



150

**PvuI (7)**  
**SgfI (6)** 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)**  
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)** **HindIII (245)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCGCCCTACCTGAGGCC  
**Bsu36I (291)**  
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)** **NaeI (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

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**KasI (535)** **AgeI (552)** **SphI (560)** **BbrPI (566)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTGAGCATGCCACGTGCTTTGTGGACAGCATGGGTCTGGGCTGT  
1 M P R A L W T A W V W A V  
**BglIII (682)**  
601 CATCATCTGTCCACGGAAGGAGCCTCTGACCAGGCTTCTTCTGTCTTGTGACCCAACCTGGTGTCTGCGATGGCCATTCCAGATCTTTAACTCCATC  
13 I I L S T E G A S D Q A S S L S C D P T G V C D G H S R S L N S I  
**EcoRV (748)**  
701 CCCTCTGGTCTCACGGCAGGTGTGAAAAGCCTTACCTGTCCAACAATGATATCACTATGTCGGCAACAGAGACCTGCAGAGGTGTGTGAACCTGAAGA  
47 P S G L T A G V K S L D L S N N D I T Y V G N R D L Q R C V N L K  
**DraIII (826)** **Bsu36I (855)**  
801 CTCTGAGGCTGGGGCCAATGAAATTCACACAGTGGAGGAAGATTCTTTTTTTCACCTGAGGAATCTTGAATATTTGACTTATCCTATAATCGTTATC  
80 T L R L G A N E I H T V E E D S F F H L R N L E Y L D L S Y N R L S  
901 TAACCTATCATCCTCTGTTCCAGTCCCTTTATGTCTTGAATTTCTAAACTTACTGGGAAATTTATACAAAACATTTGGGAAACATCTCTTTTTTCT  
113 N L S S S W F R S L Y V L K F L N L L G N L Y K T L G E T S L F S  
1001 CATCTCCAAATCTCGGACCCTAAAAGTAGGAAATAGTAACAGCTTCACTGAGATTCATGAAAAGGATTTCACTGGACTGACTTTTCTGAGGAGCTTG  
147 H L P N L R T L K V G N S N S F T E I H E K D F T G L T F L E E L  
1101 AGATCAGTCTCAAAATCTGCAGATATATGTGCCAAAGAGTTTAAAGTCAATCCAGAACATTAGCCATCTGATTCTACATCTGAAGCAGCCTATTTACT  
180 E I S A C Q N L Q I Y V P K S L G I Q N I S H L I L H L K Q P I L L  
1201 CGTGGACATTTCTGTAGATATTGTAAGTTCCTTAGATGTTTTGAACSTGAGAGATACTAATTTGCACACTTTCCATTTTTCAGAAGCATCCATCAGTGAA  
213 V D I L V D I V S S L D C F E L R D T N L H T F H F S E A S I S E  
**HindIII (1318)**  
1301 ATGAGTACATCGGTTAAAAAGCTTATATTTAGAAATGTGCAATTCACCGATGAAAGTTTTGTTGAAGTTGTCAAACCTGTTTAACTATGTTTCTGGGATCT  
247 M S T S V K K L I F R N V Q F T D E S F V E V V K L F N Y V S G I  
**AvrII (1476)** **HpaI (1494)**  
1401 TAGAAGTAGAGTTTGATGACTGTACCCATGATGGAATTTGGCGATTTTAGAGCACTGAGTTGGACAGAATTAGACACCTAGGTAATGTGGAGACGTTAAC  
280 L E V E F D D C T H D G I G D F R A L S L D R I R H L G N V E T L T  
1501 AATACGGAAAGTTGCATATCCACAGTTTTTCTATTTCTAGTCTGAGTAGTATATCCACTCACAGGCAGAGTAAAAGAGTCAACAATAGAAAACAGT  
313 I R K L H I P Q F F L F H D L S S I Y P L T G R V R K R V T I E N S  
1601 AAGTTTTTCTGGTTCTTGTACTTTCAACAATTTAAATCATTAGAATATTTGGATCTCAGTGAACCTAATGTCTGAAGAAACCTTAAAAACT  
347 K V F L V P C L L S Q H L K S L E Y L D L S E N L M S E E T L K N  
1701 CAGCCTGAAGGATGCCTGGCCCTTCTCAAACCTTGGTTTTAAGGCAGAATCGTTTGAATCACTAGAAAAACGGGAGAATTTTGTACTCTGGA  
380 S A C K D A W P F L Q T L V L R Q N R L K S L E K T G E L L L T L E  
**EcoRV (1816)** **PvuII (1879)**  
1801 AAATCTGAATAACCTTGATATCAGTAAGAATAATTTCTTCAATGCCTGAAACTTGTGAGTGGCCAGGAAAAATGAAACAGCTGAACCTATCCAGCACA  
413 N L N N L D I S K N N F L S M P E T C Q W P G K M K Q L N L S S T  
1901 AGGATACACAGTTAACTCAGTGCCTTCCCGAGCCCTGGAAATTTAGATGTAGCAATAACAATCTCGATTCAATTTCTTTGATTTTGGCACAATCA  
447 R I H S L T Q C L P Q T L E I L D V S N N N L D S F S L I L P Q L  
2001 AAGAACTTTATATTTCCAGAAAATAAGTTGAAGACTCTACCAGATGCCTCCTTCTTACCGTGTATCAGTTATGAGAATTAGCAGAAAATATAATAAATAC  
480 K E L Y I S R N K L K T L P D A S F L P V L S V M R I S R N I I N T  
2101 TTTCTCAAAGGAACAACCTTGATTCTTTTCAAGCACTGAAAGACGTTGGAGGCGGGTGGCAACAACCTTCAATTTGCTCCTGTGACTTCTGTCTTCCACAG  
513 F S K E Q L D S F Q Q L K T L E A G G N N F I C S C D F L S F T Q  
**SaII (2227)**  
2201 GGACAGCAGGCACTGGGCGGTGCTGCTGCTGACTGGCCGATGACTACCGCTGTGACTCTCCCTCCATGTGCGGGGCCAGCGGGTGCAGGACGCCCGGC  
547 G Q Q A L G R V L V D W P D D Y R C D S P S H V R G Q R V Q D A R  
**EagI (2324)**  
2301 TCTCCCTTTCTGAATGCCACAGGCGCGGTGTCGCGAGCGTGTGTCGCCCTTCTCTGTTGCTCCTGCTCACGGGGGTGCTGTGTACCCTTTCCA  
580 L S L S E C H R A A V V S A A C C A L F L L L L L L T G V L C H R F H  
2401 CGGACTGTGGTACATGAAGATGATGTGGCGTGGCTGCAGGCCAAGAGGAAGCCAGGAAGGCTCCCGCAGGGACATCTGCTACGACGCTTCTGTGTC  
613 G L W Y M K M M W A W L Q A K R K P R K A P R R D I C Y D A F V S  
**BsrBI (2506)**  
2501 TACAGCGAGCGGATCTCTACTGGTGGAGAACCTCATGGTCCAGGAGCTGGAGCACTTCAACCTCCCTTTAAGCTGTGCTTTCATAAGCGAGACTTCA  
647 Y S E R D T S Y W V E N L M V Q E L E H F N P P F K L C L H K R D F  
2601 TTCCTGGCAAGTGGATTATCGACAACATCATTGACTCCATTGAAAAGGCCACAAAACATCTTTGTGCTTTCCGAGAACTTTGTGAAGAGCGAGTGGTG  
680 I P G K W I I D N I I D S I E K S H K T I F V L S E N F V K S E W C  
2701 CAAGTATGAGCTGGACTTCTCCATTTCCGCTCTTTGATGAGAACAATGATGCTGCCATTCTGATTCTGCTGGAGCCATTGACAAGAAGGCCATTCCC  
713 K Y E L D F S H F R L F D E N N D A A I L I L L E P I D K K A I P

**Eco47III (2801)**  
**AfeI (2801)**  
2801 CAGCGCTTCTGTAAGCTGCGGAAGATCATGAACACCAAGACCTACCTGGAGTGGCCCGTGGATGAGACTCAGCAGGAAGGGTTTTGGTTAAATTTGAGAG  
747▶ Q R F C K L R K I M N T K T Y L E W P V D E T Q Q E G F W L N L R

**BamHI (2916)**  
**AvrII (2912)** **NheI (2922)**  
2901 CTGCAATAAGGTCTAGGATCCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTT  
780▶ A A I R S •

**HpaI (3060)** **MfeI (3071)**  
3001 ATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAGTTAACAAACAATTGCATTCATTTTATGTTTCAGGTTCT

**EcoRI (3156)**  
3101 AGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATTCTAAAAATACAGCATAGCAAACCTTAACTCCAAATCAA  
3201 GCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGG  
3301 AGTTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTGCTCTTCATTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATAT

**SwaI (3409)**  
3401 TCAGAAATAATTTAAATACATCATTGCAATGAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTA  
3501 GTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTTCTGGTGTACTTGAGGGGGATGAGTTCCT  
141▶ • N R T Y K L P I L E E

**SacI (3670)** **BstXI**  
3601 CAATGGTGGTTTTGACCAGCTTGCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTTCGCACATGCCACAGGGGCTGAC  
129▶ 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 V  
3701 CACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCAGCAGACCCCAATGGCA  
96▶ 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 A

**StuI (3834)**  
3801 ATGGCTTCAAGCAGACAGTACCTGCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCAGTCTTGGTCTGATGGCCGCCCCGACATGGT  
62▶ 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 H

**XmnI (3976)**  
3901 GCTTGTGCTCATAGAGCATGGTATCTTCTAGTGGCAGCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCT  
29▶ 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 (4042)** **SacI (4099)**  
4001 ATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACG

**SpeI (4197)**  
4101 AGCTCTGTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACT  
4201 AGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGACTGCCAAAACCGCA

**SnaBI (4325)**  
4301 TCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACC

**NdeI (4430)**  
4401 GTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGG  
4501 AAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGGTGTTGGCGGTGAGCCAGGCGGGCCATTTACCCTAAGTT

**SdaI (4608)** **PacI (4616)** **BspLU11I (4626)**  
4601 ATGTAACGCCCTGCAGGTTAA TTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCCTTTTCCATAGGC  
4699 TCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTC  
4799 CCTCGTGGCTCTCTGTTCCGACCTGCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGG

**ApaLI (4940)**  
4899 TATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTG  
4999 AGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAA  
5099 GTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCC  
5199 GGCAAAACAAACCCGCTGGTAGCGGTGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTA

**PacI (5356)** **SwaI (5365)** **EagI (5376)** **NotI (5375)**  
5299 CGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTA  
5399 TTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTG  
5499 TCCCCAGTCAAGTGCAGGTGCCAGAACATTTCTATCGAA