



**PvuI (7)**  
**SgfI (6)** **MfeI (82)**  
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGTGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** **HindIII (245)** **Bsu36I (291)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCCGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
**NgoMI (441)**  
**NaeI (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

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*NcoI (560)*  
**BstEII (555)**  
**KasI (535)** **AgeI (552)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTACCATGGCGGAAGTGTGTGGACAGGCCCAACCACCTGAC  
1 M A G S A V D S A N H L T

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**XmaI (620)**  
601 CTACTTTTTTGGCAACATCACCCGGGAAGAGGCTGAAGACTACCTGGTCCAGGAGGCATGACCGATGGGCTCTACCTGCTACGCCAGAGCCGAATTAC  
13 Y F F G N I T R E E A E D Y L V Q G G M T D G L Y L L R Q S R N Y  
701 CTGGTGGTTTTGCTTTGCGTGGCTCACAACAGGAAGGCACACCCTACCCATCGAGAGGAACTTAATGGCACCTACCCATCTCCGGGGCAGGG  
47 L G G F A L S V A H N R K A H Y T I E R E L N G T Y A I S G G R

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**XcmI (837)** **XmnI (870)** **XmaI (888)**  
801 CCCATGCCAGCCCAGCAGACCTCTGCCATTACCACTCCAGGAACCTGATGGCCTTATCTGCCTCTTAAGAAGCCCTCAACCGGCCCGGGAGTACA  
80 A H A S P A D L C H Y H S Q E P D G L I C L L K K P F N R P P G V Q  
901 GCCAAGACCGGACCCTTTGAGGACCTGAAGGAACTCATCAGGGAATGTGAAACAGACCTGGAACCTTCAAGGCCAGGCTCTGGAGCAAGCCATC  
113 P K T G P F E D L K E N L I R E Y V K Q T W N L Q G Q A L E Q A I

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*NcoI (1065)*  
1001 ATCAGCCAGAAGCCCAGCTGGAGAAGCTGATCGCCACCACGGCCCATGAGAAGATGCCCTGGTTCATGGCAACATCTCCAGAGATGAATCAGAGCAGA  
147 I S Q K P Q L E K L I A T T A H E K M P W F H G N I S R D E S E Q  
1101 CGTCTCATAGGTTCAAAGACCAATGGAATAATCCTGATCAGGGCCAGAGACAACAGCGCTCCTATGCTGTGCCTGCTGCACGAAGGAAAAGTATT  
180 T V L I G S K T N G K F L I R A R D N S G S Y A L C L L H E G K V L

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**Bsu36I (1243)**  
1201 GCACTACCGCATTGACAGGGACAAGACCGGGAAGCTCTCCATTCCTGAGGGGAAGAAGTTTGACACCCTCTGGCAGCTAGTGGAACTTACTCTTACAAG  
213 H Y R I D R D K T G K L S I P E G K K F D T L W Q L V E H Y S Y K

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**BstXI (1335)** **DraIII (1397)**  
**Asp718I (1326)** **BstEII (1394)**  
**Acc65I (1326)** **Tth111I (1389)**  
1301 CCAGATGGGCTACTAAGAGTCTCACGGTACCATGCCAAAAGATTGGTGACAGATGGGCCACCAGGAAGCCAAATGCCCATCCCGTACTGGTCCAC  
247 P D G L L R V L T V P C Q K I G A Q M G H P G S P N A H P V T W S

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**MscI (1446)**  
1401 CGGGTGAATAATCTCAAGGATCAAATCCTACTCCTTCCCAAAGCCTGGCCACAAAAAGCCTGCCACCCCAAGGGAGCCGTCAGAGAGCACTGTGTC  
280 P G G I I S R I K S Y S F P K P G H K K P A P P Q G S R P E S T V S

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**StuI (1545)** *NcoI (1568)*  
1501 CTTCAACCCTATGAGCCAACGGGAGGGCCCTGGGGCCAGACAGAGGCTTCAGAGAGAAGCCTGCCATGGACACAGAGGTGTACGAGAGCCCTTAT  
313 F N P Y E P T G G G P W G P D R G L Q R E A L P M D T E V Y E S P Y  
1601 GCTGACCTGAAGAGATCCGGCCAAAGAGGTTCTACCTGGACAGGAGCTGCTGACCTGGAGGACAATGAACCTGGGCTCCGGTAACTTCGGACTGTGA  
347 A D P E E I R P K E V Y L D R S L L T L E D N E L G S C N F G T V  
1701 AAAAGGGATACTACCAAATGAAAAAAGTTGTGAAAACCGTGGCTGTGAAAATCCTGAAGAACGAGGCCAACGACCCGGCTTTGAGGACGAGCTGCTGGC  
380 K K G Y Y Q M K K V V K T V A V K I L K N E A N D P A L K D E L L A

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**BsiBI (1848)**  
**BsaBI (1848)**  
**FspI (1841)**  
1801 AGAGGCGAACGTCATGCAGCAGCTGGACAACCCCTACATTGTGCGCATGATCGGAATCTGCGAGGCGGAGTCTGGATGCTGGTGTGATGGAGATGGCGGAG  
413 E A N V M Q Q L D N P Y I V R M I G I C E A E S W M L V M E M A E

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**BsrBI (1906)** *NcoI (1979)*  
1901 CTGGGGCCGCTCAACAAGTACCTGCAGCAGAACAGGCACATTAAGGATAAGAACATCATAGAGCTGGTTCACCAGGTTTCCATGGGGATGAAGTATTTGG  
447 L G P L N K Y L Q Q N R H I K D K N I I E L V H Q V S M G M K Y L

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**BglIII (2022)**  
2001 AAGAGAGCAACTTTGTGCACAGAGATCTGGCTGCGCGGAACGTGCTTCTGGTACACAGCACTATGCCAAGATCAGCGATTTCCGCTTTTCAAAGCCCT  
480 E E S N F V H R D L A A R N V L L V T Q H Y A K I S D F G L S K A L

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**Ppu10I (2169)**  
**NsiI (2169)**  
2101 GCGTGTGATGAAAACACTACTACAAGGCCAGACCCACGGGAAGTGGCCGTGAAGTGGTACGCCCCGAATGCATCAACTACTACAAGTTCTCCAGTAAG  
513 R A D E N Y Y K A Q T H G K W P V K W Y A P E C I N Y Y K F S S K  
2201 AGTGACGCTGGAGCTTCGGAGTCTGATGTGGGAAGCCTTCTCTATGGGCAGAAGCCCTACAGAGGATGAAAGGGAGCGAAGTGACGCCATGCTGG  
547 S D V W S F G V L M W E A F S Y G Q K P Y R G M K G S E V T A M L

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**BsrBI (2308)** **SdaI (2323)**  
2301 AGAAAGGAGAGCGGATGGGGTGCCTGCAGGATGCCCGAGAGAGATGTACGACCTGATGAACCTGTGCTGGACTTACGATGTGGAGAACAGGCCAGGATT  
580 E K G E R M G C P A G C P R E M Y D L M N L C W T Y D V E N R P G F

2401 CACAGCTGTGGAAGTGGAGCTTCGCAATTACTACTACGACGTGGTAACTAACAGCTCCGGCGCTGTCCGTGCACACCACGGATTCCCAAGCTAGCTGG  
 613 ▶ T A V E L R L R N Y Y Y D V V N • MscI (2497)  
 2501 CCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTAT  


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 2601 TTGTAACCATTATAAGCTGCAATAACAAGTTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAA  
HpaI (2629) MfeI (2640)  


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 2701 GTAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGA  
EcoRI (2725)  
 2801 ATAAGGCATAGGCATCAGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAGATATAGTGTATTTTCCCAAGGTT  


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 2901 TGAAGTCTCTTCTTTTCTTTATGTTTAAATGCACTGACCTCCACATTCCCTTTTGTAGAAAATATTCAGAAATAATTTAAATACATCATTGCAATG  
SspI (2964) SwaI (2978)  
 3001 AAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAAT  


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 3101 AGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCCTCAATGGTGGTTTTGACCAGCTTGCCATTCAT  
141 ◀ • N R T Y K L P I L E E I T T K V L K G N M  
SacI (3239) BstXI (3268)  
 3201 CTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAG  
 119 ◀ 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 D S  
 3301 TAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAA  
 85 ◀ 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 R G I  
StuI (3403)  
Eco147I (3403)  
 3401 TGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTGTCTCATAGAGCATGGTGATCTT  
 52 ◀ 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 I K  
PacI (3553)  
 3501 CTCAGTGGCGACCTCCACAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATA  
 19 ◀ E T A V E V L E L D Q Q S I N F T K M ◀  
VspI (3611)  
AseI (3611)  
SacI (3668)  
 3601 CTATGCCGATGATTAATTGTCAAACACAGCGTGATGGCGTCTCCAGCTTATCTGACGGTTACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACA  


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 3701 CGCTACCGCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATG  
SpeI (3766)  


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 3800 GGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGT  
SnaBI (3894)  
Eco105I (3894)  
 3900 AGATGACTGCCAAGTAGAAAGTCCATAAGGTCATGTAAGTGGGATAATGCCAGGCGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGG  


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 4000 CATATGATACACTTGATGTAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGCGTTACTATGGGAACA  
NdeI (3999)  


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 4100 TACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCCTG C A G G T T A A T T A A G A A C  
SdaI (4177) PacI (4185) BspLU11I  
 4198 ATGTGAGCAAAAGGCCAGCAAAAGGCCAGAAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATC  


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 4298 GACGCTCAAGTCAGAGGTGGCGAAACCCGACAGACTATAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCGTCTCTGTCCGACCTGCC  


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 4398 GCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCC  


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 4498 AAGCTGGGCTGTGTGCACGAACCCCGTTGAGCCGACCGCTGCGCCTTATCCGTAACATATCGTCTTGAGTCCAACCCGGTAAAGACACGACTTATCGC  


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 4598 CACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAG  


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 4698 AACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCCGCTGGTAGCGGTGGT  


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 4798 TTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTGCTGACGCTCAGTGAACGAAAAC  


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EagI (4945)  
PacI (4925) SwaI (4934) NotI (4944)  
 4898 CACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGGTTTTTTG  


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 4998 TGTGAATCGTAACATAACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGAAGTGCAGGTGCCAGAACAT  
 5098 TTCTCTATCGAA