



**PvuI (7)**  
**SgfI (6)**
**EcoNI (96)**

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
 101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

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

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCGCCCGCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

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**AgeI (552)**
**BspHI (568)**

501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTAGGAGGGCCATCATGAAAGTGTACTCAGACTTATTTGTTTC  
 601 ATAGTCTACTGATTTCTTCTCTGAGGCTGATAAATGCAAGGAACGTGAAGAAAAATAATTTTAGTGTCTGCAATGAAATTGATGTTTCGTCCTT  
 11▶ I A L L I S S L E A D K C K E R E E K I I L V S S A N E I D V R P  
 701 GTCCTCTTAACCCAAATGAACACAAAGGCACTATAACTGGTATAAAGATGACAGCAAGACACCTGTATCTACAGAACAAGCCTCCAGGATTCATCAACA  
 44▶ C P L N P N E H K G T I T W Y K D D S K T P V S T E Q A S R I H Q H  
 801 CAAAGAGAAACTTTGTTTGTCTGCTAAGGTGGAGGATTGAGGACATTACTATTGCGTGGTAAAGAAATTCATCTTACTGCCTCAGAATTAATAAGT  
 77▶ K E K L W F V P A K V E D S G H Y Y C V V R N S S Y C L R I K I S  
 901 GCAAAATTTGTGGAGAATGAGCCTAATGTTATAATGCACAAAGCCATATTTAAGCAGAAACTACCGTTGCAAGGAGACGGAGGACTTGTGTGCCCTT  
 111▶ A K F V E N E P N L C Y N A Q A I F K Q K L P V A G D G G L V A G T G P  
 1001 ATATGGAGTTTTTAAAAATGAAAATAATGAGTTACCTAAATACAGTGGTATAAAGGATTGCAAACTCTACTTGTGACAATATACACTTTAGTGGAGT  
 144▶ Y M E F F K N E N N E L P K L Q W Y K D C K P L L L D N I H F S G V

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**NsiI (1159)**
**XmaI (1198)**

1101 CAAAGATAGGCTCATCGTATGAATGTGGCTGAAAAGCATAGAGGAACTATACTTGTGCATGCATCCTACACATACTTGGGCAAGCAATATCCTATTACC  
 177▶ K D R L I V M N V A E K H R G N Y T C H A S Y T Y L G K Q Y P I T

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**XbaI (1220)**
**StuI (1242)**
**BamHI (1290)**

1201 CGGGTAATAGAATTTACTCTAGAGGAAAACAAACCCACAAGGCTGTGATTGTGAGCCAGCTAATGAGACAATGGAAGTAGACTTGGGATCCCAGA  
 211▶ R V I E F I T L E E N K P T R P V I V S P A N E T M E V D L G S Q  
 1301 TACAATTGATCTGTAATGTCACCGGCCAGTTGAGTGACATTGCTTACTGGAAGTGGTAAAGGTTGAGTAAAGTACAGGAGTACCCAGTGTAGGGGAAGA  
 244▶ I Q L I C N V T G Q L S D I A Y W K N G S V I D E D P V I D E D  
 1401 CTATTACAGTGTGAAAAATCCTGCAAAACAAAAGAAGGAGTACCCTCATCACAGTGCTTAATATATCGGAAATGAAAGTAGATTTTATAAACATCCATTT  
 277▶ Y Y S V E N P A N K R R S T L I T V L N I S E I E S R F Y K H P F  
 1501 ACCTGTTTTGCCAAGAATACACATGGTATAGATGCAGCATATATCCAGTAAATATATCCAGTCACTAATTTCCAGAAGCACATGATTGGTATATGTGTCA  
 311▶ T C F A K N T H G I D A A Y I Q L I Y P V T N F Q K H M I G I C V  
 1601 CGTTGACAGTCATAAATGTGTGTTCTGTTTTATCATATAAAATCTTCAAGATTGACATTGTGCTTGGTACAGGATCCTGCTATGATTTTCTCCCAAT  
 344▶ T L T V I I V C S V F I Y K I D I V L W Y R D S C Y D F L P I

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**HindIII (1702)**

1701 AAAAGCTTCAGATGGAAAGACCTATGACGCATATATACTGTATCCAAAGACTGTTGGGGAAGGGTCTACCTCTGACTGTGATATTTTTGTGTTTAAAGTC  
 377▶ K A S D G K T Y D A Y I L Y P K T V G E G S T S D C D I F V F K V

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**Bsu36I (1803)**
**AseI (1887)**

1801 TTGCTGAGGTCTTGAAAAACAGTGTGGATATAAGCTGTTTCATTTATGGAAGGGATGACTACGTTGGGGAAGACATTGTTGAGGTCTTAATGAAAACG  
 411▶ L P E V L E K Q C G Y K L F I Y G R D D Y V G E D I V E V I N E N

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**PvuII (1952)**
**SapI (1974)**

1901 TAAAGAAAAGCAGAAGACTGATTATCATTTTGTGAGGAGAAACATCAGGCTTCAGCTGGTGGTTCATCTGAAGAGCAAATAGCCATGTATAATGC  
 444▶ V K K S R R L I I I L V R E T S G F S W L G G S S E E Q I A M Y N A

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**ClaI (2072)**

2001 TCTTGTTCAAGATGGAATTAAGTTGCTCTGCTGAGCTGGAGAAAATCCAAGACTATGAGAAAATGCCAGAATCGATTAAATTCATTAAGCAGAAAACAT  
 477▶ L V Q D G I K V V L L E L E K I Q D Y E K M P E S I K F I K Q K H

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**PshAI (2134)**
**Acc65I (2173)**
**BstEII (2197)**

2101 GGGGCTATCCGCTGGTCAGGGGACTTTACACAGGGACACAGTCTGCAAAGACAAGGTTCTGGAAGAATGTCAGGTACCACATGCCAGTCCAGCGACGGT  
 511▶ G A I R W S G D F T Q G P Q S A K T R F W K N V R Y H M P V Q R R

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**BbrPI (2262)**

2201 CACCTTCATTAACACCAGTTACTGTCCAGCCACTAAGGAGAAAAGTGCAAAAGAGAGGCTCACGTGCCTCTCGGGTAGCATGGAGAAGTTGCCAAGAG  
 544▶ S P S S K H Q L L S P A T K E K L Q R E A H V P L G •

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**MscI (2330)**

2301 TTCTTTAGTGCCTCCTGTCTTATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAATAGAATGCAGTAAAAAATGCCT

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**HpaI (2462)**

2401 TTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCAATTTATGTTTCAGGT

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**EcoRI (2558)**

2501 TCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTTAACTCCAAATC

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2601 AAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTTCAT

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**SapI (2740)**
**SspI (2797)**

2701 GGAGTTTAAAGATAGTGTATTTTCCCAAGTTTGAAGTCTCTTCTTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAT

2801 <sup>Swal (2811)</sup> **EcoO109I (2872)**  
 ATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAG

2901 TAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTC  
 141 • N R T Y K L P I L E

3001 **SacI (3072)**  
 CTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTG  
 130 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 C P S

3101 **BstXI (3101)**  
 ACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGG  
 96 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 S G I A

3201 **StuI (3236)**  
 CAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATG  
 63 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 G V H

3301 **XmnI (3378)**  
 GTGCTTGTTCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTC  
 30 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

3401 **AseI (3444)**  
 CTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAA

3501 **SacI (3501)** **SpeI (3599)**  
 CGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTA

3601 CTAGTCAAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTACTGCCAAAACCG

3701 **SnaBI (3727)**  
 CATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTA

3801 **NdeI (3832)**  
 CCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTACCGTAAATACTCCACCCATTGACGTCAAT

3901 GGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGGGGGGTCTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAG

4001 **PacI (4018)** **PstI (4011)** **SdaI (4010)** **BspLU11I (4028)**  
 TTATGTAACGCTGCAGGTTAATTAAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGC

4101 TCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAAGCTC

4201 CCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGG

4301 **ApaLI (4342)**  
 TATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTGTGCACGAACCCCGTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTG

4401 AGTCCAACCCGGTAAAGACACGACTTATCGCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAA

4501 GTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCC

4601 GGCAAAACAAACCACCGCTGGTAGCGGTGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTA

4701 **PacI (4758)** **Swal (4767)** **EagI (4778)** **NotI (4777)**  
 CGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTA

4801 TTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACATAACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTG

4901 TCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTATCGAA