



125

**PvuI (7)**  
**SgfI (6)**
**MfeI (82)**

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
 101 GAGAAGTGGCGGGGTAACGGAAAGTGTGTCGTGTAAGTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)**
**HindIII (245)**
**Bsu36I (291)**

201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTACCGCCGCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCCGGTTGAGTGCCTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMI (441)**  
**NaeI (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

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**KasI (535)**
**AgeI (552)**
**SphI (560)**
**KasI (591)**

501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTGAGTATGAGTCCCTGGAAAATCCTTACGGTGGCGCCTCT  
 601 ATTTCTGCTCCTGTCTCTTCAGTCTCGCCTCTCCAGCCAACGATGACCAGTCCAGGCCAGCCTCTCGAATGGGCACACCTGTGTAGGGTGTGTGCTG  
 13> F L L L S L Q S S A S P A N D D Q S R P S L S N G H T C V G C V L

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**StuI (749)**  
**Eco147I (749)**

701 GTGGTGTCTGTAATAGAACAGCTTGTCTCAAGTTACAACCTCGACGGTCCAGGCTCGATGGAGAGACTGTGCAGTACCTGCCTGAAAACTGTTCTTGA  
 47> V V S V I E Q L A Q V H N S T V Q A S M E R L C S Y L P E K L F L  
 801 AAACCACCTGCTATTTAGTCATTGACAAGTTGGATCAGACATCATAAACTGCTTAGCGCAGATATGAATGCTGATGGTATGTCACACTCTGGAGTT  
 80> K T T C Y L V I D K F G S D I I K L L S A D M N A D V V C H T L E F  
 901 TTGTAACAGAACACTGGCAACATTGTGTCATCTCTACCCTTCCCAAGGAGACATGAAATTTACACTACAGAAGGCAAGACAAATTTGCAAGAAG  
 113> C K Q N T G Q P L C H L Y P L P K E T W K F T L Q K A R Q I V K K

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**XbaI (1018)**
**BglII (1061)**

1001 TCCCCGATTCTGAAATATTCTAGAAGTGGTCTGACATTTGTTCACTCCCGTTTTGGCCAAGATCTGCCAGAAAATTAATAGCTATGGAACAGTCTG  
 147> S P I L K Y S R S G S D I C S L P V L A K I C Q K I K L A M E Q S  
 1101 TGCCATTCAAAGATGTGGATTGAGACAAATACAGCGTTTTCCCAACTGCGGGGCTATCACTGGCGGGGAGAGACTGTAATGACAGCGACGAGTCACT  
 180> V P F K D V D S D K Y S V F P T L R G Y H W R G R D C N D S D E S V

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**BsiBI (1228)**
**NdeI (1289)**

1201 GTACCCAGGTAGAAGGCCGAACAACTGGGATGTCCATCAGGATCAAACCTGTAATGGCATTGGGGTGTGATCCAAAAGATGGAGTTCATATGAGAAG  
 213> Y P G R R P N N W D V H Q D S N C N G I W G V D P K D G V P Y E K

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**PvuII (1349)**

1301 AAATTCTGTGAAGTTACAGCCAGGGGAATCATTGCTGGGAGACTCAGCTGGGGCTCATTTTCACATCTCTCCTGAATGGATCACAGCGTCGCAGA  
 247> K F C E G S Q P R G I I L L G D S A G A H F H I S P E W I T A S Q  
 1401 TGTCTTTGAACTTTTCATCAATCTACCAACAGCCCTTACCAACGAGCTTGTGCTGGCCCAACTCTCTGGTGTACAGGATTTCTGGACTCCACTGTTGG  
 280> M S L N S F I N L P T A L T N E L D W P Q L S G A T G F L D S T V G  
 1501 AATTAAGAAAAATCTATTTACCTTCGTTATGAAAAAGAAACACTGTAATCACAGGACTACCAGAATATTTCAAGAAATGGTGCATCTTCCCGAAAC  
 313> I K E K S I Y L R L W K R N H C N H R D Y Q N I S R N G A S S R N

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**XbaI (1624)**
**HindIII (1617)**
**PstI (1686)**

1601 CTGAAGAAATTTATAGAAGCTTGTCTAGAAACAAGGTGTTGGACTATCCCGCCATCGTTATATATGCCATGATTGGAATGATGCTGCAGTGGGAAGA  
 347> L K K F I E S L S R N K V L D Y P A I V I Y A M I G N D V C S G K

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**Tth111I (1702)**
**XcmI (1776)**

1701 GTGACCCAGTCCCAGCCATGACCACTCCTGAGAACTCTACTCCAACGTATGACAGACTCTGAAGCATCTAAATTTCCACCTGCCAATGGCAGCCATGT  
 380> S D P V P A M T T P E K L Y S N V M Q T L K H L N S H L P N G S H V

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**EcoRV (1853)**  
**Eco32I (1853)**
**FspI (1893)**

1801 TATTTTGTATGGCTTACCAGATGGAACCTTTCTCTGGGATAATTTGCACAACAGATATCATCTCTCGGCCAGCTAAATAAGACATGACCTATGCGCAG  
 413> I L Y G L P D G T F L W D N L H N R Y H P L G Q L N K D M T Y A Q  
 1901 TTGACTCCTTCTGAAGTGCCTCCAGGTCAGCCCTGCCAGGCTGGATGTCTTCCAACAAGACGTTGCGGACTCTCACTTCAGAGAGAGCAGAGCAAC  
 447> L Y S F L N C L Q V S P C H G W M S S N K T L R T L T S E R A E Q  
 2001 TCTCCAACACTGAAAAAATGACGCCAGTGAAGAAATTTACAACTTCAATCTTTTCTACATGGATTTTGCCTTCCATGAAATCATAACAGGAGTGGCA  
 480> L S N T L K K I A A S E K F T N F N L F Y M D F A F H E I I Q E W Q  
 2101 GAAGAGAGCGGACAGCCCTGGCAGCTCATCGACCCGTGGATGGATTCCACCCCAACGAGGTGGCTTTGCTGTTGTTGGCGGATCATTTCTGAAAAAAG  
 513> K R G G Q P W Q L I E P V D G F H P N E V A L L L L A D H F W K K  
 2201 GTGCAGCTCAGTGGCCCCAAATCCTGGGAAAGGAAATCCGTTCAACCCAGATTAACAGAGGTGTTTGGAGACCAAGCGGGCACTGAGCCTCTCAGG  
 547> V Q L Q W P Q I L G K E N P F N P Q I K Q V F G D Q G G H •

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**SphI (2301)**
**XcmI (2351)**
**NheI (2366)**

2301 AGCATGCACCCCTGGGAGCACAGGGAGGCAGAGGCTTGGGTAACCTATTCCACAAACCTATGGGCTAGCTGGCCAGACATGATAAGATACATTGATG  
 2401 AGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAA

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**HpaI (2504)**
**MfeI (2515)**

2501 ACAAGTTAAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATG

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**EcoRI (2600)**

2601 GAATTCATAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGT

2701 TGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCAAGTTTGAAGTACTAGCTCTTCATTTCTTTATG

2801 TTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAG

2901 AATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAG

3001 CTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGA  
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 P

3101 GCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGG  
110 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 I T

3201 TGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGA  
77 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 S

3301 GATGATCTCCCCAGTCTTGGTCCGTGATGGCCGCCCCGACATGGTGCTTGTCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCAGCTCC  
44 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 E

3401 AGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAAA  
10 L D Q Q S I N F T K M

3501 CAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAAT

3600 GGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGTGGAGACTTGAAATCCCCGT

3699 GAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGGAAAGT

3799 CCCATAAGGTCATGTAAGTGGCATAATGCCAGCGGGCCATTTACCGTATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTAAGTGC

3899 CAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATATTGACGTCAATGGG

3999 CGGGGTCGTTGGGCGGTGAGCCAGCGGGCCATTTACCGTAAGTTATGTAACGCTG 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 C C A G A A A A G  
4097 GCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAAAAATCGACGCTCAAGTCAGAGGTGGCGAA  
4197 ACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTGTCGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTT

4297 TCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTGCTCCAAGCTGGGCTGTGTGCACGAACCC  
4397 CCCGTTACGCCCACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA  
4497 GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGCTACACTAGAAGAAGTATTTGGTATCTGCGCTCT  
4597 GCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGAAGCAGCAGATT  
4697 ACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGG

4797 CTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGC  
4896 TCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA

Swal (2853)  
EcoO109I (2914)  
SacI (3114)  
StuI (3278)  
Eco147I (3278)  
BspHI (3428)  
VspI (3486)  
AseI (3486)  
SacI (3543)  
SpeI (3641)  
SnaBI (3769)  
Eco105I (3769)  
NdeI (3874)  
PstI (4053)  
SdaI (4052) Pacl (4060) BspLU11I (4070)  
EagI (4820)  
PacI (4800) Swal (4809) NotI (4819)