



**PvuI (7)** **SgfI (6)** **MfeI (82)** **EcoNI (96)**  
1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGCGAGAGCGACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA  
101 GAGAAGGTGGCGCGGGTAAACTGGGAAAGTGTGTCGTGACTGGCTCCGCCTTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** **HindIII (245)** **Bsu36I (291)**  
**PvuII (239)** **EcoNI (287)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCCTTCACGCGCCCGCCGCTACCTGAGGCC  
301 GCCATCCACGCGGTTGAGTCGCGTTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCCGCTTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

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**NcoI (560)** **BstEII (555)** **AgeI (552)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTACCATTGGCGGCCAAATCCACTCCAGGCCGAGAGCAGCCG  
1 M A A E I H S R P Q S S R

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**Tth111I (634)**  
601 CCCGGTGTGCTGAGCAAGTACGAGGGGCACGAGCGCGTACCGCCGCGTCTCATCCCAAGGAGGACGGCGTGATCACGGCCAGCGAGGACAGA  
13 P V L L S K I E G H Q D A V T A A L L I P K E D G V I T A S E D R

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**PshAI (724)**  
701 ACCATCCGGGTATGGCTGAAAAGAGACAGTGGTCAACTACTGGCCAGCATTACCACACAATGGCCTCTCCTTGTCTGCTATGGCTTACCATCATGACA  
47 T I R V W L K R D S G Q Y W P S I Y H T M A S P C S A M A Y H H D  
801 GCAGACGGATATTTGGGCCAGGATAATGGAGCTGTAATGGAATTTACGTTTCTGAAGATTTAATAAAAATGAACTTTATCAAGACCTACCCAGCTCA  
80 S R R I F V G Q D N G A V M E F H V S E D F N K M N F I K T Y P A H

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**DraIII (936)** **MscI (932)** **ApaLI (984)** **BsrBI (993)**  
901 TCAGAACCGGGTGTCTGCGATTATCTTCAGCTTGGCCACAGAGTGGGTGATCAGTACCGGCCACGACAAGTGTGTGAGCTGGATGTGCACGGGAGCGGG  
113 Q N R V S A I I F S L A T E W V I S T G H D K C V S W M C T R S G  
1001 AACATGCTCGGGAGGCATCTTCACGCTCTGGCTTCGTGTCTGCAATATGACTTTGACACTCAGTATGCTTTCGTTGGTGATTATTCTGGGAGATCA  
147 N M L G R H F F T S W A S C L Q Y D F D T Q Y A F V G D Y S G Q I

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**SandI (1181)** **EcoO109I (1181)**  
1101 CCCTGCTGAAGCTTGAACAGAACACGTGTTTCAGTCATCACAACCCCTCAAAGGACATGAAGGTAGTGTGCGCTGCCTCTGGTGGGACCCATTACGCGGTT  
180 T L L K L E Q N T C S V I T T L K G H E G S V A C L W D P I Q R L  
1201 ACTCTTCTCAGGAGCATCTGACAACAGCATCATCATGTGGGACATCGGAGGAAGGAAAGGCCGACGCTGTTACTTCAGGGCCATCATGACAAGGTGCAG  
213 L F S G A S D N S I I M W D I G G R K G R T L L L Q G H H D K V Q  
1301 TCGCTGTGCTACCTTCAGCTCACCAGGCAGCTCGTCTCCTGTTCTCGGACGGCGAATTGCAGTGTGGAACATGGATGTTAGCAGAGAAGAGGCTCCTC  
247 S L C Y L Q L T R Q L V S C S S D G G I A V W N M D V S R E E A P  
1401 AGTGGTTGAAAGTATTCTTGTGAGAAATGTGAGCAGCCATTTTCTGGAACATAAAGCAGATGTGGGACACCAAGACGCTGGGGTAAAGCAACATCA  
280 Q W L E S D S C Q K C E Q P F F W N I K Q M W D T K T L G L R Q H H

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**BstAPI (1502)** **Eco47III (1544)**  
1501 CTGCAGAAATGCGGGCAGGCTGTCTGCGGGAAGTGCAGCAGCAAGCGCTCAAGTTACCCAGTCATGGGCTTCGAGTTCCAAGTCCGGGTTTGTGATTCT  
313 C R K C G Q A V C G K C S S K R S S Y P V M G F E F Q V R V C D S

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**BsaBI (1618)** **BspLU11I (1673)** **XcmI (1691)**  
1601 TGTTACGACTCCATCAAAGATGAAGATCGGACTTCTCTAGCGACCTTTCATGAAGGAAAACATAACATTTCCACATGTCCATGGACATTGCCAGGGGAC  
347 C Y D S I K D E D R T S L A T F H E G K H N I S H M S M D I A R G

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**BstEII (1704)** **BglII (1733)** **NheI (1798)**  
1701 TGATGGTGACCTGTGGGACCGCATTGTAAGATCTGGGACATGACACCTGTGGTGGGCTGCAGTCTGGCGACTGGGTTTTCTCCGACTGATCTGC  
380 L M V T C G T D R I V K I W D M T P V V G C S L A T G F S P H •

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**MscI (1804)**  
1801 TAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACACTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATT

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**HpaI (1936)** **MfeI (1947)**  
1901 GCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTAAACAACAACAAATTCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTT

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**EcoRI (2032)**  
2001 AAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCAAAATACAGCATAGCAAACCTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGA  
2101 GGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGACGCTCACCTCTTTCATGGAGTTAAGATATAGTGATTTTCC

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**SapI (2214)** **SspI (2271)** **SwaI (2285)**  
2201 CAAGGTTTGAAGTACTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAAATATTCAGAAAATATTTAAATACATCAT

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**EcoO109I (2346)**  
2301 TGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAAC  
2401 CTTAATAGAAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTACTTGAGGGGGATGAGTTCTCAATGGTGGTTTTGACCAGCTTGC  
141 • N R T Y K L P I L E E I T T K V L K G

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**SacI (2546)**  
2501 CATTATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTC  
121 N M E I L V F C 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

2601 ATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACC  
88 D S Y P H R V A V I T D F D K Q G N S V A S G I A I A E A C V T V  
StuI (2710)

2701 CTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGCTGTATGGCCGCCCGACATGGTGTCTGTTGTCTCATAGAGCATGG  
54 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 H K N D E Y L M T  
BbsI (2856)  
XmnI (2852)

2801 TGATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGC  
21 I K E T A V E V L E L D Q Q S I N F T K M  
AseI (2918) SacI (2975)

2901 CGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCCA  
SpeI (3073)

3001 CCGTACACGCCTACCGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTTGATTTACTAGTCAAAAACAACTCCCATTGACG  
SnaBI (3201)

3101 TCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTA  
NdeI (3306)

3201 ATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTAAGTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGT  
SdaI (3484) PacI (3492)

3301 ACTTGGCATATGATACACTTGATGTAAGTGGGCGGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATG  
BspLU11I (3502)

3401 GGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCCTAAGTTATGTAACGCTGCAGGTTAATTAA  
GAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAA  
AATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCTGTCCGACCC  
TGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCG  
ApaLI (3816)

3501 CTCCAAGCTGGGCTGTGTGACGAAACCCCGTTCAGCCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTA  
TCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTA  
GAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAACAAACCACCGCTGGTAGCGG  
TGGTTTTTTTGTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAA  
PacI (4232) SmaI (4241) NotI (4251)

3601 AACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTT  
TTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGA  
4301 ACATTTCTCTATCGAA  
4401