



PvuI (7) SgfI (6) MfeI (82)  
 1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
 101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGTCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245) Psp1406I (203) PvuII (239) Bsu36I (291)  
 201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCCGTTGAGTTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)  
 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

BspLU111 (560)  
 AgeI (552) SgrAI (551)  
 501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCCCTACCTGAGATCACCGGTGAACATGTGTCTCAGAAGCTAACCATCTCCTGTTTGCAT  
 601 CGTTTTGCTGGTGTCTCCACTCATGGCCATGTGGAGCTGGAGAAAGCCTTTATGTTGTAGAGGTGGACTGGACTCCCGACTGGCCCTGGAGAAACAGTG  
 13▶ V L L V S P L M A M W E L E K D V Y V V E V D W T P D A P G E T V  
 701 AACCTCACCTGTGACACGCTGAAGAAGATGACATCACCTGGACCTCAGACCAGAGACATGGAGTCATAGGCTCTGAAAAGACCTGACCATCACTGTCA  
 47▶ N L T C D T P E E D D I T W T S D Q R H G V I G S G K T L T I T V

XbaI (807) BspEI (961) BbrPI (972)  
 801 AAGAGTTTCTAGATGCTGGCCAGTACACCTGCCACAAAGGAGCGAGACTCTGAGCCACTCACATCTGCTGCTCCACAAGAAGAAAATGGAATTTGGTC  
 80▶ K E F L D A G Q Y T C H K G G E T L S H S H L L L H K K E N G I W S  
 901 CACTGAAATTTTAAAAATTTCAAAAACAAGACTTTCTGAAGTGTGAAGCACAAATTACTCCGGACGGTTCACGTGCTCATGGCTGGTGCAAAAGAAC  
 113▶ T E I L K N F K N K T F L K C E A P N Y S G R F T C S W L V Q R N

BspLU111 (1057)  
 1001 ATGGACTTGAAGTTCAACATCAAGAGCAGTAGCAGTCCCCCGACTCTCGGGCAGTGACATGTGGAATGGCGTCTGTCTGCAGAGAAGGTCACACTGG  
 147▶ M D L K F N I K S S S S P P D S R A V T C G M A S L S A E K V T L  
 1101 ACCAAAGGGACTATGAGAAGTATTCAAGTGTCTGCCAGGAGGATGTCACCTGCCCAACTGCCGAGGAGACCCTGCCATTGAACTGGCGTTGGAAGCACG  
 180▶ D Q R D Y E K Y S V S C Q E D V T C P T A E E T L P I E L A L E A R  
 1201 GCAGCAGAATAAATATGAGAACTACAGCACCAGCTTCTTCATCAGGGACATCAAACCAGACCCGCCCAAGAACTGCAGATGAAGCCTTTGAAGAAC  
 213▶ Q Q N K Y E N Y S T S F F I R D I I K P D P P K N L Q M K P L K N

PvuII (1314) BstBI (1376) Bsp119I (1376)  
 1301 TCACAGGTGGAGGTGAGCTGGGAGTACCCTGACTCCTGGAGCACTCCCATTCCTACTTCTCCCTCAAGTTCTTTGTTCAATCCAGCGCAAGAAAGAAA  
 247▶ S Q V E V S W E Y P D S W S T P H S Y F S L K F F V R I Q R K K E  
 1401 AGATGAAGGAGACAGAGGAGGGGTGAACCAGAAAGGTGCGTTCTCGTAGAGAAGACATCTACCGAAGTCCAATGCAAAGGCGGGAATGTCTGCGTGCA  
 280▶ K M K E T E E G C N Q K G A F L V E K T S T E V Q C K G G N V C V Q  
 BbsI (1452) PvuI (1561) Acc65I (1581)  
 1501 AGCTCAGGATCGCTATTACAATTCCTCATGCAAGTGGGCATGTGTTCCCTGCAGATGCCGATCGGTTCTGGAGTAGGGGTACCTGGGGTGGGCCTG  
 313▶ A Q D R Y Y N S S C S K W A C V P C R V R S V P G V G V P G V G L  
 NheI (1665) AvrII (1606) SphI (1661) NdeI (1696)  
 1601 GCTGTGCCTAGGAGTAGCAGTCTGACTGGGCTCAGTGCCAGCAGCTCTCTCGGAATCTCTGCATGCTAGCCTGGAACGCACATGCACCAGCGGGACATA  
 347▶ A V P R S S S P D W A Q C Q Q L S R N L C M L A W N A H A P A G H  
 1701 TGAATCTACTAAGAGAAGAAGAGGATGAAGAGACTAAAAATAATGTGCCCGTATCCAGTGTGAAGATGGTTGTGACCCACAAGGACTCAAGGACAACAG  
 380▶ M N L L R E E E D E E T K N N V P R I Q C E D G C D P Q G L K D N S  
 BamHI (1817) NcoI (1901) XmaI (1964)  
 1801 CCAGTTCTGCTTGCAAAGATCCGCAAGTCTGGCTTTTATAAGCACTGCTTACTGACTCTGACATCTTCAAAGGGGAGCCTGCTCTACTCCCTGATAGC  
 413▶ Q F C L Q R I R Q G L A F Y K H L L D S D I F K G E P A L L P D S  
 1901 CCCATGGAGCAACTTACACCTCCCTACTAGGACTCAGCCAACCTCCTCCAGCCAGAGGATCACCCCGGAGACCCCAACAGATGCCAGCCTGAGTTCTA  
 447▶ P M E Q L H T S L L G L S Q L L Q P E D H P R E T Q Q M P S L S S

BstBI (2039) SfiI (2052) Bsp119I (2039) StuI (2051) XmaI (2072)  
 2001 GTCAGCAGTGGCAGCGCCCTTCTCCGTTCCAAGATCCTTCGAAGCCTCCAGGCCTTTTGGCCATAGCTGCCCGGGTCTTTGCCACGAGGAGCAAC  
 480▶ S Q Q W Q R P L L R S K I L R S L Q A F L A I A A R V F A H G A A T  
 NheI (2155) EcoRI (2149)  
 2101 TCTGACTGAGCCCTTAGTGCCAACAGCTTAAGGATGCCAGGTTCCATGAATTCCTAGCTGCCAGACATGATAAGATACATTGATGAGTTTGGCAA  
 513▶ L T E P L V P T A •

HpaI (2293)  
 2201 ACCACAAC TAGAATGCAGTGA AAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAACAAGTTAAACA

MfeI (2304) EcoRI (2389)  
 2301 ACAACAATTGCATTCA TTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTCTAAAA  
 2401 TACAGCATAGCAAACTTAACTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGC

2501 **SapI (2571)**  
ATTAGCTGTTTGACGCTCACCTCTTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGCTAGCTCTTCATTTCTTTATGTTTTAAATGCA

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2601 **SspI (2628)** **Swal (2642)**  
CTGACCTCCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGC

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2701 **EcoO109I (2703)**  
TCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTT

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2801 141 •  
AGTTCCTGGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCACTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGA  
140 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 Y D S

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2901 **SacI (2903)**  
GATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCC  
107 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 D F D

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3001 **StuI (3067)**  
TTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCC  
73 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 I I E G

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3101 **BbsI (3213)**  
CAGTCTTGGTCTGATGGCCGCCCGACATGGTCTTGTGCTCATAGAGCATGGTATCTTCTCAGTGGCAGCTCCACCAGCTCCAGATCCTGCTG  
40 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 D Q Q

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3201 **XmnI (3209)** **AseI (3275)**  
AGAGATGTTGAAGGCTTCATGGTGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAAACAGCGTGGATG  
7 S I N F T K M

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3301 **SacI (3332)**  
CGGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTG

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3401 **SpeI (3430)**  
TTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCT

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3501 **SnaBI (3558)**  
ATCCACGCCATTGATGTAAGTCCGATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCATAGGTCAT

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3601 **NdeI (3663)**  
GTAAGTCCCGTGGAGACTTGAAATCCCGTGAGTCAAACCGCT

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3701 **NdeI (3663)**  
TACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATATTGACGTCAATGGGGGGGTCGTTGG

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3801 **PacI (3849)** **SdaI (3841)** **BspLU11I (3859)**  
GCGGTCAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCCTGCAGGTTAATAAGAAATGAGCAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAA

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3901 **BspLU11I (3859)**  
AAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTAT

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4001 **BspLU11I (3859)**  
AAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAG

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4101 **ApaLI (4173)**  
CGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGTTGAGTGTGCTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTCCAGCCGAC

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4201 **ApaLI (4173)**  
CGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCAAACCGTAAGACAGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGA

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4301 **ApaLI (4173)**  
GGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTAC

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4401 **ApaLI (4173)**  
CTTCGAAAAAGAGTTGGTAGCTTTGATCCGGCAAACAACCCGCTGGTAGCGGTGTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAA

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4501 **PacI (4589)** **Swal (4598)**  
GGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACAT

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4601 **EagI (4609)**  
TTAAATCAGCGCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAA

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4701 **NotI (4608)**  
ACGAAACAAAACAACTAGCAAATAGGCTGTCCCGAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA