



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

**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCCTACCTGAGGCC  
**PvuII (239)**  
**Bsu36I (291)**  
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
**NaeI (441)** 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGTCTTTGTTTCGTTT

**NcoI (560)**  
**BstEII (555)**  
**KasI (535)** 501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTACCCATGGTGGAAAGGGTATCAGGACGGCGGCCCTGCT  
**AgeI (552)** 1▶ M A G K G S S G R R P L L

**XcmI (623)**  
**SdaI (675)** 601 GCTGGGGCTGCTGGTGGCGTAGCCACTGTCCACTGGTCATCTGTCCCTACACAAAGTGGAGGAGAGCTTCAACCTGCAGGCCACACATGACCTGCTC  
13▶ L G L L V A V A T V H L V I C P Y T K V E E S F N L Q A T H D L L  
701 TACCACTGGCAAGACCTGGAGCAGTACGACCATCTTGAATTCCTGGGAGTCTGCCAGGACGTTCTCGGGCAGTGGTGTATCGAGTGTCTCCAGCC  
47▶ Y H W Q D L E Q Y D H L E F P G V V P R T F L G P V V I A V F S S

**SacII (800)** 801 CCGCGTTTACGTGCTTTGCTGTTAGAAATGTCCAAGTTTTACTCTCAGCTAATAGTTAGAGGAGTCTGGACTCGGCGTGATTTTTGGACTCTGGAC  
80▶ P A V Y V L S L L E M S K F Y S Q L I V R G V L G L G V I F G L W T

**NcoI (932)**  
**SfiI (930)** 901 GTTACAAAAGGAAGTGGAGCGGCACTTGGGGCCATGGTGGCCACCATGTTCTGCTGGGTGACGGCCATGCACTTCCACTGATGTTCTACTGCACGCGG  
113▶ L Q K E V R R H F G A M V A T M F C W V T A M Q F H L M F Y C T R

**SfiI (1038)**  
**Bsp120I (1067)** 1001 AACTGCCAATGTGCTGGCCCTGCCTGTAGTCTGCTGGCCCTCGGGCCTGGCTGGGCACGAGTGGGCCCTTCACTGGCTGTGAGCCTTCGCCA  
147▶ T L P N V L A L P V V L L A L A A W L R H E W A R F I W L S A F A

**XmnI (1166)** 1101 TCATCGTGTTCAGGGTGGAGCTGTGCCTGTTCTGGCCCTCTGCTGCTGCTGGCCTTGGCAACCGAAAGGTTTCTGTAGTCAGAGCCCTTCGCCACGC  
180▶ I I V F R V E L C L F L G L L L L A L G N R K V S V V R A L R H A

**BamHI (1211)** 1201 CGTCCCGGAGGGATCCTCTGTTTAGGACTGACGGTGTGCTGTTGACTCTATTTTTGGCGGCAGCTCACTTGGCCGGAAGGAAAGGTGTTTTGGTACAAC  
213▶ V P A G I L C L G L T V A V D S Y F W R Q L T W P E G K V L W Y N

**SacII (1368)** 1301 ACTGTCCTGAACAAAAGTCCAACCTGGGGGACCTCCCGCTGTGTGTACTTCTACTCAGCCCTGCCCGCGGCTGGGCTGCAGCCTGCTCTTCATCC  
247▶ T V L N K S S N W G T S P L L W Y F Y S A L P R G L G C S L L F I  
1401 CCCTGGGCTTGGTAGACAGAAGGACGCACGCGCGACGGTGTGGCGCTGGGCTTCATGGCACTTACTCCCTCCTGCCACACAAGGAGCTACGTTTCAT  
280▶ P L G L V D R R T H A P T V L A L G F M A L Y S L L P H K E L R F I

**BsrGI (1580)** 1501 CATCTATGCCTTCCCATGCTCAACATCACGGTGCAGAGGCTGCTCCTACCTGCTGAATAACTATAAAAAGTCTTGGCTGTACAAAGCAGGGTCTCTG  
313▶ I Y A F P M L N I T A A R G C S Y L L N N Y K K S W L Y K A G S L

**DraIII (1612)** 1601 CTTGTGATCGGACACCTCGTGGTGAATGCCGCTACTCAGCCACGGCCCTGTATGTGTCCATTTCAACTACCAAGTGGCGTGCATGCAAGGCTGC  
347▶ L V I G H L V V N A A Y S A T A L Y V S H F N Y P G G V A M Q R L

**PvuII (1702)**  
**PshAI (1719)** 1701 ACCAGCTGGTGGCCCCAGACAGACGCTCTTCTGCACATTGACGTGGCAGCCCGCCAGACAGGTGTGTCTCGGTTTCTCAAGTCAACAGCGCTGGAG  
380▶ H Q L V P P Q T D V L L H I D V A A A Q T G V S R F L Q V N S A W R

**SphI (1835)** 1801 GTACGACAAGAGGGAGGATGTGCAGCCGGGACAGGCATGCTGGCATAACACACATCCTCATGGAGGCGGCCCTGGGCTCTGGCCCTTACAGGGAC  
413▶ Y D K R E D V Q P G T G M L A Y T H I L M E A A P G L L A L Y R D  
1901 ACACACCGGGTCTGGCCAGCGTGTGGGGACACAGTGTGAGTCTGAACCTGACCAACTGCCCCCTTCAACGTCCACCTGCAGACAAAGCTGGTGC  
447▶ T H R V L A S V V G T T G V S L N L T Q L P P F N V H L Q T K L V

**Bsu36I (2024)**  
**EagI (2017)**  
**StuI (2057)**  
**NheI (2070)** 2001 TTCTGGAGAGGCTCCCCGGCGCTCCTGAGGGGACCAGGCAGCCCTCAGCAGCCACAGGCTTCCAGGAGCTAGCTGGCCAGACATGATAAGATACATT  
480▶ L L E R L P R P S •

2101 GATGAGTTTGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTTGTAAACCATTATAAGCTGCA

**HpaI (2208)** 2201 AATAACAAGTTAAACAACAACAAATTGCATTCTATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGG  
**MfeI (2219)**

**EcoRI (2304)** 2301 TATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGG  
2401 CTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGTCTTCTTCTTCTT

2501 **SspI (2543)** **SwaI (2557)**  
 TATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTTTATTAG  
 2601 GCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAATAGAAATTGGACAGCAAGAAAG  
 2701 CGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTC  
 141 • N R T Y K L P I L E E I T T K V L K G N M E I L V F C D  
 2801 **SacI (2818)**  
 AGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACA  
 112 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 S Y P H R V A V  
 2901 **StuI (2982)**  
 ATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAG  
 78 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 G I Y A E I H V A  
 3001 CAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAG  
 45 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 K E T A V E V L  
 3101 **BspHI (3132)** **BbsI (3128)** **XmnI (3124)** **AseI (3190)**  
 CTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTC  
 12 E L D Q Q S I N F T K M  
 3201 **SacI (3247)**  
 AAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTCACTAAACGAGCTCTGTTATATAGACCTCCCACCGTACACGCCTACCGCCATTGCGT  
 3300 **SpeI (3345)**  
 CAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCC  
 3399 **SnaBI (3473)**  
 CCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGA  
 3499 **NdeI (3578)**  
 AAGTCCATAAAGTCATGTACTGGGCATAATGCCAGGCGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTA  
 3599 CTGCCAAGTGGGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACGTCAA  
 3699 **SdaI (3756)** **PacI (3764)** **BspLU11I (3774)**  
 TGGGCGGGGTCGTTGGGCGTCAAGCAGGCGGCCATTTACCGTAAGTTATGTAACGCCTG C A G G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G C A  
 3797 AAAGGCCAGGAACCGTAAAAAGGCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGG  
 3897 CGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCTGTCCGACCTGCCGCTTACCGGATACCTGTCCG  
 3997 **ApaLI (4088)**  
 CTTTTCTCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGA  
 4097 ACCCCCCGTTCAAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGT  
 4197 AACAGGATTAGCAGAGCGAGGTATGTAGGCGGTCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCG  
 4297 CTCTGCTGAAGCCAGTTACCTTCGGA AAAAGAGTTGGTAGTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCA  
 4397 GATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGATTTTGGTC  
 4497 **PacI (4504)** **SwaI (4513)** **EagI (4524)** **NotI (4523)**  
 ATGGCTAGTTAATTAACATTTAAATC AGCGGCCCAATAAAATATCTTTATTTTATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATA  
 4597 CGCTCTCCATCAAAAACAAACGAAAACAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA