



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)**  
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTATGTCGTGACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

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**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC  
**PvuII (239)**  
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCCGCTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCGCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

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**AgeI (552)** **SphI (560)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCTACCTGAGATCACCGTTCAGCATGCGGGAGGAGGGGCGCCCTTTCTGGCTGTGGCC  
1 M R G G R G A P F W L W P

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**MluI (649)** **PstI (676)**  
601 GCTGCCAAGCTGGCGTCTGCCTCTGTTGTGGGTGCTTTCCAGCGGACGCGTCCCGAGGCGAGCGCGGGCCACTGCAGTGTACGGAGTTGGACCC  
13 L P K L A L L P L L W V L F Q R T R P Q G S A G P L Q C Y G V G P  
701 TTGGGCGACTTGAAGTCTCGTGGGAGCCTCTGGGAGCTGGGAGCCCCCTCCGAGTTACACCTCCAGAGCCAAAAGTACCGTTCCAACAAAACCCAGA  
47 L G D L N C S W E P L G D L G A P S E L H L Q S Q K Y R S N K T Q  
801 CTGTGGCAGTGGCAGCCGAGCGAGCTGGTGGCCATCTCGGGAACAGCTCACCATGTGACAAAACCTCTGTCTGGGCGACTAAGGCAGCCAGCC  
80 T V A V A A G R S W V A I P R E Q L T M S D K L L V W G T K A G Q P  
901 TCTCTGGCCCCCGTCTCGTGAACCTAGAAAACCCAAATGAAGCCAAACGCCCCCGGCTGGGCCCTGACGTGGACTTTTCCGAGGATGACCCCTGGAG  
113 L W P P V F V N L E T Q M K P N A P R L G P D V D F S E D D P L E  
1001 GCCACTGTCCATTGGGCCACCTACATGGCCATCTCATAAAGTTCTGATCTGCCAGTCCACTACCGAAGATGTGAGGAGCGGCCCTGGACCCTGCTGG  
147 A T V H W A P P T W P S H K V L I C Q F H Y R R C Q E A A W T L L

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**NheI (1152)**  
1101 AACCGGAGCTGAAGACCATAACCCTGACCCCTGTTGAGATCCAAGATTTGGAGTACGCCACTGGCTACAAAAGTGTATGGCCGCTGCCGGATGGAGAAAGA  
180 E P E L K T I P L T P V E I Q D L E L A T G Y K V Y G R C R M E K E  
1201 AGAGGATTTGTGGGGCGAGTGGAGCCCCATTTGTCTTCCAGACACCGCCTTCTGCTCCAAAAGATGTGTGGGTATCAGGGAACCTCTGTGGGAGCGCT  
213 E D L W G E W S P I L S F Q T P P S A P K D V W V S G N L C G T P  
1301 GGAGGAGAGGAACCTTTGCTTCTATGGAAGGCCCGAGGCCCTGTGTGAGGTGAGCTACAAAAGTCTGGTTCTGGGTTGGAGTCTGAGCTGAGTCCAG  
247 G G E E P L L L W K A P G P C V Q V S Y K V W F W V G G R E L S P  
1401 AAGGAATTACCTGCTGCTGCTCCTAATCCAGTGGGGCGGAGTGGGCCAGGGTGTCCGCTGTCAACGCCACAAGCTGGGAGCCTCTACCAACCTCTC  
280 E G I T C C C S L I P S G A E W A R V S A V N A T S W E P L T N L S

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**BstEII (1575)**  
1501 TTTGGTCTGCTTGGATTGAGCTCTGCCCCCGTAGCGTGGCAGTGCAGCAGCATCGTGGGAGCACGGAACTACTGTTGACCTGGCAACCGGGGCTGGG  
313 L V C L D S A S A P R S V A V S S I A G S T E L L V T W Q P G P G

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**XhoI (1628)**  
1601 GAACCACTGGAGCATGTAGTGGACTGGGCTCGAGATGGGGACCCCTGGAGAACTCAACTGGGTCCGGCTTCCCCCTGGGAACCTCAGTGTCTGTTAC  
347 E P L E H V V D W A R D G D P L E K L N W V R L P P G N L S A L L

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**PshAI (1740)**  
1701 CAGGGAATTTCACTGTGGGGTCCCCTATCGAATCACTGTGACCGCAGTCTCTGCTTCAAGCTTGGCCTCTGCATCCTCCGTCTGGGGTTCAAGGAGGA  
380 P G N F T V G V P Y R I T V T A V S A S G L A S A S S V W G F R E E  
1801 ATTAGCACCCCTAGTGGGGCAACGCTTTGGGACTCCAAGATGCCCTCCAGGGACCCCGCATAGCGTGGGGAGAGGTCCAAGGCACCACTTCCGA  
413 L A P L V G P T L W R L Q D A P P G T P A I A W G E V P R H Q L R

