



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

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101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** **HindIII (245)** **Bsu36I (291)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACCGGCCCGCCCTACCTGAGGCC

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301 GCCATCCACGCCGGTTGAGTCGCGTTTTCGCCGCCTCCCGCCTGTGGTGCCTCCTGAACCTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTGTTTCGTTT

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**AgeI (552)** **BspHI (561)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGTCCATCATGACTAGCATCTTCCATTTGCCATTATCTTCATGT

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601 TAATACTTCAGATCAGAATAACAATTATCTGAAGAAAGTGAATTTTTAGTTGATAGGTCAAAAACGGTCTCATCCAGTTCTCTAAAGACCTATCCCAGAA  
13▶ L I L Q I R I Q L S E E S E F L V D R S K N G L I H V P K D L S Q K  
701 AACAAATCTTAAATATATCGAAAATATATATCTGAGCTTTGACTTCTGACATCTTACTGTCAAACTGAGGATTTTGATAATTTCTCATAAT  
46▶ T T I L N I S Q N Y I S E L W T S D I L S L S K L R I L I I S H N

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**EcoRV (815)**  
801 AGAATCCAGTATCTTGATATCAGTGTTTCAAATCAACCAGGAATTGGAATACTGGATTTGTCCACAACAAGTTGGTGAAGATTTCTTGCCACCCTA  
80▶ R I Q Y L D I S V F K F N Q E L E Y L D L S H N K L V K I S C H P

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**BstAPI (935)**  
**NsiI (933)**  
901 CTGTGAACCTCAAGCACTTGACCTGTCAATTAATGCATTTGATGCCCTGCCTATATGCAAAGAGTTTGGCAATATGTCTCAACTAAAATTTCTGGGGTT  
113▶ T V N L K H L D L S F N A F D A L P I C K E F G N M S Q L K F L G L  
1001 GAGCACCACACTTAGAAAAATCTAGTGTGCTGCCAATTGCTCATTGAATATCAGCAAGGCTTGTGCTTAGGAGAGACTTATGGGAAAAAGAA  
146▶ S T T H L E K S S V L P I A H L N I S K V L L V L G E T Y G E K E

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**EcoO109I (1107)**  
**Bsu36I (1103)** **DraIII (1139)**  
1101 GACCTGAGGGCCTTCAAGACTTAACTGAGAGTCTGCACATTGTGTTCCCCACAAACAAAGAATCCATTTATTTTGGATGTGTGAGTCAAGACTG  
180▶ D P E G L Q D F N T E S L H I V F P T N K E F H F I L D V S V K T  
1201 TAGCAATCTGGAATCTAATATCAATGTGTGCTAGAAGATAACAAATGTTCTTACTTCCTAAGTATTCTGGCGAACTTCAAACAAATCCAAAGTT  
213▶ V A N L E L S N I K C V L E D N K C S Y F L S I L A K L Q T N P K L

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**XmnI (1336)** **BamHI (1350)**  
1301 ATCAAATCTTACCTTAAACAACATTGAAACAACCTGGAATCTTTTATTAGGATCCTCCAGCTGGTTTGGCATACTGATGGTATTTCTCAATTTCA  
246▶ S N L T L N N I E T T W N S F I R I L Q L V W H T T V W Y F S I S

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**StuI (1461)**  
1401 AACGTGAAGCTACAGGGTACAGTGGACTTCAGAGATTTTATTGATTCTGGCACTTCTTGAAGGCCTTGTCTATACACCAAGTTGTCAGCGATGTGTTCCG  
280▶ N V K L Q G Q L D F R D F D Y S G T S L K A L S I H Q V V S D V F

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**BstBI (1531)**  
1501 GTTTTCCGCAAAGTTATATCTATGAAATCTTTTCAATATGAACATCAAAAATTTTACAGTGTCTGGTACACGCATGGTCCATGCTTTGCCATCCAA  
313▶ G F P Q S Y I Y E I F S N M N I K N F T V S G T R M V H M L C P S K  
1601 AATTAGCCCGTTCCTGCATTTGGATTTTCCAATAATCTTAAACAGACACGGTTTTTGAATTTGGGGCACCTTACTGAGTTGGAGACACTTATTTTA  
346▶ I S P F L H L D F S N N L L T D T V F E N C G H L T E L E T L I L  
1701 CAAATGAATCAATTAAGAAGTCTTCAAAAATAGCTGAAATGACTACACAGATGAAGTCTCTGCAACAATTGGATATTAGCCAGAATTTCTGTAAGCTATG  
380▶ Q M N Q L K E L S K I A E M T T Q M K S L Q Q L D I S Q N S V S Y  
1801 ATGAAAAGAAAGGAGACTGTTCTTGACTAAAAGTTTATTAAGTTTAAATATGCTTCAAATATACTTACTGACACTATTTTTCAGATGTTTACCTCCCAG  
413▶ D E K K G D C S W T K S L L S L N M S S N I L T D T I F R C L P P R

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**HindIII (1965)**  
1901 GATCAAGTACTTGATCTTCACAGCAATAAAAATAAAGAGCATTCTAAACAAGTCGTAAGCTTTGCAAGAACTCAATGTTGCTTTCAATTCT  
446▶ I K V L D L H S N K I K S I P K Q V V K L E A L Q E L N V A F N S  
2001 TTAAGTACCTTCTGGATGTGGCAGCTTTAGCAGCCTTTCTGTATTGATCATTGATCACAATTCAGTTTCCACCCATCGGCTGATTTCTCCAGAGCT  
480▶ L T D L P G C G S F S S L S V L I I D H N S V S H P S A D F F Q S  
2101 GCCAGAAGATGAGTCAATAAAGCAGGGGACAATCCATTCCAATGTACCTGTGAGCTAGGAGAATTTGTCAAAAATATAGACCAAGTATCAAGTGAAGT  
513▶ C Q K M R S I K A G D N P F Q C T C E L G E F V K N I D Q V S S E V

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**BspLU11I (2274)**  
2201 GTTAGAGGGCTGGCTGATTCTTATAAGTGTGACTACCCGAAAGTTATAGAGGAACCTACTAAAGGACTTTACATGTCTGAATTATCCTGCAACATA  
546▶ L E G W P D S Y K C D Y P E S Y R G T L L K D F H M S E L S C N I

**XcmI (2328)**  
2301 ACTCTGCTGATCGTCACCATCGTTGCCACCATGCTGGTGTGGCTGTGACTGTGACCTCCCTCTGCAGCTACTGGATCTGCCCTGGTATCTCAGGATGG  
580▶ T L L I V T I V A T M L V L A V T V T S L C S Y L D L P W Y L R M

**BstXI (2325)** **PstI (2362)**  
2401 TGTGCCAGTGGACCCAGACCCGGCGCAGGGCCAGGAACATACCCTTAGAAGAACTCCAAGAAATCTCGGATCCTATCCCTATGATGTGCCAGACTATGC  
613▶ V C Q W T Q T R R R A R N I P L E E L Q R N L G S Y P Y D V P D Y A

**BamHI (2468)**  
2501 TGGCTATCCATATGATGTTCTGATTATGCTGGATACCCCTTATGATGTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGATAAGATACATTGATGA  
646▶ G Y P Y D V P D Y A G Y P Y D V P D Y A •

**NdeI (2508)** **NheI (2565)** **MscI (2571)**  
2601 GTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAA

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**HpaI (2703)**  
2701 CAAGTTAAACAACAACATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGG  
2801 AATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTT

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**SapI (2981)**  
2901 GCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTTCCCAAGGTTTGAAGTACTAGCTCTTCATTTCTTTATGT

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**SspI (3038)** **SwaI (3052)**  
3001 TTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTGAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGA

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**EcoO109I (3113)**  
3101 ATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGC

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3201 TTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTCAGGAG  
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

**SacI (3313)** **BstXI (3342)**  
3301 CATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGT  
110▶ Y 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

**StuI (3477)**  
3401 GTCAAAGTCTTCTGCCCCTTGCTCACAGCAGACCCAATGGCAATGGCTTCCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAG  
77▶ D 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

3501 ATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGCTCCA  
43▶ I I 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

**BspHI (3627)**  
3601 GATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTGTATTATACTATGCCGATATACTATGCCGATGATTAATTGCAAAAC  
10▶ D Q Q S I N F T K M

**XmnI (3619)** **AseI (3685)**  
3701 AGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGG

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**SpeI (3840)**  
3801 GGCGGAGTTGTTACGACATTTTGAAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAAATCCCCGTGAG

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**SnaBI (3968)**  
3901 TCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAAGTCCC

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**NdeI (4073)**  
4001 ATAAGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAA  
4101 GTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATATTGACGTCAATGGGCGG

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**PacI (4259)**  
4201 GGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCTGAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAG  
4301 GAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCG  
4401 ACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCC

**ApaI (4583)**

4501 **CTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGT**  
4601 **TCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATT**  
4701 **AGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGA**  
4801 **AGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCG**  
4901 **CAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGT**

PacI (4999)

**EagI (5019)**

Swal (5008) **NotI (5018)**

5001 **TAATTAACATTTAAATCAGCGGCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCA**  
5101 **TCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA**