



**PvuI (7)**  
**SgfI (6)** **EcoNI (96)**  
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAAGTGGCGCGGGTAAACTGGGAAAGTATGTCGTGACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** **HindIII (245)** **EcoNI (287)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACGCGCCCGCCGCCCTACCTGAGGCC  
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

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**AgeI (552)** **BspLU11I (560)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCAACATGTCCCATCAACCTCTGAGCTGCCTGACTGAGAAGGG  
1 M S H Q P L S C L T E K G  
601 GGACAGCCCTTGTGAGACCCAGGAAATGGACCTCCAATATGGTTACACCCAGCCTGGACACATTACCCCTGAGGAGCTGCTGCAGCAAATGAAGGAA  
13 D S P C E T P G N G P S N M V H P S L D T F T P E E L L Q Q M K E  
701 CTCCTGGTTGAGAACCACCAGCTGAAAGAAGCCATGAAGCTAATAATCAAGCTATGAAAGGGCGATTTGAGGAGCTGTCGCGCTGGACAGAGAAGCAGA  
47 L L V E N H Q L K E A M K L N N Q A M K G R F E E L S A W T E K Q  
**BspHI (864)**  
801 AGGAAGAGCGCCTGTTGTTTGTGATGCAAAGCAAAGAGGTTAAGGAGCGCCTTAAGGCCCTGACTCATGAAAATGAGAGGCTGAAGGAAGAGCTTGAAAA  
80 K E E R L L F E M Q S K E V K E R L K A L T H E N E R L K E E L G K  
**BstXI (956)**  
901 ATTCAAAGAGAAATCAGAAAAGCCATTGGAAGACCTCACAGGTGGCTACAGGTATCCAGAGCCTTGGAGGAGGAAGTGGAGAAGCTGAAGACCCAGGTG  
113 F K E K S E K P L E D L T G G Y R Y P R A L E E E V E K L K T Q V  
1001 GAGCAGGAAGTGGAGCATCTGAAGATCCAGGTGATGCGCCTTCGGGCTGAAAAGGCAGACCTGCTGGGCATCGTCTCAGAAGTGCAGCTCAAACCTCAACT  
147 E Q E V E H L K I Q V M R L R A E K A D L L G I V S E L Q L K L N  
1101 CCGCGGCTCCTCGGAAGACTCCTTCGTTGAGATCAGGATGACCGAAGGAGAGACTGAAGGGGCAATGAAGGAGATGAAGAAGTGCCTACACCCACAAG  
180 S G G S S E D S F V E I R M T E G E T E G A M K E M K N C P T P T R

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**BsrGI (1225)**  
1201 AACAGACCCCATCAGCTTGTGCAACTGTACAGAGGATGCCAGGAGTTGTGCGGAGTTTGAAGAAGTACTGTGAGCCAGCTTCTGCTTTGCCTAAGGGAA  
213 T D P I S L S N C T E D A R S C A E F E E L T V S Q L L L C L R E  
**MscI (1380)**  
1301 GGAAACAAAAGGTGGAGAGACTTGAAGTCGCCTCAGAGAAGCCAAAGAAAGAAATTTAGATTTTAAAAGAAAAGCAAATGGCCATTCTTCTACTGAGA  
247 G N Q K V E R L E V A L R E A K E R I S D F E K K A N G H S S T E  
**XcmI (1443)**  
1401 AGCAGACAGCGAGGAGAGCAGACAGAGAGAAGGAGGACAAAGGCAAGAGAGTGTGGAAGCGAAGTGGAAACACTGAGCATTCAAGTGCCTCTCTGTT  
280 K Q T A R R A D R E K E D K G Q E S V G S E V E T L S I Q V T S L F  
1501 TAAGGAGCTTCAAGAGGCACACAAAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAGTCAAG  
313 K E L Q E A H T K L S E A E L M K K R L Q E K C Q A L E R K N S A  
**SphI (1670)**  
1601 ACACCATCAGAGCTGAATGAAAAGCAAGAGCTCGTTTACAGTAACAAGAAGTTAGAGTGCAGGTGGAGAGCATGCGCTCCGAAATCAAGATGGAGCAGG  
347 T P S E L N E K Q E L V Y S N K K L E L Q V E S M R S E I K M E Q  
1701 CCAAGACAGAGGAGGAGAAGTCCAGGTTAGCCACTCTGCAGGCAACTCACAACAAGCTCCTTCAAGAACATAATAAGGCACTGAAAACAATTGAAGAAGT  
380 A K T E E E K S R L A T L Q A T H N K L L Q E H N K A L K T I E E L  
1801 AACCAAGCAACAGGCAGAAAAGTGGACAAGATGTTGCTGCAGGAGCTCAGCGAGAAGCTGGAGCTGGCAGAGCAGGCTCTGGCATCAAACAGCTCCAG  
413 T K Q Q A E K V D K M L L Q E L S E K L E L A E Q A L A S K Q L Q

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**NcoI (1949)**  
1901 ATGGATGAGATGAAGCAGACGCTCGCTAAGCAGGAGGAAGACCTGGAGACCATGGCCGCTCCTCAGGGCTCAGATGGAGGTGACTGCTCAGATTTTCAGC  
447 M D E M K Q T L A K Q E E D L E T M A V L R A Q M E V Y C S D F H  
**BspHI (2025)** **NruI (2057)**  
2001 CTGAGAGAGCAGCAAGAGAGAAGATTATGAAGAAAAGGAGCAGCTGGCCTTGACGCTCGCGATTTTGTGAAAGAGAACAATGACATTGAAGAGGGAGG  
480 A E R A A R E K I H E E K E Q L A L Q L A I L L K E N N D I E E G G  
2101 CAGTAGACAGTCCCTGATGGAATGCGAGTGGCGACACGGGCAAGAACCAGTACTCTGACCAGCAGACTTACCTGTTTCAAAGAGGAGCCGAGGACAGG  
513 S R Q S L M E M Q C R H G A R T S D S D Q Q T Y L F Q R G A E D R  
2201 AGCTGGCAGCACGGGCGAGCACTCTCGCAGTATTCGATTACTCTGCCCCAAGTGGGGGAGGTCCTGCCGACATCGACACGCTTACAGTCCATGTGA  
547 S W Q H G Q Q P R S I P I H S C P K C G E V L P D I D T L Q I H V  
**MscI (2331)**  
**NheI (2325)**  
2301 TGGACTGCATCATTTGAGTGTCTCGCTAGTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAAAAAATGC  
580 M D C I I •

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**HpaI (2463)**  
2401 TTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCAATTTATGTTTCAGG

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**EcoRI (2559)**  
2501 TTCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACTCCAAT

2601 CAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTCATTAGCTGTTGCAGCCTCACCTTCTTTCA

SspI (2798)

2701 TGGAGTTAAGATATAGTGATTTTTCCAAGGTTGAACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTAGTAAAA

SwaI (2812)

2801 TATTCAGAAATAATTTAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTA

2901 GTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTT

141 • N R T Y K L P I L E

3001 CCTCAATGGTGGTTTTGACCAGCTTGCCATTTCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCT

130 E I T T K V L K G N M E I L V F C D P A Y D S I L E R C M G C P S

BstXI (3102)

3101 GACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATG

97 V V R I S R D V E D S Y P H R V A V I T D F D K Q G N S V A S G I

StuI (3237)

3201 GCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGTAGGCCGCCCGACAT

63 A I A E A C V T V 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

XmnI (3379)

3301 GGTGCTTGTGCTCATAGAGCATGGTATCTTCTCAGTGGCAGCTCCACCAGTCCAGATCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCT

30 H K N D E Y L M T I K E T A V E V L E L D Q Q S I N F T K M

AseI (3445)

3401 CCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAA

3501 ACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAAGTCCCGTTGATTT

SpeI (3600)

3601 ACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACC

SnaBI (3728)

3701 GCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTT

NdeI (3833)

3801 ACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAA

3901 TGGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAA

PacI (4019)

SdaI (4011) BspLU11I (4029)

4001 GTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG

4101 CTCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCT

4201 CCCTCGTGCCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAG

ApaLI (4343)

4301 GTATCTCAGTTCCGGTGTAGGTGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTGAGCCGACCGTGGCGCTTATCCGGTAACTATCGTCTT

4401 GAGTCAAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGTTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGA

4501 AGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATC

4601 CGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCT

EagI (4779)

PacI (4759) SwaI (4768) NotI (4778)

4701 ACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTT

4801 ATTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCT

4901 GTCCCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA