



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)**  
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACC GTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTCACGCGCCCGCCCTACCTGAGGCC  
**HindIII (245)**  
301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTAGCCGGCTCTCCACGCTTTGCTGACCCGCTTGCTGCTCAACTCTACGCTTTTGTTCGTTT

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**AgeI (552)** 501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCAGCATGCCCTCCTGGGCCCTTTCATGGTCACTCCTGCCT  
**Bsp120I (572)**  
601 CCTCTGGCCCTCAAAACCTGGCCCAAGTCAGCAGCCAAGATGTCTCCTTGTGGCATCAGACTCAGAGCCCTGAAGTGTTCCTCCGAACATTTGAG  
13▶ L L A P Q N L A Q V S S Q D V S L L A S D S E P L K C F S R T F E

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**SacII (769)**  
701 GACCTCACTTGTCTTGGGATGAGGAAGAGGCAGCGCCAGTGGGACATACCAGCTGTGTATGCCTACCCGCGGGAGAAGCCCCGTGCTTGCCCCCTGA  
47▶ D L T C F W D E E E A A P S G T Y Q L L Y A Y P R E K P R A C P L  
801 GTTCCCAGAGCATGCCCCACTTTGGAACCCGATACGTGTGCCAGTTTCCAGACCAGGAGGAAGTGCCTCTTCTTTCCGCTGCACCTCTGGGTGAAGAA  
80▶ S S Q S M P H F G T R Y V C Q F P D Q E E V R L F F P L H L W V K N

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**NgoMIV (957)** 901 TGTGTTCTAAACCAGACTCGGACTCAGCGAGTCTCTTTGTGGACAGTGTAGGCCTGCGCGCTCCCCAGTATCATCAAGGCCATGGGTGGGAGCCAG  
113▶ V F L N Q T R T Q R V L F V D S V G L P A P P S I I K A M G G S Q  
1001 CCAGGGAACTTCAGATCAGCTGGGAGGAGCCAGCTCCAGAAATCAGTGATTTCTGAGGTACGAACTCCGCTATGGCCCCAGAGATCCAAGAACTCCA  
147▶ P G E L Q I S W E E P A P E I S D F L R Y E L R Y G P R D P K N S  
1101 CTGGTCCCACGGTCATACAGCTGATTGCCACAGAACTGTGCTGCCCTGCTCTGAGAGGCCTCACTCAGCCTCTGCTCTGGACCAGTCTCCATGTGTCA  
180▶ T G P T V I Q L I A T E T C C P A L Q R P H S A S A L D Q S P C A Q

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**HindIII (1250)** 1201 GCCCAATGCCCTGGCAAGATGGACAAAGCAGACCTCCCAAGTAGAGAAGCTTACAGCTCTGACAGCAGAGGGTGAAGCTGCCTCATCTCAGGACTC  
213▶ P T M P W Q D G P K Q T S P S R E A S A L T A E G G S C L I S G L

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**FspI (1328)** 1301 CAGCCTGGCAACTCCTACTGGCTGCAGCTGCGCAGCGAACCTGATGGGATCTCCCTCGGTGGCTCCTGGGGATCCTGGTCCCTCCCTGTGACTGTGGACC  
247▶ Q P G N S Y W L Q L R S E P D G I S L G G S W G S W S L P V T V D

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**BamHI (1369)** 1401 TGCTGGAGATGCAGTGGCACTTGGACTGCAATGCTTTACCTTGGACCTGAAGAATGTTACCTGTCAATGGCAGCAACAGGACCATGCTAGCTCCCAAGG  
280▶ L P G D A V A L G L Q C F T L D L K N V T C Q W Q Q Q D H A S S Q G

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**NheI (1486)** 1501 CTTCTTACCACAGCAGGGCACGGTGTGCCCCAGAGACAGGTACCCCATCTGGGAGAAGTCCGAAGAGGAAGAGAAAACAAATCCAGGACTACAGACC  
313▶ F F Y H S R A R C C P R D R Y P I W E N C E E E E K T N P G L Q T

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**XmaI (1674)** 1601 CCACAGTCTCTCGTGCCACTTCAAGTCACGAAATGACAGCATTATTCACATCCTTGTGGAGGTGACCACAGCCCCGGTACTGTTACAGTCACTGG  
347▶ P Q F S R C H F K S R N D S I I H I L V E V T T A P G T V H S Y L

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**BamHI (1712)** 1701 GCTCCCTTTCTGGATCCACCAGGCTGTGCGCTCCCCACCCAAACTTGCACTGGAGGGAGATCTCCAGTGGGCATCTGGAATTGGAGTGGCAGCACCC  
380▶ G S P F W I H Q A V R L P T P N L H W R E I S S G H L E L E W Q H P

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**BglII (1760)** 1801 ATCGTCTGGGACGCCAAGAGACTGTTATCAACTCCGATACACAGGAGAAGGCCATCAGGACTGGAAGGTGCTGGAGCCGCTCTCGGGCCCCGAGGA  
413▶ S S W A A Q E T C Y Q L R Y T G E G H Q D W K V L E P P L G A R G

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**BstXI (1798)** 1901 GGGACCCTGGAGTGCGCCCGGATCTCGCTACCGTTTACAGTGCGCCAGGCTCAACGGCCCCACCTACCAAGGTCCTGGAGCTCGTGGTGGACC  
447▶ G T L E L R P R S R Y R L Q L R A R L N G P T Y Q G P W S S W S D

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**SandI (1900)** 2001 CAACTAGGGTGGAGACGCCACCCAGACCGCTGGATCTCCTTGGTGACCGCTCTGCACTAGTGTGGGCTCAGCGCCGCTCTGGGCTGTGCTGCT  
480▶ P T R V E T A T E T A W I S L V T A L H L V L G L S A V L G L L L L

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**BssHIII (1944)** 2101 GAGGTGGCAGTTTCTGCACACTACAGGAGACTGAGGCATGCCTGTGGCCCTCACTTCCAGACCTGCACCGGGTCTAGGCCAGTACCTTAGGGACACT  
513▶ R W Q F P A H Y R R L R H A L W P S L P D L H R V L G Q Y L R D T  
2201 GCAGCCCTGAGCCACCAAGGCCACAGTCTCAGATACCTGTGAAGAAGTGAACCCAGCCTCCTTAAATCCTCCCCAAGTCTCAGAGGAGGACTCCTT  
547▶ A A L S P P K A T V S D T C E E V E P S L L E I L P K S S E R T P

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**BstAPI (2055)** 2301 TGCCCTGTGTTCTCCAGGCCAGATGGACTACCGAAGATTGCAGCCTTCTGCTGGGGACCATGCCCTGTCTGTGTCGCCACCCATGGCTGAGTC  
580▶ L P L C S S Q A Q M D Y R R L Q P S C L G T M P L S V C P P M A E S

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**BsrBI (2048)**  
**AvrII (2175)**  
**NcoI (2387)**

EcoRI (2494)

2401 AGGGTCTGTGTACCACCCACATTGCCAACCATTCCTACCTACCACTAAGCTATTGGCAGCAGCCTTGAGGACAGGCTCCTCACTCCCAGTTCGAATTC  
613▶ G S C C T T H I A N H S Y L P L S Y W Q Q P •

BstBI (2491)

2501 GCTAGCTCGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGC

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HpaI (2663) MfeI (2674)

2601 TTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAGTTAAACAACAACAATTGCATTTCATTTTATGTTTCAGG

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EcoRI (2759)

2701 TTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAAT

2801 CAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTGCAGCCTCACCTCTTTCA

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SapI (2941) SspI (2998)

2901 TGGAGTTAAGATATAGTGATTTTTCCCAAGTTTGAAGTACTGCTTCATTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCCTTTTTAGTAAAA

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SwaI (3012)

3001 TATTCAGAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTA

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3101 GTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTT

141 • N R T Y K L P I L E

3201 CCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCT

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

BstXI (3302)

3301 GACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCTTGCTCACAGCAGACCCAAATG

97◀ 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

3401 GCAATGGCTTCAGCACAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACAT

63◀ A 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

BbsI (3583)

3501 GGTGCTTGTCTCATAGAGCATGGTGTCTTCTAGTGGCAGCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCT

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 ◀

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AseI (3645)

3601 CCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAA

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3701 ACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTT

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SpeI (3800)

3801 ACTAGTCAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAAC

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SnaBI (3928)

3901 GCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTT

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NdeI (4033)

4001 ACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCGAGTTTACCGTAAATACTCCACCATTGACGTCAA

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4101 TGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGGGGGGTCTGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAA

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PacI (4219) SdaI (4211) BspLU11I (4229)

4201 GTTATGTAACGCCTGCAGGTTAAATAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGG

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4301 CTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGTGGCGAAACCGACAGGACTATAAGATACCAGGCGTTTCCCCCTGGAAGCT

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4401 CCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAG

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ApaLI (4543)

4501 GTATCTCAGTTCCGGTGTAGTTCGTTCCGCTCAAGTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGTGCCTTATCCGGTAACTATCGTCTT

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4601 GAGTCAAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGA

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4701 AGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATC

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4801 CGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCT

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EagI (4979) PacI (4959) SwaI (4968) NotI (4978)

4901 ACGGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTT

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5001 ATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCT

5101 GTCCCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA