



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA **MfeI (82)**

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCAACTCTACGCTTTGTTTCGTTT

**KasI (535)** 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTTCATGAGCTCCTGCGCCTCGCTCGGGGGCCCGGTGCCCT **AgeI (552)** **BspHI (560)**  
1 M S S C A S L G G P V P L

**XmaI (606)** 601 GCCACCCCGGGCCCGTCCGCCGCTGACGTCCGGTGCCCCGCGGGCCCTGCATGTGGAGCTGCCGTCTCAGCAGCGGGTCTCCGACATCTCCGG **BspEI (695)**  
13 P P P G P S A A L T S G A P A R A L H V E L P S Q Q R R L R H L R  
701 AACATCGCTGCTCGGAACATTGTTAATAGAAATGGCCATCAGCTTCTGGATACCTACTTCACTTCTATTGTGTGATAATGAGAAAACTTTAAAGAAT  
47 N I A A R N I V N R N G H Q L L D T Y F T L H L C D N E K I F K E

**EcoRI (822)** 801 TTTATAGGAGTGAAGTGATTAAGAAATTCCTTGAATCCGACGTGGAGGAGTCTTGAATTTGGAATAATGCCGGATCGTCTGGATACATCTGTGTCTGCTT  
80 F Y R S E V I K N S L N P T W R S L D F G I M P D R L D T S V S C F

**StuI (929)** 901 TGTGGTGAAGATTTGGGGTGAAGGAAGAGGCTTTCAGCTGTTGATAGAGTGGAAAGTCTACCTGGATGGGCTGAAGTACTTGGGACAGCAGATCCAT  
113 V V K I W G G K E E A F Q L L I E W K V Y L D G L K Y L G Q Q I H **ScaI (977)**  
1001 GCCCGCAACCAGAATGAAATCATTTTTGGGCTGAATGATGGTACTACGGTGCCTCTGTAACACAAGGGTCAATCAAAACGCACAGAAGAACCCTCTTC  
147 A R N Q N E I I F G L N D G Y Y G A P C E H K G H P N A Q K N L L  
1101 AGGTGGACCAAGACTGTGTCGCAATTCACGATGCTTCTCTTGGTGGGCTTCATAGAGCCAGTGTGCAATTAACAGACTCAGGTAACGTTCA  
180 Q V D Q N C V R N S Y D V F S L L R L H R A Q C A I K Q T Q V T V Q

**BstBI (1298)** 1201 GAGACTTGAAAGGAAATGAAGAAAACTAAGACTCACATCGACAAGCAATGAGCTGAAAAAGAAAGTGAATGTCTGCGATTGAAAATTTGGTGCTT  
213 R L G K E I E E K L R L T S T S N E L K K E S E C L R L K I L V L

**Eco47III (1326)** 1301 CGAAATGAACTGGAAGACAGAAGAAAGCGCTGGGGCGGGAGGTGGCCTTCTGCATAAGCAACAGATGGCTCTACAGGACAAAGGAAGTGCATTTTCCA  
247 R N E L E R Q K K A L G R E V A F L H K Q Q M A L Q D K G S A F S  
1401 CTGAGCATGGCAAGCTCCAGTCCAGTCCAGTCCCTGAGTGAGCTGAGGAAAGAGTGTACTGCCAAAAGGGAATCTTTCTGAAGACTAATGTCAGTT  
280 T E H G K L Q L Q K D S L S E L R K E C T A K R E L F L K T N A Q L  
1501 GACCATCCGCTGCAGGCAGTACTCTCAGAGCTGTCTACATTTACCTATTGATTTGAATGAGCAAGGATTATTTGTATGTGGTGTCAAGTTGCCT  
313 T I R C R Q L L S E L S Y I Y P I D L N E H K D Y F V C G V K L P  
1601 AATTCGAGGACTTCCAAGCAAAAGAGGATGGAAGCATTGCCGTGCCCTTGGTTACTGTCACATTTGGTCTCCATGATCTCCTTCTTCTACAAGTAC  
347 N S E D F Q A K E D G S I A V A L G Y T A H L V S M I S F F L Q V

**Bsu36I (1701)** 1701 CCCTCAGGTATCCATAATTCACAAGGGTCCAGATCAACAATCAAAGATAACATCAACGACAAGCTGACAGAAAAGGAGCGAGAGTTTCCACTGTATCC  
380 P L R Y P I I H K G S R S T I K D N I N D K L T E K E R E F P L Y P  
1801 AAAGGGAGGGGAGAAGCTGCAGTTTGACTATGGTGTCTACTTCTGAACAAGAACATAGCACAGCTGAGATACCAGCATGGCTGGGGACTCCAGACTG  
413 K G G E K L Q F D Y G V Y L L N K N I A Q L R Y Q H G L G T P D L  
1901 AGGCAAACTCTTCTAACCTGAAAACTTCAATGGAGCAGGACTGATGGTCAAGTGTGACAGACATCACATCTCCAATGCCATCCCTGTCCGGAAGAGAC  
447 R Q T L P N L K N F M E H G L M V R C D R H H I S N A I P V P K R  
2001 AAAGCTCCACGTTTGGGGGTGCAGATGGAGGCTTCTCTGCGGGTATCCATCACCAGATAAAGTCCATCGCAAGCGGGCCAGCTCAGAGAACGAGAGACT  
480 Q S S T F G G A D G G F S A G I P S P D K V H R K R A S S E N E R L

**XmaI (2146)** 2101 CCAGTACAAAACCCACCTCCAGCTACAATTCAGCATTGACACAGCCGGGGTGGCCATGCCACCTCGGGAGACTCTGAGAGAAAGGTGGCCCTCTG  
513 Q Y K T P P P S Y N S A L T Q P G V A M P T S G D S E R K V A P L

**BsrBI (2274)** 2201 TCCTCCTCCTGGACACCTCCCTGGACTTCTCCAAAGAAAACAAGAAAGCAGGAGTAGACCTGGGAGAGTGTGAGCGGAGACCAGGAAACTCGGACT  
547 S S S L D T S L D F S K E N K K A G V D L G S S V S G D H G N S D  
2301 CCGCCAAGAGCAGGGGAAAGCCCTGCCTGGGCACCTGGCAGCGTGAATGGCACTGCACTGCCAGCGAGCAGGCTGGCCCTGCCGGCACCTGCTGCC  
580 S G Q E Q G E A L P G H L A A V N G T A L P S E Q A G P A G T L L P

**BstEII (2494)** 2401 AGGCTCGTCCACCCGGCCCTCAGCTGAGCTCTGCTGTGAGTGGAGCAAGCAGAGAAATCATCGGGCTGGAAGCCACAGGCTTACCTCGGGTGC  
613 G S C H P A P S A E L C C A V E Q A E E I I G L E A T G F T S G D  
2501 CAGCTGGAGCGCTCAGTGCATCCCGTGGACAGCGAGTGGCAGTGGAGTGTGACGAGCAGGTGCTGGGGAGTTTGAAGAGTTCTCTCGCAGGATCT  
647 Q L E A L S C I P V D S A V A V E C D E Q V L G E F E E F S R R I

**NheI (2672)** 2601 ATGCCCTCAGCGAGAAGCTGTCCAGCTTCCGCCGCTCGCAGGATTTGACAAGTGAAGCAGGAGGCAAGGCTAGCTGGCCAGACATGATAAGATAACA  
680 Y A L S E N V S S F R R P R R S S D K •

2701 TTGATGAGTTGGACAAACCACAACATAAGTGCAGTGAAGAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTAAGCTG

**HpaI (2810)** 2801 CAATAAACAAAGTTAACAAACAACATTCATTTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGTTTTTAAAGCAAGTAAACCTCTACAATGT

2901 <sup>EcoRI (2906)</sup>  
 GGTATGGAATTCTAAAATACAGCATAGCAAAAACCTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGG  
 3001 GGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTTCCAAGGTTTGAAGTACTCTTCATTTTC

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3101 <sup>SspI (3145) SwaI (3159)</sup>  
 TTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATT  
 3201 AGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAA

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3301 <sup>BstXI (3449)</sup>  
 AGCGAGCTTCTAGCTTTAGTTCCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTTCATCTCAATGAGCACAAAGCAG  
 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  
 3401 <sup>StuI (3584)</sup>  
 TCAGGAGCATAGTCAGAGATGAGCTCTGCGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCA  
 112 D P A 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

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3501 <sup>BspHI (3734) AseI (3792)</sup>  
 CAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCCAGCACAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGAC  
 79 I T 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  
 3601 AGCAGAGATGATCTCCCAGTCTGGTCTGATGGCCGCCGACATGGTCTTGTTCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACC  
 46 A S 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

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3701 <sup>SpeI (3947)</sup>  
 AGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGAGTCTGATTATACTATGCCGATATACTATGCCGATGATTAATTG  
 12 L E L D Q Q S I N F T K M  
 3801 TCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTGCG

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3901 <sup>SnaBI (4075)</sup>  
 TCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATC

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4000 <sup>NdeI (4180)</sup>  
 CCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCGCAAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGG

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4100 <sup>SdaI (4358) PacI (4366) BspLU11I (4376)</sup>  
 AAAGTCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCAATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGT  
 4200 ACTGCCAAGTGGGCGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCA

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4300 <sup>SdaI (4358) PacI (4366) BspLU11I (4376)</sup>  
 ATGGGCGGGGTCGTTGGGCGGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTG C A G T T A A T T A A G A A C A T G T G A G C A A A G G C C A G C  
 4398 AAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTG  
 4498 GCGAAACCCGACAGGACTATAAAGATACAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCC

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4598 <sup>ApaLI (4690)</sup>  
 GCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCGCTCCAAGCTGGGCTGTGTGCAGC  
 4698 AACCCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGG  
 4798 TAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAAGCAGTATTTGGTATCTGC  
 4898 GCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGC  
 4998 AGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGT

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5098 <sup>EagI (5126) PacI (5106) SwaI (5115) NotI (5125)</sup>  
 CATGGCTAGTTAATTAACATTTAAATC AGCGGCCCAATAAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACAT  
 5198 ACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA