACTCAGACAGCAGCTCTGACAGCAACCTCACAACCTGAGGAGGAT  
513 G Y E K L D T P L R P A R Q Q P T S D S S S D S N L T T E E D

**ApaLI (2215)** **Tth111I (2251)**  
2201 GAGGACAGGCTGAGGTGCACAAGCCCATCAGTGAAGATATGAGGTGTTTGACCAGGTCACTCAGGAGGGCGTGGACATGACCAGCCCTGAGGGCC  
547 E D R P E V H K P I S G R Y E V F D Q V T Q E G A G H D P A P E G

**NdeI (2324)**  
2301 AAGCAGACTATGATCCCGTCACTCCATATGTCACGGAAGTTGAGTCTGTGGTTGGAGAGAACCCTGTGTATGCACAAGTGTCAACTACAGGGAAAGAC  
580 Q A D Y D P V T P Y V T E V E S V V G E N T V Y A Q V F N L Q G K T

2401 CCCGGTTTCTCAGAAGGAAGAGAGCTCAGCCACAATCTACTGCTCCATACGAAACCTCAGGTGGTGCCACCACCACAACAGAATGATCTTGAAGTTCCT  
613 P V S Q K E E S S A T I Y C S I R K P Q V V P P P Q Q N D L E I P

**MscI (2550)**  
**NheI (2544)**  
2501 GAAAGTCTACCTATGAAAATTTACCTGAAAGGAAAAGCAGCTGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAG  
647 E S P T Y E N F T •

2601 **HpaI (2682)** MfeI (2693)  
 AATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAAACAATTGC

2701 EcoRI (2778)  
 ATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGC

2801  
 AAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTT

2901  
 GCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAC TAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCA

3001 SspI (3017) SvaI (3031)  
 CATTCCCTTTTTAGTAAAATATTAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTT

3101  
 CATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTCGGTG

3201 141 • N R T  
 TACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTC

136 Y 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

3301 **BstXI (3321)**  
 TGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTTCTGCCGTT

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

3401  
 GCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTC

70 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

3501 **XmnI (3598)**  
 CTGATGGCCGCCGACATGGTGTCTTGTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGA

36 R 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

3601 **BspHI (3606)** **VspI (3664)** **AseI (3664)**  
 AGGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGC

3 T K M

3701  
 TATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTT

3801 **SpeI (3819)**  
 TGGAAAGTCCCGTTGATTTACTAGTCAAACAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCACGCC

3900 **SnaBI (3947)** **Eco105I (3947)**  
 ATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAGGTCATGTACTGGGCA

4000 **NdeI (4052)**  
 TAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAAT

4100  
 ACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGCGGTGAGCC

4200 **SdaI (4230)** **PacI (4238)** **BspLU11I (4248)**  
 AGGCGGGCCATTTACCGTAAGTTATGTAACCGCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGC

4298  
 GTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATAC

4398  
 CAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGC

4498 **ApaLI (4562)**  
 TTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTACGCCGACCGTGGCG

4598  
 CTTATCCGGTAACTATCGTCTTGGTCCAAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTA

4698  
 GCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAA

4798  
 AAAGAGTTGGTAGCTCTTGATCCGGCAAACAACACCCTGTTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCA

4898 **PacI (4978)** **SwaI (4987)**  
 AGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGGAAACGAAAACCTACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC A

**EagI (4998)** **NotI (4997)**  
 4998 CGGCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGGTTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACA

5098  
 AAACAAACTAGCAAATAGGCTGTCCCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA