



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGCGCAATTGAACGGGTGCCTA  
**MfeI (82)**  
101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTGTGCTGTACTGGCTCCGCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCGCTACCTGAGGCC  
**PvuII (239)**  
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  
**Bsu36I (291)**

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCCGGCTCTCCACGCTTTCCTGACCCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

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**AgeI (552)** 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTACAGTCCCTCTCTGCTGGCTGGGCTAGCCCTGTT  
**AvrII (567)** 1▶ M P L G L L W L G L A L L  
**PstI (673)**  
**EcoO109I (665)**  
601 GGGGCTCTGCATGCCAGGCCAGGACTCCACCTCAGACCTGATCCAGCCCCACCTCTGAGCAAGTCCCTCTGCAGCAGAACTCCAGGACAACCAA  
13▶ G A L H A Q A Q D S T S D L I P A P P L S K V P L Q Q N F Q D N Q

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**StuI (723)** 701 TTCAGGGAAGTGGTATGTGGTAGGCCTGGCAGGGAATGCAATTCTCAGAGAAGACAAAGACCCGCAAAAGATGTATGCCACCATCTATGAGCTGAAAG  
47▶ F Q G K W Y V V G L A G N A I L R E D K D P Q K M Y A T I Y E L K  
801 AAGACAAGAGCTACAATGTCACCTCCGTCCTGTTTAGGAAAAAGAAGTGTACTACTGGATCAGGACTTTTGTCCAGGTTGCCAGCCGGCGAGTTCAC  
80▶ E D K S Y N V T S V L F R K K K C D Y W I R T F V P G C Q P G E F T  
901 GCTGGCAACATTAAGAGTTACCTGGATTAACGAGTTACCTCGTCCGAGTGGTGGACCAACTACAACCAGCATGCTATGGTTCCTCAAGAAAGTT  
113▶ L G N I K S Y P G L T S Y L V R V V S T N Y N Q H A M V F F K K V

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**ScaI (1013)** 1001 TCTCAAAACAGGGAGTACTTCAAGATCACCTCTACGGGAGAACCAAGGAGCTGACTTCGAACTAAAGGAGAACTTCATCCGCTTCTCAAATCTCTGG  
147▶ S Q N R E Y F K I T L Y G R T K E L T S E L K E N F I R F S K S L  
**BstXI (1088)**

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**MscI (1167)** 1101 GCCTCCCTGAAAACACATCGTCTTCCCTGTCCAATCGACCAGTGTATCGACGGCTGAGTGTAGCTGGCCAGACATGATAAGATACATTGATGAGTTT  
180▶ G L P E N H I V F P V P I D Q C I D G •

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**NheI (1161)**  
1201 GGACAAACCACAACACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAG  
**HpaI (1299)**

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**MfeI (1310)** 1301 TTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATT  
**EcoRI (1395)**

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1401 CTAANAATACAGCATAGCAAACTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCA

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**SapI (1577)** 1501 ATGTGCATTAGCTGTTTGACGCCTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTCCCAAGTGTGAACTAGCTCTTCATTTCTTTATGTTTAA

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**SspI (1634)** 1601 AATGCACTGACCTCCACATTCCCTTTTGTAGTAAATATTCAGAAAATATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCC  
**Swal (1648)**

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**EcoO109I (1709)** 1701 AGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTGTGGACTTAGGGAACAAAGAACCTTTAATAGAATTTGGACAGCAAGAAAGCGAGCTTCT

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1801 AGCTTTAGTTCCTGTTGACTTGGGGGATGAGTTTCTCAATGGTGGTTTTGACCAGCTTGCATTTCATCTCAATGAGCACAAGCAGTCAGGAGCATA  
141▶ • N R 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

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**SacI (1909)** 1901 GTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCA  
109▶ D S I L 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  
**BstXI (1938)**

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2001 AAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACGACAGACAGTGCACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGA  
75▶ F D K Q G 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  
2101 TCTCCCAGTCTTGGTCTGTATGGCCGCCCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATC  
42▶ E G T K T 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

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**XmnI (2215)** 2201 CTGCTGAGAGATGTTGAAGGCTTTCATGGTGGCCCTCTATAGTGAGTGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGG  
9▶ Q Q S I N F T K M  
**AseI (2281)**

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**SacI (2338)** 2301 TGGATGGCGTCTCCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCTACCCGCTTTCGCTCAATGGGGG

2401 GAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAA  
SpeI (2436)  
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2501 ACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAA  
SnaBI (2564)

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2601 GGTCATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGG  
NdeI (2669)

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2701 GCAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGGT

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2801 CGTTGGGCGGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAAC  
PstI (2848)  
SdaI (2847)  
PacI (2855)  
BspLU11I (2865)

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2901 CGTAAAAAGGCCGCTTGGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAG  
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3001 GACTATAAAGATACCAGCGCTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCTGCCGCTTACCGGATACCTGTCGCCTTCTCCCTTC

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3101 GGGAAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAG  
ApaLI (3179)

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3201 CCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCA

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3301 GAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCC

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3401 AGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGGTTGCAAGCAGCAGATTACGCGCAGA

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3501 AAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAAT  
PacI (3595)

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3601 TAACATTTAAATCAGCGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAA  
EagI (3615)  
SwaI (3604) NotI (3614)

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3701 AACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA