



**PvuI (7)**  
**SgfI (6)**  
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**EcoNI (96)**  
101 GAGAAGGTGGCGGGGTAACCTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**Psp1406I (203)** **PvuII (239)** **Bsu36I (291)**  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCCGCCGCCCTACCTGAGGCC  
**EcoNI (287)**  
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)** **NaeI (441)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

**KasI (535)** **AgeI (552)** **NcoI (568)**  
501 TCTGTTTGTCCGGCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTAGGAGGGCCACCATGGTGTTCCTAATGTGGACTGAAGAGA  
1 M V F P M W T L K R  
601 CAAATTCCTATCCTTTTTAACAATAATCCTAATTTCCAACCTCCTTGGGGCTAGATGGTTTCTAAAACTGCGCTGTGATGTCACTCTGGATGTTCCAA  
11 Q I L I L F N I I L I S K L L G A R W F P K T L P C D V T L D V P  
701 AGAACCATGTGATCGTGGACTGCACAGACAAGCATTTGACAGAAATCCTGGAGGTATCCACGAAACACCACGAACCTCACCTCACCATTAAACCACAT  
44 K N H V I V D C T D K H L T E I P G G I P T N T T N L T L T I N H I

**ClaI (849)** **BspLU11I**  
801 ACCAGACATCTCCCAGCGTCTTTACAGACTGGACCATCTGGTAGAGATCGATTTCCAGATGCAACTGTGTACCTATTCCACTGGGGTCAAAAAACAAC  
77 P D I S P A S F H R L D H L V E I D F R C N C V P I P L G S K N N  
901 ATGTGCATCAAGAGGCTGCAGATTAACCCAGAAGCTTTAGTGGACTCACTTATTTAAAAATCCCTTTACCTGGATGAAAACCGACTACTAGAGATACCGC  
11 M C I K R L Q I K P R S F S G L T Y L K S L Y L D G N Q L L E I P  
1001 AGGGCCTCCCGCTAGCTTACAGCTTCTCAGCCTTGGGCCAAACAACATCTTTTCCATCAGAAAAGAGAATCTAACAGAACTGGCCAAATAGAAATACT  
14 Q G L P P S L Q L L S L E A N N I F S I R K E N L T E L A N I E I L  
1101 CTACCTGGGCCAAAACCTGTTATTATCGAAATCCTGTTATGTTTTCATATTCAATAGAGAAAAGATGCCTTCTAACTTGACAAAAGTTAAAAGTCTCTCC  
17 Y L G Q N C Y Y R N P C Y V S Y S I E K D A F L N L T K L K V L S  
1201 CTGAAAGATAACAATGTCACAGCGCTCCCTACTGTTTTGCCATCTACTTTAACAGAATATATCTCTACAACAACATGATTGCAAAAATCCAAGAAGATG  
21 L K D N N V T A V P T V L P S T L T E L Y L Y N N M I A K I Q E D  
1301 ATTTAATAAACCTCAACCAATTCAAAATCTTGACCTAAGTGGAAATGGCCCTCGTTGTTATAATGCCCCATTTCTGTGGCCGCTGTAAAAATAATTC  
24 D F N N L N Q L Q I L D L S G N C P R C Y N A P F P C A P F C K N N S  
1401 TCCCTACAGATCCCTGTAATGCTTTTGTGCGCTGACAGAATTAAGTTTTACGTCTACACAGTAACTCTCTTACGATGTGCCCAAGATGGTTT  
27 P L Q I P V N A F D A L T E L K V L R L H S N S L Q H V P P R W F  
1501 AAGAACATCAACAACTCCAGGAAGTGGATCTGTCCAAAACCTCTTGGCCAAAAGAAATTTGGGGATGTAAATTTCTGCAATTTCTCCCGCCTCATCC  
31 K N I N K L Q E L D L S Q N F L A K E I G D A K F L H F L P S L I  
1601 AATTGGATCTGTCTTTCAATTTTGAATTCAGGCTATCQGTGCATCTAATGAATCTATCAAGAATTTTCTTCACTGAAAAGCTGAAAATTTGCGGAT  
34 Q L D L S F N F E L Q V Y R A S M N L S Q A F S S L K L K I L R I  
1701 CAGAGGATATGCTTTAAAGAGTTGAAAAGCTTTAACCTCTCGCCATTACATAATCTTCAAAAATCTTGAAGTTCTTGATCTTGGCACTAACTTTATAAAA  
37 R G Y V F K E L K S F N L S P L H N L Q N L E V L D L G T N F I K

**PmeI (1817)** **BglII (1847)**  
1801 ATTGCTAACCTCAGCATGTTTAAACAATTTAAAGACTGAAAGCATAGATCTTTTCAGTGAATAAAAATATCACCTTCAGGAGATTCAAGTGAAGTTGGCT  
41 I A N L S M F K Q F K R L K V I D L S V N K I S P S G D S S E V G  
1901 TCTGCTCAATGCCAGAAGCTTCTGTAGAAAAGTTATGAACCCAGGTCCTGGAACAATTACATTATTTTCAGATATGATAAGTATGCAAGGAGTTGCAGATT  
44 F C S N A R T S V E S Y E P Q V L E Q L H Y F R Y D K Y A R S C R F  
2001 CAAAAACAAGAGGCTTCTTTTATGCTGTTAATGAAAGCTGTACAAGTATGGGCAGACCTGGATCAAGTAAAAATAGTATATTTTTTGTCAAGTCC  
47 K N K E A S F M S V N E S C Y K Y G Q T L D L S K N S I F F V K S

**XcmI (2159)**  
2101 TCTGATTTTCAGCATCTTTCTTTCTCAATGCCTGAATCTGTGAGGAAATCTCATTAGCCAACTCTTAATGGCAGTGAATTCACACCTTTAGCAGAGC  
51 S D F Q H L S F L K C L N L S G N L I S Q T L N G S E F Q P L A E

**XmnI (2256)**  
2201 TGAGATATTTGGACTTCTCCAACAACCGGCTTGATTTACTCCATTCAACAGCATTTGAAAGAGCTTCAAAAACCTGGAAGTTCTGGATATAAGCAGTAATAG  
54 L R Y L D F S N N R L D L L H S T A F E E L H K L E V L D I S S N S

**NdeI (2328)**  
2301 CCATTATTTTCAATCAGAAGGAATTAACCTTTACCAAGAACCTAAAGGTTCTGCAGAAAACCTGATGATGAACGACAATGACATCTCTTCC  
57 H Y F Q S E G I T H M L N F T K N L K V L Q K L M M N D N D I S S

**XcmI (2404)** **NcoI (2413)**  
2401 TCCACCAGCAGGACCATGGAGAGTGAAGTCTTTAGAACTCTGGAATTCAGAGGAAATCACTTAGATGTTTTATGGAGAGAAGGTGATAACAGATACTTAC  
61 S T S R T M E S E S L R T L E F R G N H L D V L W R E G D N R Y L  
2501 AATTATTCAGAATCTGCTAAAAATAGAGGAATTAGACATCTCAAAAATCCCTAAGTTTCTTGCCCTCTGGAGTTTTGATGGTATGCCTCCAAATCT  
64 Q L F K N L L K L E E L D I S K N S L S F L P S G V F D G M P P N L  
2601 AAAGAATCTCTTTGGCCAAAATGGGCTCAAATCTTTCAGTTGGAAGAAATCCAGTGTCTAAAGAACCTGGAACCTTTGGACCTCAGCCACAACCAA  
67 K N L S L A K N G L K S F S W K K L Q C L K N L E T L D L S H N Q

**PshAI (2702)**  
2701 CTGACACTGTCCCTGAGAGATTATCCAACCTGTCCAGAAGCCTCAAGAATCTGATTCTTAAGAATAATCAAATCAGGAGTCTGACGAAGTATTTTCTAC  
71 L T T V P E R L S N C S R S L K N L I L K N N Q I R S L T K Y F L

**EcoRV (2818)**  
2801 AAGATGCCTTCCAGTTGGCGATATCTGGATCTCAGCTCAAATAAAAATCCAGATGATCCAAAAGACCAGCTTCCAGAAAATGTCCTCAACAATCTGAAGAT  
74 Q D A F Q L R Y L D L S S N K I Q M I Q K T S F P E N V L N N L K M

2901 <sup>ApaI (2927)</sup> GTTGCTTTTGCATCATAATCGGTTTCTGTGCACCTGTGATGCTGTGGTTTGTCTGGTGGGTTAACCATACGGAGGTGACTATTCCTTACCTGGCCACA  
 777▶ L L L H H N R F L C T C D A V W F V W V N H T E V T I P Y L A T

3001 <sup>BsrGI (3058)</sup> <sup>BglII (3074)</sup> GATGTGACTTGTGTGGGGCCAGGAGCACACAAGGGCCAAAGTGTGATCTCCCTGGATCTGTACACCTGTGAGTTAGATCTGACTAACCTGATTCTGTTCT  
 811▶ D V T C V G P G A H K G Q S V I S L D L Y T C E L D L T N L I L F

3101 <sup>PvuII (3274)</sup> CACTTTCCATATCTGTATCTCTCTTTCTCATGGTGTGATGACAGCAAGTACCTCTATTTCTGGGATGTGGGTATATAACCATTTCTGTAAGGCCAA  
 844▶ S L S I S V S L F L M V M M T A S H L Y F W D V W Y I Y H F C K A K

3201 <sup>BbsI (3318)</sup> <sup>XhoI (3351)</sup> <sup>BstEII (3367)</sup> GATAAAGGGGTATCAGCGTCTAATATCACCAGACTGTTGCTATGATGCTTTTATTGTGTATGACACTAAAGACCCAGCTGTGACCGAGTGGGTTTTGGCT  
 877▶ I K G Y Q R L I S P D C C Y D A F I V Y D T K D P A V T E W V L A

3301 <sup>BstXI (3636)</sup> GAGCTGGTGGCCAAACTGGAAGACCCAAGAGAGAAACATTTTAAATTTATGCTCGAGGAAGGACTGTTTACCAGGGCAGCCAGTTCTGGAAAACTTT  
 911▶ E L V A K L E D P R E K H F N L C L E E R D W L P G Q P V L E N L

3401 <sup>BspEI (3577)</sup> CCCAGAGCATAACAGCTTAGCAAAAAGACAGTGTGTGTGATGACAGACAAGTATGCAAAGACTGAAAATTTTAAAGATAGCATTCTACTGTCCCATCAGAG  
 944▶ S Q S I Q L S K K T V F V M T D K Y A K T E N F K I A F Y L S H Q R

3501 <sup>StuI (3760)</sup> <sup>NheI (3774)</sup> GCTCATGGATGAAAAAGTTGATGTGATTATCTTGATATTTCTTGAGAAGCCCTTTCAGAAAGTCCAAGTTCCTCCAGCTCCGAAAAGGCTCTGTGGGAGT  
 977▶ L M D E K V D V I I L I F L E K P F Q K S K F L Q L R K R L C G S

3601 <sup>StuI (3760)</sup> <sup>NheI (3774)</sup> TCTGTCCTTGAGTGGCAACAAACCCGCAAGCTCACCCATACTCTGGCAGTGTCTAAAGAAGCCCTGGCCACAGACAATCATGTGGCCTATAGTCAGG  
 1011▶ S V L E W P T N P Q A H P Y F W Q C L K N A L A T D N H V A Y S Q

3701 <sup>BspEI (3577)</sup> TGTTCAAGGAAACGGTCTAGCCCTTCTTTGCAAAACACAACACTGCCTAGTTTACCAAGGAGAGGCTGGCTGTTTCTAGCTGGCCAGACATGATAAGATA  
 1044▶ V F K E T V •

3801 CATTGATGAGTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGC

3901 <sup>HpaI (3912)</sup> TGCAATAAACAAGTTAACAAACA AATTGCATTCATTTATGTTTCAGGTT CAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAAT

4001 GTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCA

4101 GGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACTGCTTTCATT

4201 <sup>SspI (4247)</sup> <sup>SwaI (4261)</sup> TCTTTATGTTTTAAATGCACTGACCTCCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTA

4301 TTAGGCAGAAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTAAATAGAAATTTGGACAGCAAG

4401 AAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGC  
 144▶ • 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

4501 <sup>SacI (4522)</sup> <sup>BstXI (4551)</sup> AGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGC  
 113▶ 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 P H R V A

4601 <sup>StuI (4686)</sup> CACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGG  
 80▶ 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 Y A E I H

4701 ACAGCAGAGATGATCTCCCAAGTCTGGTCTGATGGCCGCCGACATGGTCTTGTGTCCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCA  
 46▶ 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 T A V E V

4801 <sup>BspHI (4836)</sup> <sup>BbsI (4832)</sup> <sup>XmnI (4828)</sup> <sup>AseI (4894)</sup> CCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAAT  
 13▶ L E L D Q Q S I N F T K M

4901 <sup>SacI (4951)</sup> TGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCCTACCGCCATT

5000 <sup>SpeI (5049)</sup> GCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTGATTACTAGTCAAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAA

5099 <sup>SnaBI (5177)</sup> ATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGT

5199 <sup>NdeI (5282)</sup> AGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGA

5299 TGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTATTGACG

5399 <sup>SdaI (5460)</sup> <sup>PacI (5468)</sup> <sup>BspLU11I (5478)</sup> TCAATGGGCGGGGTCTGTTGGCGGTGACGACGGCGGCCATTTACCGTAAGTTATGTAACGCC T G 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 G G C C

5497 AGCAAAAGCCAGGAACCGTAAAAAGCCCGTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAG

5597 GTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCTGTTCCGACCTGCCGCTTACCGGATACCTG

5697 TCCGCCTTCTCCCTTCGGGAAGCGTGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGC  
 5797 ACGAACCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCAC  
 5897 TGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATC  
 5997 TGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGGTTGCAAGC  
 6097 AGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTT

**EagI (6228)**

PacI (6208) SwaI (6217)

**NotI (6227)**

6197 GGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTTGTGTGAATCGTAACTAA  
 6297 CATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA