



**PvuI (7)**  
**SgfI (6)** **EcoNI (96)**  
1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGCAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **PvuII (239)** **EcoNI (287)**  
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCCTTACGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
401 GGGCCTTTGTCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTGTTTCGTTT

**KasI (535)** **AgeI (552)** **BspHI (568)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTAGGAGGGCCATCATGAAAGGGTTCCTCTTATCTAATGTAC  
1▶ M K G C S S Y L M Y

**PshAI (610)** **PstI (680)**  
601 TCCTTTGGGGGACTTTTGTCCCTATGGATTCTTCTGGTGTCTCCACAAACCAATGCACTGTGAGATACAACGTAGTACTGCAGCCATTTGAAGCTAA  
11▶ S F G G L L S L W I L L V S S T N Q C T V R Y N V A D C S H L K L  
701 CACACATACTGATGATCTTCCCTCTAACATAACAGTGTGAATCTTACTCACAACCAACTCAGAAGATTACCACCTACCAACTTTACAAGATACAGCCA  
44▶ T H I P D D L P S N I T V L N L T H N Q L R R L P P T N F T R Y S Q

**XcmI (829)**  
801 ACTTGCTATCTTGGATGCAAGATTTAACTCCATTTCAAAAAGTGGGCCAGAAGTGTGCCAAAATACTCCCTTTGTTGAAAGTATTGAACCTGCAACATAAT  
77▶ L A I L D A G F N S I S K L E P E L C Q I L P L L K V L N L Q H N  
901 GAGCTCTCAGATTTCTGATCAAACTTTGTCTTCTGACGAACTGACAGAAGTCTGATCTAATGTCTAACTCAATACACAAAATTAAGCAACCCCTT  
111▶ E L S Q I S D Q T F V F C T N L T E L D L M S N S I H K I K S N P  
1001 TCAAAAACAGAAGAATCTAATCAAATAGATTTGTCTCATAATGTTTATCATCTACAAAAGTGGGAACGGGGTCCAAGTGGAGAAGCTCCAAGAAGT  
144▶ F K N Q K N L I K L D L S H N G L S S T K L G T G V Q L E N L Q E L  
1101 GCTCTTAGCAAAAATAAAATCCTTGCCTTGCAGAGTGAAGAAGTGTGAGTTTCTTGGCAATCTCTTTCGAAAAGTGGACTTGTATCAAATCCACTT  
177▶ L L A K N K I L A L R S E E L E F L G N S S L R K L D L S S N P L

**XmaI (1211)** **BstXI (1223)**  
1201 AAAGATTTCTCCCGGGGTGTTTCCAGACAATTGGCAAGTTATTCGCCCTCCTCTTGAACAACGCCCAACTGAACCCCACTCACAGAGAAGCTTTGCT  
211▶ K E F S P G C F Q T I G K L F A L L L N N A Q L N P H L T E K L C

**PvuII (1347)**  
1301 GGGAACTTCAAACAAGCATCCAGAATCTCTCTGCTAACAACAGCTGCTGCCACCAGCGAGAGCACTTTCTCTGGGCTGAAGTGGACAAATCT  
244▶ W E L S N T S I Q N L S L A N N Q L L A T S E S T F S G L K W T N L  
1401 CACCAGCTCGATCTTCTTACAACAACCTCCATGATGTCGGCAACGGTTCCTTCTCCTATCTCCAAGCCTGAGGTATCTGTCTCTGGAGTACAACAAT  
277▶ T Q L D L S Y N N L H D V G N G S F S Y L P S L R Y L S L E Y N N

**Acc65I (1546)**  
1501 ATACAGCTGTGTCCTCCCTCGCTCTTTTTATGGACTCTCCAACCTGAGGTAAGTGAAGCGAGCATTACTAAGCAAAGTGTTCACCTGCTTAC  
311▶ I Q R L S P R S F Y G L S N L R Y L S L K R A F T K Q S V S L A S  
1601 ATCCCAACATTGACGATTTTTCCTTCAATGGTAAAAATTTGGAATATCTCAACATGGATGACAATAATATTTCAAGTACCAAAAGCAATACCTTAC  
344▶ H P N I D D F S F Q W L K Y L E Y L N M D D N N I P S T K S N T F T  
1701 GGGATTGGTGAGTCTGAAGTACCTAAGTCTTTCCAAAAGTTCACAAGTTTGAACCTTAAACAAATGAAACATTTGTGCTCACTTGTCTCCTTCCCTTG  
377▶ G L V S L K Y L Q L S L S K T T T S L Q T L T N E T F V S L A H S P L  
1801 CTCACTCTCAACTTAACGAAAAATCACATCTCAAAAATAGCAATGGTACTTTCTCTGGTTAGGCCAACTCAGGATACTTGTCTCGGCCTTAATGAAA  
411▶ L T L N L T K N H I S K I A N G T F S W L G Q L R I L D L G L N E

**BglII (1951)**  
1901 TTGAACAAAACTCAGCGCCAGGAATGGAGAGTCTGAGAAATATTTGAGATCTACTATCTATAACAAATACCTCCAAGTGTCTACCAGTTTCCTT  
444▶ I E Q K L S G Q E W R G L R N I F E I Y L S Y N K Y L Q L S T S S F

**EcoRV (2058)**  
2001 TGCATTGGTCCCAAGCCTTCAAAGACTGATGCTCAGGAGGGTGGCCCTTAAAAATGTGGATATCTCCCTTACCTTTCCGCCCTTTCGTAACCTTGACC  
477▶ A L V P S L Q R L M L R R V A L K N V D I S P S P F R P L R N L T

**XbaI (2165)**  
2101 ATTCTGGACTTAAGCAACAACAATAGCCAACATAAATGAGGACTTGTGGAGGGTCTTGAAGTCTAGAAATCCTGGATTTTCAGCACAATAAAGT  
511▶ I L D L S N N N I A N I N E D L L E G L E N L E I L D F Q H N N L  
2201 CCAGGCTCTGAAACGCGCAAAACCCGGTGGTCCCGTTAATTTCTGAAGGGGCTGTCTCACCTCCACATCTTGAATTTAGAGTCCAACGGCTTAGATGA  
544▶ A R L W K R A N P G G P V N F L K G L S H L H I L N L E S N G L D E

**BstBI (2328)**  
**Bsp119I (2328)**  
2301 AATCCCAGTCGGGGTTTTCAAGAAGTATTTCAAGTAAAGAGCATCAATCTAGGACTGAATAACTTAAACAAACTTGAACCACTTCAATTTTGTGACCCAG  
577▶ I P V G V F K N L F E L K S I N L G L N N L N K L E P F I F D D Q  
2401 ACATCTTAAGGTCACTGAACCTCAGAAGAACCTCATAACATCTGTTGAGAAGGATGTTTTCGGGCCGCTTTTCAAAAACCTGAACAGTTTATAGATGC  
611▶ T S L R S L N L Q K N L I T S V E K D V F G P P F Q N L N S L D M

**BbrPI (2519)** **HpaI (2544)**  
2501 GCTTCAATCCGTTTCGACTGCAGTGTGAAAGTATTTCTGGTGTGTTAAGTGGATCAACCAGACCCACACTAATATCTCTGAGCTGTCCACTCACTACCT  
644▶ R F N P F D C T C E S I S W F V N W I N Q T H T N I S E L S T H Y L  
2601 CTGTAACACTCCACATCATTATTATGGCTTCCCTGAAAGCTTTTCTGATACATCATCTGTAAGACAGCGCCCTTTGAACTCCTTCTCATAATCAGC  
677▶ C N T P H H Y Y G F P L K L F D T S S C K D S A P F E L L F I I S

**XcmI (2701)**  
2701 ACCAGTATGCTCCTGTTTTTATACTTGTGGTACTGCTCATTACATCGAGGGCTGGAGGATCTTTTTTACTGGAATGTTTCAGTGCATCGGATTTCTG  
711▶ T S M L L V F I L V V L L I H I E G W R I S F Y W N V S V H R I L

**Tth111I (2874)**

2801 GTTTCAAGGAAATAGACACACAGGCTGAGCAGTTTGAATATACAGCCTACATAATTCATGCCATAAAGACAGAGACTGGGTCTGGGAACATTTCTCCCC  
744▶ G F K E I D T Q A E Q F E Y T A Y I I H A H K D R D W V W E H F S P  
2901 AATGGAAGAACAAAGACCAATCTCTCAAATTTTGGCTAGAGAAAGGACTTTGAAGCAGGCGTCTTGGACTTGAAGCAATTGTTAATAGCATCAAAGA  
777▶ M E E Q D Q S L K F C L E E R D F E A G V L G L E A I V N S I K R  
3001 AGCCGAAAAATCATTTCGTTATCACACACCATTTATTAAGACCCCTCTGTGAGAAGATTCAGGTACATCACGCAGTTCAGCAAGCTATTGAGCAA  
811▶ S R K I I F V I T H H L L K D P L C R R F K V H H A V Q Q A I E Q  
3101 ATCTGGATTCAATTATACTGATTTTTCTCCAGAATATCCAGATTATAAACTAAACCATGCACCTCTGTTTGGGAAGGGAATGTTAAATCTCATTGCAT  
844▶ N L D S I I L I F L Q N I P D Y K L N H A L C L R R G M F K S H C I

**EcoRI (3272)**

3201 CTTGAACTGGCCAGTTCAGAAAGAACGGATAAATGCCTTTTCATATAAATTGCAAGTAGCACTTGGATCTCGGAATTCAGCACATTAACCTCATTGAAAG  
877▶ L N W P V Q K E R I N A F H H K L Q V A L G S R N S A H •

**NheI (3318)**

3301 ATTTGAGTTCGGTAAAGGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTT

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**HpaI (3456)**

3401 GTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACAAATTGCATTCATTTTATGTTTCAGGTTTCAGGG

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**EcoRI (3552)**

3501 GGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAACCTTTAACCTCCAATCAAGCCT  
3601 CTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTT

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**SapI (3734)**

3701 TAAGATATAGTGTATTTTCCAAGGTTTGAAGTCTCTTCATTTCTTTATGTTTAAATGCAGCTGACCTCCACATTCCTTTTATGAAAAATATTCAG

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**SwaI (3805)** **EcoO109I (3866)**

3801 AAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTG  
3901 GACTTAGGGAACAAAGGAACCTTAAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAAT  
141▶ • N R T Y K L P I L E E I

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**BstXI (4095)**

4001 GGTGGTTTTGACCAGTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACC  
128▶ 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 V V  
4101 CTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGG  
94▶ 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 A I A

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**StuI (4230)**

4201 CTTAGCAGACAGCAGTGACCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCCGACATGGTGCTT  
61▶ 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  
4301 GTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAG  
28▶ 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

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**AseI (4438)**

4401 TGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCT

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**SpeI (4593)**

4501 CTGCTTATATAGACCTCCCACCGTACACGCTACCGCCATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTC  
4601 AAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCAT

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**SnaBI (4721)**

4701 CATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCCAAGTAGGAAAGTCCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCA

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**NdeI (4826)**

4801 TTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAG  
4901 TCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGCTGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGT

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**PaeI (5012)**

**PstI (5005)**

**SdaI (5004)** **BspLU11I (5022)**

5001 AACGCCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCC  
5101 CCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGT  
5201 GCGCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGGAAGCGTGGCGTTTCTCATAGCTCACGCTGTAGGTATCTC

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**ApaLI (5336)**

5301 AGTTCGGTGTAGGTGTTCCGCTCAAGCTGGGCTGTGTGCAGAACCCCCGTTCCAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCA  
5401 ACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTG  
5501 GCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAA  
5601 CAAACCACCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGT

**EagI (5772)**

PacI (5752) SmaI (5761) **NotI (5771)**

5701 CTGACGCTCAGTGGAACGAAAACACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTCA

5801 TTACATCTGTGTGTTGGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCA

5901 GTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA