



**PvuI (7)**  
**SgfI (6)**
**EcoNI (96)**

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA  
 101 GAGAAGGTGGCGGGGTAACGGAAAGTGATGTCGTGACTGGTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**Psp1406I (203)**
**HindIII (245)**
**EcoNI (287)**

201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCGCCCTACCTGAGGCC  
 301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**
**NaeI (441)**

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

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**NcoI (560)**
**BstEII (555)**

501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGCTACCTGAGATCACCGGTACCACCATGGACCCATCTGTGACGCTGTGGCAGTTTCTGCTGCA  
 601 GCTTCTGAGAGAACAAGTAATGGCCACATCATCTCCTGGACCTCACGGGATGGTGGTGGTCAAGTTGGTGGATGCAGAGGAGGTGGCCCGCTATGG  
 13▶ L L R E Q G N G H I I S W T S R D G G E F K L V D A E E V A R L W

**FspI (704)**
**HindIII (736)**
**BsrBI (789)**

701 GGACTGCGCAAGAACAAGACCAACATGAATTACGACAAGCTTAGCCGGCCTTGGCGTACTACTATGATAAGAATATCATCCGCAAGGTGAGCGGCCAGA  
 47▶ G L R K N K T N M N Y D K L S R A L R Y Y Y D K N I I R K V S G Q

**NcoI (896)**

801 AGTTTGTCTACAAGTTTGTGTCTACCCAGAGGTTGCAGGGTGTCTCCACTGAAGACTGCCACCCAGCCTGAGGTGTCTGTAACCTCGGCCATAGCCAT  
 80▶ K F V Y K F V S Y P E V A G C S T E D C P P Q P E V S V T S A I A M  
 901 GGCCCTGCTACTGTCCATGCAGGCCAGGGGACACTGCCACTGGAAAGCCAGGAACACCAAAGGGTGCAGGAATGACAGGCCAAGGTGGCTTAGCACGA  
 113▶ A P A T V H A G P G D T A T G K P G T P K G A G M T G Q G G L A R  
 1001 AGCAGCCGAATGAATACATGCGCTCGGCCTCTATTCTACCTTACAATAAATCCCTGCAGCCACAGCCACAGCCACCCATTCTCTCGGCCTGCCT  
 147▶ S S R N E Y M R S G L Y S T F T I Q S L Q P Q P Q P P I P P R P A  
 1101 CAGTGCTTCCAACTACCCCTGCAGGAGTACCAGCACCCGCTCAGGGAGCAGGAGCACCAGTCCAAACCCCTAGAAGCCTGTTTGAAGCAGAAGA  
 180▶ S V L P N T T P A G V P A P A S G R S T S P N P L E A C L E A E E  
 1201 GGCTGGTCTGCCCCTGCAGGTTATCCTAACCCACCAGAGGCCCAAACCAGAAATCCGAAGAGTTGAGTCTGGACCCAAAGTTTGGCCATCCACAGCCC  
 213▶ A G L P L Q V I L T P P E A P N Q K S E E L S L D P S F G H P Q P  
 1301 CCAGAAGTCAAAGTGGAGGGGCTAAGGAAGAATTGAAAGCTGCAAGGGCTGGAGGCTTCAGTTCAGAAGCTGTCAAAGCTGAACCAGAAGTCTCAGCCT  
 247▶ P E V K V E G P K E E L E A A R A G G F S S E A V K A E P E V S A

**StuI (1404)**

1401 CAGAAGGCCTGCTGGCTCGGCTCCAGCCATCCTAACAGAGAACACAGCCAGGTGTGTGGCCTCTCCACTTCCACCACTGAGATCACCCAACCGCAGAA  
 280▶ S E G L L A R L P A I L T E N T A Q V C G L S T S T T E I T Q P Q K  
 1501 GGGCCGAAAGCCTCGGGACCTGGAACCTCCACTTAGCCCAAGCCTGCTGGGTGGCCAGGGACCTGAACGGACTCCAGGATCAGGAACAAGCTCTGGTCTT  
 313▶ G R K P R D L E L P L S P S L L G G Q G P E R T P G S G T S S G L

**Eco47III (1614)**
**AfeI (1614)**

1601 CAGGCACCGGGGCGAGCGCTAACGCCATCCCTGCTCCCCACACATACCTTGACCCCGTGTGCTGACACCCAGCTCGTGCCTCCCTAGCATCCATTTCT  
 347▶ Q A P G P A L T P S L L P T H T L T P V L L T P S S L P P S I H F

**ApaLI (1777)**

1701 GGAGCACTCTGAGTCCAATTGCACCCCGTAGTCCAGCAAGCTCTCCTCCAGTTTCCGTCCAGTGGCAGCGCACAGGTGCACATCCCTTCCATCAGTGT  
 380▶ W S T L S P I A P R S P A K L S F Q F P S S G S A Q V H I P S I S V

**Bsp120I (1834)**
**NheI (1873)**

1801 GGATGGCCTCTGACCCCGTGGTGTCTCCCCAGGGCCAGAACGCTGACTACCACCACCACCCCTTTTGTAGCTGGCCAGACATGATAAGATAC  
 413▶ D G L S T P V V L S P G P Q K P •

1901 ATTGATGAGTTTGGACAACCACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCT

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**HpaI (2011)**

2001 GCAATAAACAAAGTTAACAAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATG

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**EcoRI (2107)**

2101 TGGTATGGAATTTAAAATACAGCATAGCAAACTTTAACCTCCTCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAG  
 2201 GGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTCTTCTCATT

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**SspI (2346)**
**Swal (2360)**

2301 CTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTATGAAAAATTCAGAAAATATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTAT  
 2401 TAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTAAATAGAAAATGGACAGCAAGA

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**SacI (2621)**

2501 AAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTTCATCTCAATGAGCACAAGCA  
 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

2601 GTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCC  
 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

StuI (2785)

2701 ACAATGGTGTCAAAGTCCTTCTGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGA  
79 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 V  
2801 CAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCAC  
46 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

BspHI (2935)

XmnI (2927)

AseI (2993)

2901 CAGCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATT  
13 L E L D Q Q S I N F T K M

SacI (3050)

3001 GTCAAAACAGCGTGGATGGCGTCTCCAGC T TATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCCTACCGCCATTGCG

SpeI (3148)

3101 GTCATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGAAAT

SnaBI (3276)

3200 CCCCCTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAG

NdeI (3381)

3300 GAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATG

3400 TACTGCCAAGTGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGAAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTC

PacI (3567)

BspLU11I (3577)

3500 AATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTACCGTAAGTTATGTAACCGCTGCAGGTTAA TTAAGAACATGTGAGCAAAGGCCAG

3598 CAAAAGGCCAGGAACCGTAAAAAGGCCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGT

3698 GCGGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCTGCCGTTACCGGATACCTGTC

ApaLI (3891)

3798 CGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCAC

3898 GAACCCCGTTTACGCCCACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTG

3998 GTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTG

4098 CGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACACCGCTGGTAGCGGTGTTTTTTGTTTGAAGCAG

4198 CAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGG

EagI (4327)

PacI (4307)

SwaI (4316)

NotI (4326)

4298 TCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACCTAACAA

4398 TACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCGAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA