



**PvuI (7)**  
**SgfI (6)** MfeI (82) EcoNI (96)  
 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
 101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** **PvuII (239)** **Bsu36I (291)**  
 EcoNI (287)  
 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCTACCTGAGGGCC  
 301 GCCATCCACGCGGTTGAGTGCAGTTCGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

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**KasI (535)** **AgeI (552)** **SphI (560)**  
 501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTCAGCATGCTGAGGACGTTGCTGCGAAGGAGACTTTTTTCTTA  
 601 TCCCACCAATACTACTTTATGGTTCTTGTTTTATCCCTAATCACCTTCTCCGTTTTAAGGATTCATCAAAGCCTGAATTTGTAAGTGCAGACACTTG  
 13> P T K Y Y F M V L V L S L I T F S V L R I H Q K P E F V S V R H L  
 1 M L R T L L R R R L F S Y

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**AseI (730)**  
 701 GAGCTTGCTGGGAGAATCCTAGTAGTGATATTAATTGCACCAAAGTTTTACAGGGTGATGTAATGAAATCCAAAAGGTAAGCTTGAGATCCTAACAG  
 47> E L A G E N P S S D I N C T K V L Q G D V N E I Q K V K L E I L T  
 801 TGAATTTAAAAAGCGCCCTCGGTGGACACCTGACGACTATATAAACATGACCAGTACTGTTCTTTTTCATCAAGAGACGCAATATATTGAGAACC  
 80> V K F K K R P R W T P D D Y I N M T S D C S S F I K R R K Y I V E P  
 901 CCTTAGTAAAGAAGAGGCGGAGTTTCCAATAGCATATTCTATAGTGGTTCATCACAAGATTGAAATGCTTGACAGGCTGCTGAGGGCCATCTATATGCCT  
 113> L S K E E A E F P I A Y S I V V H H K I E M L D R L L R A I Y M P

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**BsaBI (1059)** **BstXI (1097)**  
**PstI (1052)** **MscI (1094)**  
 1001 CAGAATTTCTATTGCATTCATGTGGACACAAAATCCGAGGATTCCTATTAGCTGCAGTGATGGGCATCGCTTCTGTTTTAGTAATGCTTTGTGGCCA  
 147> Q N F Y C I H V D T K S E D S Y L A A V M G I A S C F S N V F V A

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**Ppu10I (1121)** **NsiI (1121)** **ScaI (1193)**  
 1101 GCCGATTGGAGAGTGTGGTTATGCATCGTGGAGCGGGTTCAGGCTGACCTCAACTGCATGAAGATCTCTATGCAATGAGTGCAAACCTGGAAGTACTT  
 180> S R L E S V V Y A S W S R V Q A D L N C M K D L Y A M S A N W K Y L  
 1201 GATAAATCTTTGGTATGGATTTCCCATTAACCAACCTAGAAATGTCAGGAAGCTCAAGTTGTAATGGGAGAAAACCACTGGAACGGAGAGG  
 213> I N L C G M D F P I K T N L E I V R K L K L L M G E N N L E T E R  
 1301 ATGCCATCCATAAAGAAGAAAGGTGGAAGAAGCGGTATGAGGTCGTTAATGGAAGCTGACAAAACACAGGACTGTCAAATGCTTCTCCACTCGAAA  
 247> M P S H K E E R W K K R Y E V V N G K L T N T G T V K M L P P L E  
 1401 CACCTCTCTTTTCTGGCAGTGCCTACTTCTGTGGTCAAGGAGTATGTGGGATGTACTACAGAATGAAAAATCCAAAAGTTGATGGAGTGGGCACA  
 280> T P L F S G S A Y F V V S R E Y V G Y V L Q N E K I Q K L M E W A Q

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**BsaBI (1516)** **XmaI (1557)**  
 1501 AGACACATACAGCCCTGATGAGTATCTCTGGGCCACCATCCAAGGATTCCTGAAGTCCCGGGCTCACTCCCTGCCAGCCATAAGTATGATCTGTCTGAC  
 313> D T Y S P D E Y L W A T I Q R I P E V P G S L P A S H K Y D L S D

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**ScaI (1631)**  
 1601 ATGCAAGCAGTTGCCAGGTTTGTCAAGTGGCAGTACTTTGAGGGTGATGTTTCCAAGGGTCTCCCTACCCGCTGCGATGGAGTCCATGTGCGCTCAG  
 347> M Q A V A R F V K W Q Y F E G D V S K G A P Y P P C D G V H V R S

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**FspI (1736)** **XcmI (1790)**  
 1701 TGTGCATTTTCGGAGCTGGTACTTGAAGTGGTGTGCGCAACACCACTTGTTCGCAATAAGTTTACGCTGGATGTTGACCTCTTTGCCATCCAGTG  
 380> V C I F G A G D L N W M L R K H H L F A N K F D V D V D L F A I Q C

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**MscI (1876)** **NheI (1870)**  
 1801 TTTGGATGAGCATTGAGACACAAAGCTTTGGAGACATTAACCACTGACCATTACGGGCAATTTTATGAGCTAGCTGGCCAGACATGATAAGATACATT  
 413> L D E H L R H K A L E T L K H •

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1901 GATGAGTTTGACAAACCAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCA

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**HpaI (2008)** MfeI (2019)  
 2001 AATAACAAGTTAAACAACA AATTGCATTCAATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGG

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**EcoRI (2104)**  
 2101 TATGGAATCTAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTGAAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGG  
 2201 CTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTCTTTCATTCTT

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**SspI (2343)** **SwaI (2357)**  
 2301 TATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAATATTGAGAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAG

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**EcoO109I (2418)**  
 2401 GCAGAATCCAGATGCTCAAGGCCCTTATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAG  
 2501 CGAGCTTCTAGCTTTAGTTCTGGTACTTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTC  
 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 D

2601 <sup>SacI (2618)</sup> <sup>BstXI (2647)</sup> AGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACA  
 112 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 <sup>StuI (2782)</sup>

2701 ATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAG  
 78 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 A

2801 CAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAG  
 45 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 L

<sup>BspHI (2932)</sup>  
<sup>BbsI (2928)</sup>  
<sup>XmnI (2924)</sup> 2901 CTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTC  
 12 E L D Q Q S I N F T K M <sup>AseI (2990)</sup>

3001 <sup>SacI (3047)</sup> AAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTCTACTAAACGAGCTCTGTTATATAGACCTCCCACCGTACACGCCTACCGCCATTGCGTC

3101 <sup>SpeI (3145)</sup> AATGGGGCGAGTGTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCC

3200 <sup>SnaBI (3273)</sup> CGTGAGTCAAACCGCTATCCAGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAA

3300 <sup>NdeI (3378)</sup> AGTCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTAC

3400 TGCCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAAT

<sup>PstI (3557)</sup>  
<sup>SdaI (3556)</sup> <sup>PacI (3564)</sup> <sup>BspLU11I (3574)</sup> 3500 GGGCGGGGTCGTTGGCGGTGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCC T G 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 G C C A G C A A  
 3598 AAGCCAGGAACCGTAAAGAGCCGCGTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGC  
 3698 GAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCTGCCGCTTACCGGATACCTGTCCGC

<sup>ApaLI (3888)</sup> 3798 CTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCGCTCCAAGCTGGGCTGTGTGCACGAA  
 3898 CCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTA  
 3998 ACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGC  
 4098 TCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAG  
 4198 ATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCA

<sup>EagI (4324)</sup>  
<sup>PacI (4304)</sup> <sup>SwaI (4313)</sup> <sup>NotI (4323)</sup> 4298 TGGCTAGTTAATTAACATTTAAATC AGCGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATAC  
 4398 GCTCTCCATCAAACAAACGAAACAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA