



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)** 101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGC  
**EcoNI (96)**

**Psp1406I (203)** 201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACCGCCGCCCGCCCTACCTGAGGCC  
**Bsu36I (291)**  
**EcoNI (287)** 301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCTGTGGTGCCTCTGAAGTGCCTCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
**NaeI (441)** 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGTCTTTGTTTCGTTT

**NcoI (560)**  
**BstEII (555)**  
**KasI (535)** 501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTACCATTGGAGGGGAGGGCGCGGCAGCGCGGGCGGGGCAC  
**AgeI (552)** 1 M E G E G G G S G G A G T

**RsrII (655)** 601 CAGCGGGACAGCGGCGAGCGGCGGAGCAGCTCCTTACTGTCAAGCACGAGCTGCGGACCGCAACTTAACAGGACACGAGAGAAGTGGGGATTGAA  
13 S G D S G D G G E Q L L T V K H E L R T A N L T G H A E K V G I E

**AvrII (720)** 701 AACTTTGAGCTGCTGAAGGTCCTAGGAACTGGAGCTTATGGAAAGTATTTCTAGTTCGTAATAAAGCGCCATGATGCTGAAAGCTGATGCTATGA  
47 N F E L L K V L G T G A Y G K V F L V R K I S G H D A G K L Y A M  
**BstXI (771)** 801 AGTTTTTAAAAAGGCAACAATAGTTTCCAGAAAGCTAAAACACAGAGCATACAAGGACAGAACGACAGTTTCTGGAGCATTAGACAGTCGCCATTTTT  
80 K V L K K A T I V Q K A K T T E H T R T E R Q V L E H I R Q S P F L  
901 GGTGACATTGACATATGCTTTCCAGACAGAGACCAAGCTTCATCTCATTAGATTATATAAAATGGTGGAGAAGCTTTTACTCATCTTTCTCAAAGAGAG  
113 V T L H Y A F Q T E T K L H L I L D Y I N G G E L F T H L S Q R E

**DraIII (1012)** 1001 CGTTTCACAGACGAAGTGCAGATCTATGTTGGAGAGATTGTGCTTCCCTGGAACACCTGCACAAGTTGGGGATTATATACCGTGACATTAAGCTTG  
147 R F T E H E V Q I Y V G E I V L A L E H L H K L G I I Y R D I K L  
1101 AAAATATTCTCCTTATTGATTCTAACGGCCATGTGGTCTGACAGATTTCCGTTCTAGTAAGGAGTTTGTGGCCGATGAAACTGAAAGAGCATATCTTTTTG  
180 E N I L L D S N G H V V L T D F G L S K E F V A D E T E R A Y S F C  
1201 TGGAACTATTGAATACATGGCTCCAGATATTGTCAGAGGGGTGATTCGGGACACGACAAGGCAGTTGACTGGTGGAGCTTAGGTGTTCTAATGTATGAG  
213 G T I E Y M A P D I V R G G D S G H D K A V D W W S L G V L M Y E

**EcoRV (1356)** 1301 CTACTAACTGGAGCATCTCCTTTACTGTGATGGAGAAAAAATCCAGGCTGAGATATCTAGGAGAATCTTAAAAAGTGAGCCTCCGTATCCCCAGG  
247 L L T G A S P F T V D G E K N S Q A E I S R R I L K S E P P Y P Q

**XcmI (1451)** 1401 AAATGAGCACAGTAGCTAAAGACCTACTTACGCGTCTCTTGTGAAAGATCCCAAGAAGCATTGGGATGTGGCCACCGGATGCAGAAGAAATCAAAGA  
280 E M S T V A K D L L Q R L L M K D P K K R L G C G P R D A E E I K E  
1501 ACATCTCTTCTTTGAGAAGATAAAGTGGGATGACTTAGCTGCCAAAAAGTGCCTGCGCCATTCAAGCCGGTATCCGGGATGAGTTAGATGTGAGTAAC  
313 H L F F E K I K W D D L A A K K V P A P F K P V I R D E L D V S N  
1601 TTCGCTGAAGAGTTCACAGAGATGGACCCACCTACTCTCCCGTGCCTTGCACAGAGCTCCGAGCGACTGTTTCAGGGCTATTCTTCTGTTGCTCCAT  
347 F A E E F T E M D P T Y S P A A L P Q S S E R L F Q G Y S F V A P

**NdeI (1747)** 1701 CTATTCTCTTCAAGCGTAACGCAGCTGTATAGATCCTCTTCAAGTTCATATGGGAGTTGACCGTCTGGAGTGACAAATGTTGCCAGGAGTGAATGAT  
380 S I L F K R N A A V I D P L Q F H M G V D R P G V T N V A R S A M M

**BsrGI (1887)** 1801 GAAGGACTCACCTTCTATCAACACTATGACCTAGATCTGAAGGACAAACCTTTGGGAGAAGGAAGTTTTCAATTTGTGCGAAGTGTACACAAAA  
413 K D S P F Y Q H Y D L D L K D K P L G E G S F S I C R K C V H K K  
1901 ACTAACCAAGCATTGCTGTCAAATAATCAGCAAAAGGATGGAAGCAATACTCAGAAAGAAATAACAGCTCTGAAACTCTGCAAGGACACCCCAATA  
447 T N Q A F A V K I I S K R M E A N T Q K E I T A L K L C E G H P N  
2001 TTGTGAAACTACATGAAGTTTTTACGATCAGGTGGCAGCGTCTGCTCAGCCCCAGGACAGGTTGTTCTATGCTCTTCTACTCTTAGCTCTGCTTTT  
480 I V K L H E V F H D Q V A A S A Q P P G Q V V L C S L L L L A L L F  
2101 CAACAGAAGTCTCACACGGAAGCCTGCTACTTGGACATGGCTGGTCCATAGCACCTCTCAGCTCCCTCCATTGCCACCTCCCTGCTGAAATTTGTGCTA  
513 N R S L T R K P V T W T W L V H S T S Q L P P L P P P M P E I V L  
2201 TTTATTCTTCTCTGACAAATGGACAGCTTCATACGTTTCTTGTGATGGAAGTCTGAATGGCGGAGAGCTGTTCCGAGCGCATCAAGAGAAAGAGCACT  
547 F I L L S D N G Q L H T F L V M E L L N G G E L F E R I K R K K H  
2301 TCAGCGAGACTGAGCGACTACATCGGGAAGCTTGTGCTGAGTGTGAGCCACATGCAGATGTGGAGTGGTGCACAGAGATCTGAAGCCTGAGAA  
580 F S E T E A S Y I M R K L V S A V S H M H D V G V V H R D L K P E N  
2401 TCTGTTGTTCACTGATGAAAACGACAATTTGAAATTAAGTATTGACTTTGGGTTTGCACGCTCAAGCCACCTGACAATCAGCCCTCAAGACCCCG  
613 L L F T D E N D N L E I K V I D F G F A R L K P P D N Q P L K T P

**Bst1107I (2589)** 2501 TGCTTACCTCCACTACGAGCACCGGAGCTCTTACGACACAATGGCTACGATGAGTCTGTGACCTGTGGAGCTTGGTGTATCCTGTATACAATGC  
647 C F T L H Y A A P E L L T H N G Y D E S C D L W S L G V I L Y T M  
2601 TGTCAGGGCAGGTGCCATTCCAGTCTCATGACAGAAGTTAAACATGCACAGTGCAGTGAATCATGAAGAAAATTAAGGGAGACTTCTCCTTTGA  
680 L S G Q V P F Q S H D R S L T C T S A V E I M K K I K K G D F S F E  
2701 AGGAGAAGCGTGAAGAATGTATCCCAAGAGGCTAAAGATTTGATTCAGGGCTTCTTACAGTTGATCCAAATAAAGGCTGAAAATGTCTGGTTTGAGA  
713 G E A W K N V S Q E A K D L I Q G L L T V D P N K R K L K M S G L R  
2801 TACAATGAATGGCTTCCAGGATGGCAGTCACTGCTCCAATCCTCTGATGACTCCAGACATTCTGGGATCGTCAGGAGCAGCTGTGCACACCTGTGTGA  
747 Y N E W L O D G S O L S S N P L M T P D I L G S S G A A V H T C V

2901 AAGCAACCTTTCATGCCTTTAACAAGTATAAGAGAGAAGGATTTTGCCTGCAGAATGTGGATAAGGCCCTTTGGCTAAGAGGAGGAAAATGAAGAGGAC  
780▶K A T F H A F N K Y K R E G F C L Q N V D K A P L A K R R K M K R T

**BsrBI (3042)**

3001 CAGCACCAGCACAGACTCGCAGCAGCTCCAGCGAGAGCTCCCGTCTCTCCTCCAGTCCCACGGCAAGACAACGCCTACCAAGACGCTGCAGCCC  
813▶ S T S T E T R S S S S E S S R S S S S Q S H G K T T P T K T L Q P

**MscI (3178)**

3101 AGCAATCCCACCGAAGGCAGTAACCCAGACACCCTCTTCCAGTTCAGACTGACCCCTGCACCTCAGCTCCGCTAGCTGGCCAGACATGATAAGATACA  
847▶ S N P T E G S N P D T L F Q F S D •

**NheI (3172)**

3201 TTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTG

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**HpaI (3310) MfeI (3321)**

3301 CAATAACAAGTTAACAACAACAATTGCATTCTTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGTTTTTTTAAAGCAAGTAAAACCTCTACAAATGT

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**EcoRI (3406)**

3401 GGTATGGAATCTAAAATACAGCATAGCAAACTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGG  
3501 GGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGTTTTGAACTAGCTCTTCATTTCC

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**SwaI (3659)**

3601 TTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATT

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3701 AGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAA

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3801 AGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAG  
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

**BstXI (3949)**

3901 TCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCA  
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

**StuI (4084)**

4001 CAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCCAGCACAGACAGTACCTGCCAATGTAGGCCTCAATGTGGAC  
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

4101 AGCAGAGATGATCTCCAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTGCTCCTCATAGAGCATGGTGTCTTCTCAGTGGCAGCTCCACC  
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

**BbsI (4230)**

4201 AGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTATGATGGCCCTCTATAGTGTGATTATACTATGCCGATATACTATGCCGATGATTAATTG  
12▶ L E L D Q Q S I N F T K M

**AseI (4292)**

4301 TCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCC

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**SpeI (4447)**

4401 TCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATC

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**SnaBI (4575)**

4500 CCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGG

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**NdeI (4680)**

4600 AAAGTCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCATTACCCTGATTGACGTCAATAGGGGGGCTACTTGGCATATGATACACTTGATGT

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4700 ACTGCCAAGTGGGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCA

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**SdaI (4858)PaeI (4866) BspLU11I (4876)**

4800 ATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCATTACCCTAAGTTATGTAACGCTG C A G G T T A A T T A A G A A C A T G T G A G C A A A A G C C A G C  
4898 AAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTG  
4998 GCGAAACCCGACAGGACTATAAAGATACAGGCGTTTTCCCTGGAAGCTCCCTGTCGCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCC  
5098 GCCTTCTCCCTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGTTGAGGTGCTGCTCGCTCAAGCTGGGCTGTGTGCAGC  
5198 AACCCCGGTTGAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTGTTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGG  
5298 TAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAAGTATTTGGTATCTGC  
5398 GCTCTGTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTCCGCAACAAACCCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGC  
5498 AGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGT

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**EagI (5626)**

**PaeI (5606) SwaI (5615) NotI (5625)**

5598 CATGGCTAGTTAATTAACATTTAAATC AGCGCGCGCAATAAATAATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTTGTGTGAATCGTAACTAACAT

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5698 ACGCTCTCCATCAAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCGAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA