



125

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

101 GAGAAAGTGGCGGGGTAAGTGGAAAGTGTGCTGTACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGGCC **PvuII (239)** **Bsu36I (291)**

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCCTCCCGCCTGTGGTGCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
**NgoMI (441)**  
**NaeI (441)** 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

**BspHI (560)**  
**KasI (535)** 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACGGTTCATGACTATACTCCCCAAAAAGAACGCCACCTCCCGA **AgeI (552)**  
1▶ M T I L P K K K P P P P D

**SrfI (627)** 601 CGCCGACCCGGCCAAACGAACCGCCGCGCCCGGGCCGCTGCCCGGGCGCTCGGCGCGGTGCGGGTGTAGGCGTGGGTGGCGCGGCACGGGTGTGGGT **KasI (645)**  
13▶ A D P A N E P P P P G P L P P A P R R G A G V G V G G G G T G V G

**Bsu36I (760)** 701 GGAGGAGAGCGCGACCGTACTCCGGCTCGTGGGGGCCGCTCCCGGGCTTCGCCGCCACTCAGGGCCCGCTCCCGGGGCCGCTGGTGTCTTTCATC **BsrBI (769)**  
47▶ G G E R D R D S G V V G A R P R A S P P P Q G P L P G P P G A L H

**SfiI (874)** 801 GTTGGGCACTGGCGTCCGCTGGCGCAGTCGCGGGCCCTCGGCCACAGCAGGCTTCTCCACTCCTTGTGGGGCCCCGGTGGCCCCGGCGCGTCC **SfiI (874)**  
80▶ R W A L A V P P G A V A G P R P Q Q A S P P P C G G P G G P G G P

**Asp718I (964)** 901 TGGTGACGCTCTTGGTGCACAACCTGCGGGGTGGCGCGGCAGGGTGGTGGTGGGGTGGTACCGTGGGGCTGGGGCGTGTCTCGGGGCC **Acc65I (964)** **SrfI (996)**  
113▶ G D A L G A T T A G V G A A G V V V G V G G T V G V G C C S G P

**BspEI (1056)** 1001 GGCACAGCAAGCGCGCGTCAAGCTCCCGCGTGGCGCAGTTGGCGGGCCAGTCCGGAACGTGAAGAGTGGAGCGGGTACAACAGTGAAGACG **BsrBI (1076)**  
147▶ G H S K R R R Q A P G V G A V G G A S P E R E E V G A G Y N S E D

**BamHI (1134)** 1101 AGTATGAAGTGCAGCGCAATCGAGGCCATGGATCCCGCCACTGTAGAACAGCAGGAACACTGGTTTAAAAGCCCTTGGGGACAAGAAAGCCTT **StuI (1175)** **Eco147I (1175)** **XmnI (1191)**  
180▶ E Y E A A A A R I E A M D P A T V E Q Q E H W F E K A L R D K K G F

**Ppu10I (1276)** 1201 CATCATCAAGCAGATGAAGGAGGACGGTGCCTGTCTATTTCCGGCTGTAGCTGACCAGGTGTATGGAGACCAGGACATGCATGAGGTTGTTTCAAAGCAT **BstBI (1289)**  
213▶ I I K Q M K E D G A C L F R A V A D Q V Y G D Q D M H E V V R K H **NsiI (1276)** **AsuII (1289)**

1301 TGCATGGACTATCTGATGAAGAAGCTGATTACTTCTCCAACATGTACAGAAAGACTTCACCACCTATATCAACCGGAAGCGGAAAAACAACCTGCCATG **BamHI (1493)**  
247▶ C M D Y L M K N A D Y F S N Y V T E D F T T Y I N R K R K N N C H

**BsrGI (1433)** 1401 GCAACCACATTGAAATGCAGGCTATGGCAGAGATGTACAACCGTCTGTGGAGGTGTATCAATATAGCACAGAACCTATCAACACATTCCATGGGATCCA **BamHI (1493)**  
280▶ G N H I E M Q A M A E M Y N R P V E V Y Q Y S T E P I N T F H G I H

**XcmI (1577)** 1501 TCAAAATGAAGATGAACCATCCGTGTGCTAGCTACCACCGAATATCCACTATAATTAGTGGTGAATCCTAACAGGCCACTATTGGTGGGGCTGGGC **XcmI (1577)**  
313▶ Q N E D E P I R V S Y H R N I H Y N S V V N P N K A T I G V G L G

1601 CTACCGTCATTTAAGCCAGGTTTGCAGAGCAGTCCCTGATGAAGAATGCCATAAAGACATCAGAAGAGTTCATGGATTGAACAGCAAATGCTGGAAGACA **XhoI (1754)**  
347▶ L P S F K P G F A E Q S L M K N A I K T S E E S W I E Q Q M L E D

**XhoI (1754)** 1701 AGAAACGAGCTACAGACTGGGAGGCCACAAATGAGGCCATAGAGGAGCAGGTGGCTCGAGAATCTTACCTTACGTTGGTGGGATCAAGAGAAACAGGC **XhoI (1754)**  
380▶ K K R A T D W E A T N E A I E E Q V A R E S Y L Q W L R D Q E K Q A

**SandI (1812)** 1801 CCGCCAGGTCCGGGGACCCAGCCAGCCCCGAAAGCCAGTGCACATGCAGTTCAGCCACAGCAGCAGCCTCCAGTGGCTGGAGGAATGGACTAGTCGG **SpeI (1891)**  
413▶ R Q V R G P S Q P R K A S A T C S S A T A A A S S G L E E W T S R

**SphI (1947)** 1901 TCCCCACGGCAACGAAGTTCAGCCTCGTACCTGAGCACCTGAACTGCATGCCGAGCTAGGCATTAAGCCCCCTTCCCAGGCACTGTGTTAGCTCTTG **SphI (1947)**  
447▶ S P R Q R S S A S S P E H P E L H A E L G I K P P S P G T V L A L

**SexAI (2022)** 2001 CCAAACCTCCTTACCCTGTGCACCAGGTACAAGCAGTCAAGTCTCAGCAGGGGTGATCGGGCCACCTCCTCTTGTGTCCTCTACCTGTCTGGA **SexAI (2022)**  
480▶ A K P P S P C A P G T S S Q F S A G G D R A T S P L V S L Y P A L E

2101 GTGCCGGGCCCTCATCCAGCAGATGTCCCCTCTGCCTTTGGTCTGAATGATTGGGACGATGATGAGATCCTAGCATCGGTGCTGGCAGTGTCCCAACAG **MscI (2295)**  
513▶ C R A L I Q Q M S P S A F G L N D W D D D E I L A S V L A V S Q Q **NheI (2289)**

2201 GAATACCTAGACAGTATGAAGAAAAACAAGTGCACAGAGAGCCACCCACAGACAAGAGTTGATGGACACCCAGGACTGGACATCATTGCTAGCTGGCC **NheI (2289)**  
547▶ E Y L D S M K K N K V H R E P P P D K S •

2301 AGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATT

2401 **HpaI (2427)** **MfeI (2438)**  
 GTAACCATTATAAGCTGCAATAAACAAGTTAACAAACAACCAATTGCATTCATTTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGT

2501 **EcoRI (2523)**  
 AAAACCTCTACAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAAT

2601 AAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTTAAGATATAGTGTATTTTCCCAAGGTTTG

2701 **SspI (2762)** **SwaI (2776)**  
 AACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTAGAAATAATTTAAATACATCATTGCAATGAA

2801 AATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAG

2901 AAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGCTGACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCT  
 141 • N R T Y K L P I L E E I T T K V L K G N M E

3001 **SacI (3037)**  
 CAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTA  
 118 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 S Y

3101 GGGGTGCTGACAGCCCAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATG  
 85 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 G I

3201 **StuI (3201)** **Eco147I (3201)**  
 TAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTGTGTCTCATAGAGCATGGTATCTTCT  
 51 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 K E

3301 **XmnI (3343)** **BspHI (3351)**  
 CAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACT  
 18 T A V E V L E L D Q Q S I N F T K M

3401 **VspI (3409)** **AseI (3409)** **SacI (3466)**  
 ATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCATAACGAGCTCTGCTTATATAGACCTCCACCGTACAC

3500 **SpeI (3564)**  
 GCCTACCGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGG

3599 **SnaBI (3692)** **Eco105I (3692)**  
 GGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTA

3699 **NdeI (3797)**  
 GATGTAAGTCCATAAGGTCATGACTGGGCATAATGCCAGGGGCCATTTACCCTGTCATTGACGTCAATAGGGGGCGTACTTGGC

3799 ATATGATACACTTGATGACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACAT

3899 **PstI (3976)** **SdaI (3975)** **PacI (3983)** **PciI (3993)** **BspLU11I (3993)**  
 ACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTACGCCAGGCGGGCCATTTACCCTAAGTTATGTAACGCC T G C A G T T A A T T A A G A A C A

3997 TGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCG

4097 ACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCTGCCG

4197 CTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCA

4297 AGCTGGGCTGTGTGCAGAACCCCGTTACGCCGACCGTGCCTTATCCGGTAACTATCGTCTTGTGAGTCCAACCCGTAAGACACGACTTATCGCC

4397 ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGA

4497 ACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTATGATCCGGCAAAACAAACCACCGCTGGTAGCGGTGGTT

4597 TTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGATCTCAAGAAGATCCTTTGATCTTTTACGGGGTCTGACGCTCAGTGAACGAAAACTC

4697 **EagI (4743)** **PacI (4723)** **SwaI (4732)** **NotI (4742)**  
 ACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGT

4797 GTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATT

4897 TCTCTATCGAA