



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

1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGTCTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

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**HindIII (245)**

**Psp1406I (203)**
**PvuII (239)**

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGCGCCGCCCTACCTGAGGCC

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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**NgoMIV (441)**

401 GGGCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

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**BstEII (555)**

**AgeI (552)** **NcoI (560)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTCACCATGGTTATGGAGAAGCCTAGTCCCCTGCTGGTGGGGC

1▶ M V M E K P S P L L V G R

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**ScaI (614)**
**BspLU11I (644)**

601 GGAGTTTGTGCGACAGTACTACTCTGCTGAACCAGGCCCGGACATGTTGCACAGATTTTATGAAAGAAGTCTTCTATGCCACGGGGCTTGGAT

13▶ E F V R Q Y Y T L L N Q A P D M L H R F Y G K N S S Y A H G G L D

**BbrPI (796)**

701 TCCAACGGGAAGCCAGCAGATGCACTACGGGCGAAGAAATCCACAGGAAAGTGTGTCACAAAAGTCCACCAAGTCCACACCAAGATCCGCCACG

47▶ S N G K P A D A V Y G Q K E I H R K V M S Q N F T N C H T K I R H

**PshAI (891)**

801 TGGATGCTCAGCAACTCTGAATGACGGGGTGGTGGTCCAAGTGTGAGGGCTACTGTCCAACAACAACAGGCTCTGCGGAGGTTTATGCAGACCTTTGT

80▶ V D A H A T L N D G V V V Q V M G L L S N N N Q A L R R F M Q T F V

**Acc65I (956)**

901 CCTTGCTCCTGAGGGCTCTGTTGCCAACAAATCTATGTTCAACAGCATCTTCAGGTACCAAGATGAGGTCTTCGTTGGCTTTGTACAGAGCCTCAA

113▶ L A P E G S V A N K F Y V H N D I F R Y Q D E V F G G F V T E P Q

1001 GAGGAATCCGAGGAAGAAGTAGAAGAAGTGAAGAACCTGAAGAAAGACAGCAGACACCAGAGTGGTGCCTGATGATTCTGGAACCTTCTATGATCAGACTGTCAGCA

147▶ E E S E E E V E E P E E R Q Q T P E V V P D D S G T F Y D Q T V S

1101 ATGACTTGAGGAGCATTAGAGGAGCCTGTAGTGGAACAGAACCGGAGCCAGAGCCGGAGCCGGAGCCGGAACCTGTGTCCGACATTCAAGAGGACAA

180▶ N D L E E H L E E P V V E P E P E P E P E P E P V S D I Q E D K

1201 GCCTGAGGCTGCATTGGAAGAAGCTGCTCCGACGATGTGCAGAAGAGCACTTCCCGGCCCGGCTGATGTGGCCCCGGCACAGGAGGACTTGGAGCAG

213▶ P E A A L E E A A P D D V Q K S T S P A P A D V A P A Q E D L R T

1301 TTTTCTGGGCATCTGTGACGAGTAAGAACCTTCTCCAGTGGGGCTGTTCCAGTGACGGGGACACCACCTATGTGGTCAAAGTGCAGCGTCCAGC

247▶ F S W A S V T S K N L P P S G A V P V T G T P P H V V K V P A S Q

**StuI (1441)**

1401 CCCGTCCAGAATCTAAACCTGACTCTCAGATCCCACCACAAAGGCCTCAGAGAGATCAGAGAGTTCGAGAGCAGCGAATCAATATCCCTCCTCAGAGAGG

280▶ P R P E S K P D S Q I P P Q R P Q R D Q R V R E Q R I N I P P Q R G

**XcmI (1575)**

1501 ACCCCGACCAATCCGTGAGGCTGGTGAACCAGGAGATGTGAAACCTCGAAGGATGGTGGAGCACCCCTGACAGTCAACAGCTTTCATTGGAACTGCCA

313▶ P R P I R E A G E P G D V E P R R M V R H P D S H Q L F I G N L P

**FspI (1661)**

1601 CATGAGGTTGACAAGTCGGAAGTGAAGGATTTTTCCAAAATTTTGGCAATGTGGTGGAGTGCAGCATCAACAGTGGTGGGAAGTTACCAATTTTCGTT

347▶ H E V D K S E L K D F F Q N F G N V V E L R I N S G G K L P N F G

**XmnI (1720)**
**RsrII (1769)**
**XhoI (1799)**

1701 TTGTTGTGTTTGTGATTCTGAACCTGTTGAGAAGTCTTAGTAATAGGCCATCATGTTCCGAGGCGGGTCCGCTGAATGTGGAAGAGAAGAAGAC

380▶ F V V F D D S E P V Q K V L S N R P I M F R G A V R L N V E E K K T

**SacII (1893)**

1801 TCGAGTCCAGAGAAGGCGACCGCAGGATAACCGCTTCGGGGACCTGGAGCCCCGTGGTGGGCCAGTGGTGGGATGAGAGGCCCTCCCGCGGA

413▶ R A A R E G D R R D N R L R G P G G P R G G P S G G M R G P P R G

**NheI (1962)**
**BstAPI (1953)**
**MscI (1968)**

1901 GGCATGGTGCAGAAACAGGCTTTGGCGTGGGAGGGGATTACAACCTCAAGGCGAGTGAATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTT

447▶ G M V Q K P G F G V G R G I T T P R Q •

2001 TGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAACAA

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**HpaI (2100)**
**MfeI (2111)**
**EcoRI (2196)**

2101 GTTAAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAAT

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2201 TCTAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTGCC

◀

2301 AATGTGCATTAGCTGTTGACGCTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTCCCAAGTTTGAAGTACTCTTCATTTCTTTATGTTT

2401 **SspI (2435)** **SwaI (2449)**  
AAATGCACTGACCTCCACATTCCCTTTTGTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATC

2501 CAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTAAATAGAAATTGGACAGCAAGAAAGCGAGCTTC

2601 TAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCAT  
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 P A Y

2701 **SacI (2710)**  
AGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCTC  
109 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 I T D

2801 **StuI (2874)**  
AAAGTCCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTACAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATG  
76 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 S I

2901 ATCTCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGTCTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGAT  
42 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 E L D

3001 **XmnI (3016)** **AseI (3082)**  
CCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGC  
9 Q Q S I N F T K M

3101 **SacI (3139)**  
GTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAACGAGCTCTGTTATATAGACCTCCACCCTACACGCCTACCGCCATTGCGTCAATGGGGC

3201 **SpeI (3237)**  
GGAGTTGTTACGACATTTGGAAAGTCCCGTTGATTTACTAGTCAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCA

3301 **SnaBI (3365)**  
AACCGCTATCCACGCCATTGATGTAAGTCCAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAAGTCCAAAGTAGAAAGTCCATA

3401 **NdeI (3470)**  
AGGTCATGTAAGTGGCATAATGCCAGGCGGGCATTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGT

3501 GGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGGGG

3601 **PacI (3656)** **PstI (3649)** **SdaI (3648)** **BspLU11I (3666)**  
TCGTTGGGCGGTGAGCCAGGCGGGCATTACCGTAAGTTATGTAACGCTGCAGGTTAATAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAA  
3701 CCGTAAAAAGGCCGCGTTGCTGGCGTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACA  
3801 GGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGGCTCTCTGTTCCGACCCTGCCGTTACCGGATACTGTCCGCTTTCTCCCTT

3901 **ApaLI (3980)**  
CGGAAGCGTGGCGTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCAAGCTGGGCTGTGTGACGAACCCCGTTCA

4001 GCCCAGCCGCTGCGCCTTATCCGTAATATCGTCTTGTAGTCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGC

4101 AGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGC

4201 CAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTGTTTGAAGCAGCAGATTACGCGCAG

4301 **PacI (4396)**  
AAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAA

4401 **EagI (4416)** **SwaI (4405)** **NotI (4415)**  
TTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCA

4501 AAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAAGTCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA