



**PvuI (7)**  
**SgfI (6)**  
 1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA  


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 101 GAGAAAGTGGCGCGGGTAAACTGGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC  


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**Psp1406I (203)** **PvuII (239)**  
 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTTCACGCGCCCGCCCTACCTGAGGCC  


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 301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  


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**NgoMIV (441)**  
**NaeI (441)**  
 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT  


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**NcoI (560)**  
**BstEII (555)**  
**KasI (535)** **AgeI (552)**  
 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTCCACCATGGGCTGCATTAAAAGTAAAGAAAACAAAAGTCCAGC  
 601 CATAAAATACACACCGGAAAATCTTACAGAGCCTGTAAGCCCAAGTGCCAGTCAATTATGGAGTGAACATGCTACAGTTGCCCGACCTTCCACAAAAG  
 13▶ I K Y T P E N L T E P V S P S A S H Y G V E H A T V A P T S S T K  


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**EcoO109I (745)**  
 701 GGAGCATCAGTTAATTTTAAACAGTCTTTCCATGACACCCTTTGGAGGGTCTCAGGGGTGACTCCTTTTGGAGGAGCGTCTTCTCATTCTCAGTGGTGT  
 47▶ G A S V N F N S L S M T P F G G S S G V T P F G G A S S S F S V V  
 801 CAAGTTCATATCCTACAGGTTTAAACAGGTGGTGTCACTATATTTGGTCCCTGTGATTATGAAGCTAGAAGTACAGAAAGACCTTTCCSTTAAAGAGGG  
 80▶ S S S Y P T G L T G G V T I F V A L Y D Y E A R T T E D L S F K K G  
 901 TGAACGATTTCAAATAATTAACAATACGGAAGGAGACTGGTGGGAAGCAAGATCAATTGCTACCGGAAAGAGTGGTTATATCCCTAGCAATTAAGTAGTG  
 113▶ E R F Q I I N N T E G D W W E A R S I A T G K S G Y I P S N Y V V  
 1001 CCTGCAGATTCATTACAGCAGAAGAATGGTATTTTGGCAAAATGGGGAGAAAAGATCGCGAAAGATTACTTCTGAATCCTGGGAATCAGCGAGGTATT  
 147▶ P A D S I Q A E E W Y F G K M G R K D A E R L L L N P G N Q R G I  
 1101 TCTTAGTAAGAGAAAAGTAAACTACTAAAGGTGCTTACTCCCTCTCAATCCGTGATTGGGATGAGGTGAGGGGTGACAATGTGAAGCATTACAAGATCAG  
 180▶ F L V R E S E T T K G A Y S L S I R D W D E V R G D N V K H Y K I R  
 1201 AAACTTGACAATGGTGGCTACTACATACGACCAGAGCTCAGTTTGATACACTGCAGAAGCTGGTGAAGCACTACACAGAACATGCTGATGGATTATGC  
 213▶ K L D N G G Y Y I T T R A Q F D T L Q K L V K H Y T E H A D G L C  


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**HpaI (1305)** **XhoI (1373)**  
 1301 CACAAGTTAACTGTGTCTACTGTGAAACCCAGACTCAAGGTCTGGCAAAAGATGCTTGGGAAATCCCTCGAGAATCATTGCGACTAGAGGTGA  
 247▶ H K L T T V C P T V K P Q T Q G L A K D A W E I P R E S L R L E V  
 1401 AACTAGGTCAAGGATGCTTTGGGGAAGTGTGGATGGGAACATGGAATGGAACACAAAAGTAGCAATCAAACACTAAAGCCAGGTACAATGATGCCAGA  
 280▶ K L G Q G C F G E V W M G T W N G T T K V A I K T L K P G C T M M P E  
 1501 AGCATTCTTCAAGAAGCTCAGATAAATGAAAAGCTAAGACAGATAAACTTTCCACTCTATGCAGTTGTTTCTGAAGAGCCATTATATTGTCACC  
 313▶ A F L Q E A Q I M K K L R H D K L V P L Y A V V S E E P I Y I V T  


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**PvuII (1669)**  
 1601 GAGTTTATGTCAAAGGAAGCTTGTAGATTTCTTAAAGAAGGAGATGGAAAGTATTTGAAGCTTCCACAGCTGGTTGATATGGCTGCTCAGATCGCTG  
 347▶ E F M S K G S L L D F L K E G D G K Y L K L P Q L V D M A A Q I A  


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**BglIII (1740)** **SspI (1756)**  
 1701 ATGGCATGGCGTATATTGAAAGAATGAAGTATATTCACCGAGATCTCCGAGCTGCTAATATTCTGTAGGAGAAAATCTTATATGCAAAATAGCAGATTT  
 380▶ D G M A Y I E R M N Y I H R D L R A A N I L V G E N L I C K I A D F  


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**AseI (1812)** **BstXI (1858)**  
 1801 TGGCTTAGCAAGATTAATTGAAGACAATGAATACACGGCAAGACAAGGTGCAAAATTTCCAATCAAGTGGACAGCTCCTGAGGCTGCTCTGTATGGTCGA  
 413▶ G L A R L I E D N E Y T A R Q G A K F P I K W T A P E A A L Y G R  


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**EcoRI (1931)**  
 1901 TTTACAATAAAGTCAGATGTGTGGTCAATTTGGAATCTACAGACAGAGCTGGTAACAAAAGGAAGAGTGCCATATCCAGGTATGGTAAACCGTGAAGTAT  
 447▶ F T I K S D V W S F G I L Q T E L V T K G R V P Y P G M V N R E V  


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**BsrBI (2011)** **BamHI (2088)**  
 2001 TGGAAACAAGTAGAGCGGGGATACAGAATGCCTTGCCTCCAGGGCTGTCCGAATCCCTCCATGAATTGATGAATCTTTGCTGGAAGAAGGATCCTGATGA  
 480▶ L E Q V E R G Y R M P C P Q G C P E S L H E L M N L C W K K D P D E  
 2101 AAGACCAACATTTGAATATATTCAGTCTTCTTGGAAAGACTACTTCACTGCTACAGAGCCACAGTACCAACCAGGAGAAAATTTATAACCAAGTAACCT  
 513▶ R P T F E Y I Q S F L E D Y F T A T E P Q Y Q P G E N L •  


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**MscI (2218)**  
**ApaLI (2202)** **NheI (2212)**  
 2201 GTGTGCACAGATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAAATGCAGTGAAGAAAATGCTTTATTTGTGAAA  


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**HpaI (2350)**  
 2301 TTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAAATTGCATTCAATTTATGTTTCAGGTTCAAGGGGAGGT  


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**EcoRI (2446)**  
 2401 GTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTTAAATAACAGCATAGCAAACTTAAACCTCCAAATCAAGCCTCTACTT  
 2501 GAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGAT  


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**SspI (2685)** **SwaI (2699)**  
 2601 ATAGTGTATTTTCCCAAGGTTTGAAGTACTCTTCATTTCTTTATGTTTTAAATGCAGTACCTCCACATTCCTTTTATGTAATAATTCAGAAATAA

2701 TTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTGTGGACTTA

2801 GGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGT  
 141 • N R T Y K L P I L E E I T T  
 BstXI (2989)

2901 TTTGACCAGCTTGCCATTCACTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATG  
 126 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 C P S V V R I

3001 GATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCCGTTGCTCAGCAGACCCAATGGCAATGGCTTCAG  
 92 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 S G I A I A E A

3101 CACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTCTGATGGCCGCCCCGACATGGTGCTTGTGTGTC  
 59 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 G V H H K N D  
 StuI (3124)

3201 CTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGAGTC  
 26 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  
 BspHI (3274)

3301 GTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCT  
 AseI (3332)

3400 TATATAGACCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCC GTT GATTTACTAGTCAAAA  
 SpeI (3487)

3499 CAAACCTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTA CTGCCAAAACCGCATCATCATG

3599 GTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGTGCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGA  
 SnaBI (3615)

3699 CGTCAATAGGGGGCTACTTGGCATATGATACACTTGTATGTA CTGCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCC  
 NdeI (3720)

3799 TATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGT CAGCCAGGCGGGCCATTTACCCTGAAGTTATGTAACG

3899 CCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCC  
 SdaI (3898) PacI (3906) BspLU11I (3916)

3997 CCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGC

4097 GCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAG

4197 TTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTT CAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAAC  
 ApaLI (4230)

4297 CCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGC

4397 CTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACA

4497 AACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGTCT

4597 GACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCCAATAAAATATCTTTATTTTCATT  
 EagI (4666)  
 PacI (4646) SwaI (4655) NotI (4665)

4697 ACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGT

4797 GCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA