



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

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Psp1406I (203) HindIII (245) Bsu36I (291)  
 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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NgoMIV (441) NaeI (441)  
 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

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KasI (535) AgeI (552) BspHI (568)  
 501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTAGGAGGGCCATCATGAGGAAGACCAGGCTCTGGGGGCTGCTG  
 601 TGGATGCTCTTTGTCTCAGAAGCTCCGAGCTGCAACTAAATTAAGTGGAGAAAAGTATGAACTGAAAGAGGGGAGACCCTGGATGTGAAATGTGACTACA  
 11▶ W M L F V S E L R A A T K L T E E K Y E L K E G Q T L D V K C D Y

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HindIII (727) SphI (771)  
 701 CGCTAGAGAAGTTTCCAGCAGCCAGAAAGCTTGGCAGATAATAAGGGACGGAGAGATGCCAAGACCCTGGCATGCACAGAGAGGCCCTTCAAAGAATTC  
 801 CCATCCAGTCCAAGTGGGGAGGATCATACTAGAAGACTACCATGATCATGTTTACTGCGCGTCCGAATGGTCAACCTTCAAGTGAAGATTCTGGACTG  
 77▶ H P V Q V G R I I L E D Y H D H G L L R V R M V N L Q V E D S G L

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PvuI (947) BstEII (965) SandI (984) EcoO109I (984)  
 901 TATCAGTGTGTGATCTACCAGCCTCCCAAGGAGCCTCACATGCTTGCATCGCATCCGCTTGGTGGTACCAAGGGTTTTTCAGGGACCCTGGCTCCA  
 111▶ Y Q C V I Y Q P P K E P H M L F D R I R L V V T K G F S G T P G S  
 1001 ATGAGAATTCTACCCAGAATGTGATAAGATTCTCCTACCACCACTAAGGCCTTGCCCACTATACCAGCCCCAGAAGTGTGACCAAGCTCCACC  
 144▶ N E N S T Q N V Y K I P P T T T K A L C P L Y T S P R T V T Q A P P

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EcoRV (1158)  
 1101 CAAGTCAACTGCCGATGTCTCCACTCCTGACTCTGAAATCAACCTTACAAATGTGACAGATATCATCAGGGTTCGGTTCACATTGTCTCTCCTG  
 177▶ K S T A D V S T P D S E I N L T N V T D I I R V P V F N I V I L L

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AvrII (1270)  
 1201 GCTGGTGGATTCTGAGTAAGAGCCTGGTCTTCTGTCTGTTTGTGTGACGCTGAGTTCATTTGTACCTAGGCCACGAACCCACGAGAATGTCCT  
 211▶ A G G F L S K S L V F S V L F A V T L R S F V P •

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MscI (1340) NheI (1334)  
 1301 CTGACTTCCAGCCACATCCATCTGGCAGTGTCCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAAC TAGAATGCAGTGA

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HpaI (1472) MfeI (1483)  
 1401 AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACCAATTGCATTATTTA  
 1501 TGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAA  
 1601 CCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCAC  
 1701 CTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCAAAGTTTGAAGTACTCTTCTTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTT

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SspI (1807) SmaI (1821) EcoO109I (1882)  
 1801 TTAGTAAAATATTCAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCC  
 1901 CCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGG  
 141▶ • N R T Y K L P

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SacI (2082)  
 2001 GGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAAGGAGCATAGTCAGAGATGAGCTCTGCACATGCC  
 133▶ 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 G  
 2101 ACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCA  
 100▶ 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  
 2201 GACCAATGGCAATGGCTTACGACAGACAGTACCCCTGCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCG  
 66▶ 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 A

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BspHI (2396) XmnI (2388)  
 2301 CCCCACATGGTGTGTTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCAT  
 33▶ 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 M

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AseI (2454)  
 2401 GATGGCCCTCTATAGTGTGATTACTATGCGGATATACTATGCGGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGAC

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SacI (2511)  
 2500 GGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGAGTTGTTACGACATTTTGGAAAGTC

2600 CCGTTGATTTACTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTA  
**SpeI (2609)**

2699 CTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAG  
**SnaBI (2737)**

2799 GCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCC  
**NdeI (2842)**

2899 ATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGCGGGGTCGTTGGCGGTCAGCCAGCGGGCC

2999 ATTTACCGTAAGTTATGTAACGCC TGCAG G TT AA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGTTGCTGGC  
**PstI (3021)** **PciI (3038)**  
**SdaI (3020)** **PacI (3028)** **BspLU11I (3038)**

3097 GTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTT

3197 CCCCCTGGAAGCTCCCTCGTGGCTCTCTGTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATA

3297 GCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCCTTATCCGG  
**ApaLI (3352)**

3397 TAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCT

3497 ACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTG

3597 GTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCC

3697 TTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCA  
**EagI (3788)**  
**PacI (3768)** **SwaI (3777)** **NotI (3787)**

3797 ATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAACGAAACAAACAAACT  
3897 AGCAAATAGGCTGTCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA