



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)**  
101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGTACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC  
**PvuII (239)**  
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCCTGACCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

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**AgeI (552)** **SphI (560)** **NotI (588)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCCTACCTGAGATCACCGGTGCGGGCTCCCGGCCCGCCGCCCTGCGGCCGCTGCC  
1▶ M R A P G R P A L R P L P  
601 ΔCTGCCGCCGCTGCTGCTGTTGCTCCTGGCGCGCCTTGGGGACGGGAGTTCCTGTGTCTCTGGTGGTTTGCCTAAACCTGCAACATCACCTTCTTA  
13▶ L P P L L L L L L A A P W G R A V P C V S G G L P K P A N I T F L  
701 TCCATCAACATGAAGAATGTCCTACAATGGACTCCACCAGAGGGTCTCAAGGAGTTAAAGTACTTACACTGTGCAGTATTTATATATGGGCAAAAGA  
47▶ S I N M K N V L Q W T P P E G L Q G V K V T Y T V Q Y F I Y G Q K  
801 AATGGCTGAATAAATCAGAATGCAGAAATCAATAGAACCTACTGTGATCTTTCTGCTGAACTTCTGACTACGAACACCAGTATTATGCCAAAGTTAA  
80▶ K W L N K S E C R N I N R T Y C D L S A E T S D Y E H Q Y Y A K V K  
901 GGCCATTTGGGGAACAAAGTGTCCAAATGGGCTGAAAGTGGAGCTTATCCTTTTTAGAAACACAAATTGGCCACCAGAGTGGCACTGACTACA  
113▶ A I W G T K C S K W A E S G R F Y P F L E T Q I G P P E V A L T T

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**BstXI (1033)** **XmnI (1057)**  
1001 GATGAGAAGTCCATTTCTGTTGTCTGACAGCTCCAGAGAAGTGAAGAGAAATCCAGAAGACCTTCTGTTTCCATGCAACAAATATACTCCAATCTGA  
147▶ D E K S I S V V L T A P E K W K R N P E D L P V S M Q Q I Y S N L

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**XcmI (1157)**  
1101 AGTATAACGTGTCTGTGTTGAATACTAAATCAACAGAACGTGGTCCCAGTGTGTGACCAACCACAGCTGGTGTCTACCTGGCTGGAGCCGAACACTCT  
180▶ K Y N V S V L N T K S N R T W S Q C V T N H T L V L T W L E P N T L

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**BbrPI (1210)** **Bsp120I (1231)**  
1201 TTACTGCGTACACGTGGAGTCCCTTCGTCGCCAGGCCCCCTCGCGGTGCTCAGCCTTCTGAGAAGCAGTGTGCCAGGACTTTGAAAGATCAATCATCAGAG  
213▶ Y C V H V E S F V P G P P R R A Q P S E K Q C A R T L K D Q S S E  
1301 TTCAAGGCTAAAATCATCTTCTGGTATGTTTTGCCATATCTATTACCGTGTCTTTTTCTGTGATGGGCTATTCCATCTACCGATATATCCACGTTG  
247▶ F K A K I I F W Y V L P I S I T V F L F S V M G Y S I Y R Y I H V  
1401 GCAAAGAGAAACCCAGCAAATTTGATTTGATTTATGGAATGAATTTGACAAAAGATCTTTGTGCTGCTGAAAAAATCGTATTAACCTTTATCAC  
280▶ G K E K H P A N L I L I Y G N E F D K R F F V P A E K I V I N F I T  
1501 CCTCAATATCTCGGATGATTCTAAAATTTCTCATCAGGATATGAGTTTACTGGGAAAAAGCAGTGTATGATCCAGCCTTAATGATCCTCAGCCAGCGGG  
313▶ L N I S D D S K I S H Q D M S L L G K S S D V S S L N D P Q P S G  
1601 AACCTGAGCCCCCTCAGGAGGAAGAGGAGGTGAAACATTTAGGGTATGCTTCGCATTTGATGAAATTTTTGTGACTCTGAAGAAAACACGGAAGGTA  
347▶ N L R P P Q E E E E V K H L G Y A S H L M E I F C D S E E N T E G  
1701 CTTCTTCACCCAGCAAGAGTCCCTCAGCAGAAACAATACCCCGGATAAAAACAGTCATTGAATATGAATATGATGTGAGAACCCTGACATTTGTGCGGG  
380▶ T S F T Q Q E S L S R T I P P D K T V I E Y E Y D V R T T D I C A G

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**Psp1406I (1893)** **Bsp120I (1884)**  
1801 GCCTGAAGAGCAGGAGCTCAGTTTGCAGGAGGAGGTGCCACACAAGGAACATTATTGGAGTGCAGGAGGTTGGCAGTCTTGGGCCCGCAACAGTTA  
413▶ P E E Q E L S L Q E E V S T Q G T L L E S Q A A L A V L G P Q T L

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**ScaI (1901)** **SalI (1999)** **PshAI (1992)**  
1901 CAGTACTCATAACCCCTCAGCTCCAAGACTTAGACCCCTGGCGCAGGAGCACACAGACTCGGAGGAGGGCCGGAGGAAGACCATCGACGACCCCTGG  
447▶ Q Y S Y T P Q L Q D L D P L A Q E H T D S E E G P E E E P S T T L

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**BamHI (2007)**  
2001 TCGACTGGGATCCCCAAACTGGCAGGCTGTGTATTCTTCGCTGTCCAGCTTCGACCAGGATTGAGAGGGCTGCGAGCCTTCTGAGGGGATGGGCTCGG  
480▶ V D W D P Q T G R L C I P S L S S F D Q D S E G C E P S E G D G L G

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**XbaI (2116)** **NgoMIV (2133)**  
2101 AGAGGAGGCTCTTCTATCTAGACTCTATGAGGAGCCGCTCCAGACAGGCCACCAGGAGAAAATGAAACCTATCTCATGCAATTCATGGAGGAATGGGGG  
513▶ E E G L L S R L Y E E P A P D R P P G E N E T Y L M Q F M E E W G

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**MseI (2254)** **NheI (2248)**  
2201 TTATATGTGAGATGAAAACTGATGCAACACTTCCTTTGCCTTTTCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAA  
547▶ L Y V Q M E N •

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**HpaI (2386)** **MfeI (2397)**  
2301 CTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAAACAA

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**EcoRI (2482)**  
2401 TTGCATTCATTTATGTTTCAGTTTCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCA

2501 TAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCAATGTGCATTAGCT  
2601 GTTTGCAGCCTCACCTTCTTTTCATGGAGTTTAAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCT

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2701 CCCACATTCCCTTTTAGTAAAATATTCAAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGC  
2801 CCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCT  
2901 GGTGTAAGTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGC  
138 T 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  
3001 TCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGCTTCTGCC  
104 E R 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  
3101 CGTTGCTCACAGCAGACCAATGGCAATGGCTTCCAGCAGACAGTACCCTGCCAATGTAGGCCTCAATGTGACAGCAGAGATGATCTCCCCAGTCTT  
71 N 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  
3201 GGTCTGATGGCCGCCCCGACATGGTGTCTGTCCATAGAGCATGGTGTCTCTCAGTGGCGACCTCCACCAGCTCCAGATCTGTGCTGAGAGATG  
38 T R I A A G V 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  
3301 TTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTC  
4 N F T K M  
3401 CAGCTTATCTGACGGTCTACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGAC

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3501 ATTTTGGAAAGTCCCCTTGTATTTACTAGTCAAAAACAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCAGC  
3601 CCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAGGTCATGTACTGG  
3701 GCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTA  
3801 AATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGGGGGGTCTGTTGGCGGTCA

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3901 GCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCG  
4001 CGTTGCTGGCGTTTTTTCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATA  
4101 CCAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCCGGGAAGCGTGGCG  
4201 CTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGTGTCTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCG  
4301 CCTTATCCGGTAACTATCGTCTTGTGAGTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGT  
4401 AGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA  
4501 AAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACCGCAGAAAAAAGGATCTC  
4601 AAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC  
4701 AGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGGTTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAAC  
4801 AAAACAACTAGCAAATAGGCTGTCCACAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA