



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

1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGCGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

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101 GAGAAGGTGGCGGGGTAAACTGGGAAAGTATGTCTGTACTGGTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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

201 GTGAACGTTCTTTTTTCGCAACGGGTTTTCGCCGACAGTGAAGCTTCGAGGGGCTCGCATCTCTCCTTACGCGCCCGCCGCCCTACCTGAGGGCC

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301 GCCATCCACGCGGTTGAGTGCCTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCGCCGCTTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

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**KasI (535)**
**BstEII (555)**
**AgeI (552)**
**NcoI (560)**

501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTACCATGGCCCCGTGGTGCAGCTCTGCTCCTTCTTTTCAC

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**SacII (638)**
**EagI (651)**
**NgoMIV (696)**

601 TGTC AACGCTGTCTCAACGGCTCGCAGCTGGCAGTGGCCGCGGGCGGCTCCGGCCGCGGAGGGGCGGGACACCTGTGGCTGGAGGGGAGTGGGGCCG

13▶ V N A C L N G S Q L A V A A G G S G R A R G A D T C G W R G V G P

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**SphI (777)**

701 GCCAGCAGGAACAGCGGACTGCACAACATCACCTTCAGATACGACAACGTACCACCTACTTGAATCCCGGGGGAAGCATGCGATTGCTGATGCTCAGA

47▶ A S R N S G L H N I T F R Y D N C T T Y L N P G G K H A I A D A Q

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**Bsp120I (863)**
**EcoRI (877)**

801 ACATCACCATCAGCCAGTACGCTTGCCACGACCAGGTGGCAGTACCATTCTTTGGTCCCCAGGGCCCTTGGCATTGAATCCTAAAAGGATCCGAGT

80▶ N I T I S Q Y A C H D Q V A V T I L W S P G A L G I E F L K G F R V

901 CATCTGGAGGAGCTGAAGTCGGAGGGCAGACAGTGCACACAGCTGATTCTAAAGACCCAAACAGCTCAACAGCAGCTTCAGAAGGACTGGAATGGAA

113▶ I L E E L K S E G R Q C Q Q L I L K D P K Q L N S S F R R T G M E

1001 TCTCAGCCTTTCGTAATATGAAATTTGAGACGGATTACTTTGTAAGATGTCCCTTTCCCTTCCATTAAAAATGAAAGCAATTACCATCCCTTCTTCT

147▶ S Q P F L N M K F E T D Y F V K I V P F P S I K N E S N Y H P P F

1101 TCAGAACACGGGCTGTGACCTGTTGTTACAACCTGACAACCTGGCCTGTAAGCCTTTCTGAAAGCCTCGAAACCTGAATATCAGCCAGCATGGTTCTGA

180▶ F R T R A C D L L L Q P D N L A C K P F W K P R N L N I S Q H G S D

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**BbrPI (1204)**

1201 CATGCACGTGCTTCGACCATGCCCCGAGAACTTCGGCTTCCGTGGCTTCCATGTTCTCTATAAGCTCAAGCACGAAGGCCCTTCAGGCGGAGGACT

213▶ M H V S F D H A P Q N F G F R G F H V L Y K L K H E G P F R R R T

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**Psp1406I (1345)**

1301 TGCAGGCAGGACCAGAATACAGAGACAACCAGTGCCTCCTCCAAAAGCTTTCTCCAGGGGACTATATCATTGAGCTGGTGGATGACAGCAACACCACCA

247▶ C R Q D Q N T E T T S C L L Q N V S P G D Y I I E L V D D S N T T

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**XcmI (1451)**

1401 GAAAAGCTGCTCAGTATGTGGTGAAGTCAAGTGCAGTCTCCCTGGGCTGGACCAACAGAGCTGTGGCCATCACTGTGCCTCTGGTTGTCATATCTGCGTT

280▶ R K A A Q Y V V K S V Q S P W A G P I R A V A I T V P L V V I S A F

1501 CGAACCCCTGTTCACTGTGATGTGCAGAAAAGCAACAAGAAAATATATATTACATTTAGATGAAGAAAGCCCGGAGTCGTCCACATACGTCGCGGCT

313▶ A T L F T V M C R K K Q Q E N I Y S H L D E E S P E S S T Y A A A

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**BbsI (1633)**

1601 CTCCCAGAGACAGGCTCCGGCCTCAGCCCAAGGCTTCTCTGCTACTCCAATAAGATGGCCAGAATCACATGAACGTGGTCCAGTGTTCGCTATT

347▶ L P R D R L R P Q P K V F L C Y S N K D G Q N H M N V V Q C F A Y

1701 TCCTGCAAGATTTCTGTGGCTGTGAGGTGGCTCTGGACTTGTGGGAAGATTTACGCTCTGCAGAGAGGGGACAGAGAAATGGCCATTCAGAAGATCCA

380▶ F L Q D F C G C E V A L D L W E D F S L C R E G Q R E W A I Q K I H

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**ScaI (1841)**
**SacII (1884)**

1801 CGAGTCCCAGTTCATCATTGTGCTGTGCTCCAAAGGCATGAAGTACTTTGTAGATAAGAAGAAGTTCAGACACAAAGGAGGCAGCCGCGGCGAGGCGCAA

413▶ E S Q F I I V V C S K G M K Y F V D K K N F R H K G G S R G E A Q

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**FspI (1976)**

1901 GGCAGTTCCTCCTGGTGGCGTGGCAGCATTGCTGAGAAGCTCCGTGAGGCAAGCAGAGCTCATCTGCCGACTGCGCAAGTTCATGCCGTCTACT

447▶ G E F F L V A V A A I A E K L R Q A K Q S S S A A L R K F I A V Y

2001 TCGATTATTCCTGTGAAGGGGATGTACCTGCAGCCTGGACCTGAGCACCAAGTACAAGCTCATGGACCCTTCTGAGCTCTGTGCCATCTGCACTC

480▶ F D Y S C E G D V P C S L D L S T K Y K L M D H L P E L C A H L H S

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**BspEI (2156)**
**BsrBI (2172)**

2101 AGGAGAGCAGGAGGTGCTGGGTGAGCAGCCAGGACAGCAGCAGAAGGAACTACTTCCGGAGCAAATCGGGCCGCTCCCTGTATGTTGCCATTTGCAAC

513▶ G E Q E V L G Q H P G H S S R R N Y F R S K S G R S L Y V A I C N

2201 ATGCACAGTTTATTGATGAGGAGCCTGACTGGTTTGAAGCAGTTTATACCTTCCAACATCCCCCTGTGCGTACCAGGAGCCAGTCTGGAGAAT

547▶ M H Q F I D E E P D W F E K Q F I P F Q H P P V R Y Q E P V L E K

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**PshAI (2353)**

2301 TTGACTCAGGCTTGGTTTTAAATGATGTCATAAGCAAACAGGCCAGAGAGTGAAGTCTGTGCGAAAAGTCGAGGCTTGTGACTTGGGGCCGCTGGGCC

580▶ F D S G L V L N D V I S K P G P E S D F C R K V E A C V L G A A G P

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**StuI (2436)**

2401 AGCCGACTCTTATTCATACCTGGAGAGTCAAGTGTAGGCTGGACCAAGACACTGAGGCCAGCCCTCCTGTGATAGTGCCTTGCCTTGCAGCCCCTG

613▶ A D S Y S Y L E S Q H V G L D Q D T E A Q P S C D S A P A L Q P L

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**DraIII (2503)**

2501 TTACACGCAAGTGAAGCTGGCAGTCCCTCAGAGATGCCACGGGACTCAGGCATATATGATTCTTCTGTACCCTCATCAGAGCTCTCTGCTCTGATGG

647▶ L H A V K A G S P S E M P R D S G I Y D S S V P S S E L S L P L M

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**AvrII (2664)**

2601 AGGGACTCTCCCGGATCAGATAGAAAACATCTTCTGACCGAGAGTGTATCTTCTCCTCTGCGCTAGGTGAGGAGGACCCCTACCTCCCTTCCAA

680▶ E G L S P D Q I E T S S L T E S V S S S S G L G E E D P P T L P S K

2701 GCTCTTTGCTCTGGGGTGTCCAGAGAACATGGTTGCCACAGCCACACTGACGAACTGCAAGCGCTTGCTCCTTTGTAAGGACTCGGAAGAGTCTAAGCA  
713▶ L F A S G V S R E H G C H S H T D E L Q A L A P L •  
NheI (2816)

2801 TCGCCACTTAGCTGCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGT

2901 GAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACAAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGG  
HpaI (2954) MfeI (2965)

3001 AAGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCT  
EcoRI (3050)

3101 ACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTTGGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTA

3201 AGATATAGTGTATTTTCCAAGGTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCCACATTCCCTTTTAGTAAATATTTCAGAA  
SspI (3289)

3301 ATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGA  
SwaI (3303)

3401 CTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGG  
141▶ • N R T Y K L P I L E E I T  
BstXI (3593)

3501 TGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGTGACCCACCT  
127▶ 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 V V R

3601 GATGGATCTGCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCT  
94▶ 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 A I A

3701 TCAGCACAGACAGTGACCCTGCCAATGTAGGCCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGT  
60▶ 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 H K N  
StuI (3728)

3801 TGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCCTATAGTG  
27▶ 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  
BspHI (3878)  
BbsI (3874)

3901 AGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCT  
AseI (3936)

4001 GCTTATATAGACCTCCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCCCTTGATTTACTAGTCAA  
SpeI (4091)

4101 AACAAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCA

4201 TGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGCATAATGCCAGGGGGCCATTTACCGTCATT  
SnaBI (4219)

4301 GACGTC AATAGGGGGCGTACTTGGCATATGATACACTTGTACTGCAAGTGGCAGTTTACCGTAAATACTCCACCCATTGACGTC AATGGAAAGTC  
NdeI (4324)

4401 CCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTC AATGGGCGGGGTCTGTTGGCGGTG CAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAA

4501 CGCCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGAAAGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCC  
PacI (4510)  
SdaI (4502)  
BspLU11I (4520)

4601 CCTGACGAGCATC AAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCTTGGAAGCTCCCTCGTGC

4701 GCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAG

4801 TTCGGGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAAC  
ApaLI (4834)

4901 CCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGC

5001 CTAACACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAGCTCTTGATCCGGCAAACA

5101 AACCAACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCT  
EagI (5270)

5201 GACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAAATATCTTTATTTTCATT  
PacI (5250) SwaI (5259) NotI (5269)

5301 ACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGT

5401 GCAAGTGACGGTGCCAGAACATTTCTCTATCGAA