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**ApaLI (1925)**  
1901 GGCCACCTCACCACTACACCTTGTGTCACAGAGTGGAAACAGCCCTCCGCTGTGATGAATGTGAGTGGCAACACACAGAGTGTACCCTGCCTGACC  
447 G H L T H Y T L C A Q S G T S P S V C M N V S G N T Q S V T L P D  
2001 TTCCTTGGGGTCCCTGTGAGCTGTGGGTGACAGCATCTACCATCGCTGGACAGGGCCCTCCTGGTCCCATCCTCCGGCTTCTATCTACCAGATAACACCT  
480 L P W G P C E L W V T A S T I A G Q G P P G P I L R L H L P D N T L  
2101 GAGGTGGAAAGTCTGCCGGCATCCTATTCTGTGGGCTTGTCTGTTGGGGTGTGGCCTGAGCCTGGCCACCTCTGGAAGGTGTACCACCTAAGG  
513 R W K V L P G I L F L W G L F L L G C G L S L A T S G R C Y H L R  
2201 CACAAAGTGTGCCCCGCTGGTCTGGGAGAAAGTCTCTGATCCTGCCAACAGCAGTTCAGGCCAGCCCCACATGGAGCAAGTACCTGAGGCCAGCCCC  
547 H K V L P R W V W E K V P D P A N S S S G Q P H M E Q V P E A Q P  
2301 TTGGGGACTTGGCCATCCTGGAAGTGGAGGAGATGGAGCCCCCGCGTATGAGATCTCCAGCCCGCCAGGCCACCGCCCGCTTACTCTGGGTA  
580 L G D L P I L E V E E M E P P P V M E S S Q P A Q A T A P L D S G Y

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**XmnI (2403)** **SfiI (2444)** **AvrII (2489)**  
2401 TGAGAAGCACTTCTGCCACACCTGAGGAGCTGGGCTTCTGGGGCCCCAGGCCACAGGTTCTGGCCTGAACCACACGTCTGGCTGCCTAGGCTAG  
613 E K H F L P T P E E L G L L G P P R P Q V L A •  
2501 CTGGCCAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT

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**HpaI (2633)** **MfeI (2644)**  
2601 TTATTTGTAACCATTATAAGCTGCAATAAACAAAGTTAAACAACAACAAATTGCATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGTTTTTTAA

2701 **EcoRI (2729)**  
GCAAGTAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGG

2801 ATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAA

2901 **SapI (2911)** **SspI (2968)** **Swal (2982)**  
GGTTTGAAGTACTAGCTCTTCATTTCTTTATGTTTTAAATGCAGTACCTCCACATTCCTTTTATAGTAAAATATTCAGAAATAATTTAAATACATCATTGC

3001 AATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTT

3101 TAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCAT

141 • N R T Y K L P I L E E I T T K V L K G N

3201 **SacI (3243)**  
TCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATC

120 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 I S R D V E D

3301 AGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACAGCACAGACAGTGCACCTG

87 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 E A C V T V R

3401 **StuI (3407)**  
CCAATGTAGGCCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTGCTCATAGAGCATGGTGA

53 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 D E Y L M T I

3501 **BspHI (3557)** **XmnI (3549)**  
TCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCTATAGTGAGTCGATTATACTATGCCGA

20 K E T A V E V L E L D Q Q S I N F T K M

3601 **AseI (3615)** **SacI (3672)**  
TATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCCG

3701 **SpeI (3770)**  
TACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCATTGACGTCA

3801 **SnaBI (3898)**  
ATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATA

3901 CGTAGATGTAAGTCCAGTAGGAAAGTCCATAAGGTCATGTAAGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTATTGACGTCAATAGGGGGCGTACT

4001 **NdeI (4003)**  
TGGCATATGATACACTTGTACTGCAAGTGGGCAGTTTACCGTAAATACTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGA

4101 **PacI (4189)** **PstI (4182)** **SdaI (4181)** **BspLU11I (4199)**  
ACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTATGTAACGCCTGCAGGTTAATTAAGAA

4201 CATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAAAT

4301 CGACGCTCAAGTCAAGGTTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGC

4401 CGCTTACCGGATACCTGTCCGCTTTTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTCGTTCCGCTC

4501 **ApaLI (4513)**  
CAAGCTGGGCTGTGTGCACGAACCCCCGTTGAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAAGTCAACCCGGTAAGACACGACTTATCG

4601 CCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCAGGATGTAAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAA

4701 GAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTATCCGGCAACAAACCACCGCTGGTAGCGGTGG

4801 TTTTTTGTGGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAAAC

4901 **EagI (4949)** **PacI (4929)** **Swal (4938)** **NotI (4948)**  
TCACGTTAAGGGATTTGGTTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGTTTTT

5001 GTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACA

5101 TTTCTCTATCGAA