



**PvuI (7)**  
**SgfI (6)** 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
**MfeI (82)** **EcoNI (96)**  
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACACGCCGCCGCCCTACCTGAGGCC  
**PvuII (239)** **Bsu36I (291)**  
301 GCCATCCACGCCGGTTGAGTGCAGTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  
**EcoNI (287)**  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGAGCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

**NcoI (560)**  
**BstEII (555)**  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTACCATTGGCGACGGACGGCGCTACGCCGCTTCTGAGGCT  
**KasI (535)** **AgeI (552)** 1▶ M A T D A A L R R L L R L  
**Tth111I (667)**  
**DraIII (664)**  
601 GCACCGCACGGAGATCGCGGTGGCCGTGGACAGCGCTTCCACTGCTGCACGCGTGGCTGACCACGACGTGGTCCCGAGGACAAGTTTCAGGAGACG  
13▶ H R T E I A V A V D S A F P L L H A L A D H D V V P E D K F Q E T  
701 CTTTCATCTGAAGGAAAAGGAGGGCTGCCCCAGGCCTTCCACGCCCTCTGCTCTGGCTGCTGACCCAGGACTCCACAGCCATCTGGACTTCTGGAGGG  
47▶ L H L K E K E G C P Q A F H A L L S W L L T Q D S T A I L D F W R

**Eco47III (824)**  
801 TGCTGTTCAAGGACTACAACCTGGAGCGTATGGCCGGCTGCAGCCATCTGGACAGCTTCCCAAAGATGTGGACCTCAGCCAGCCCCGGAAGGGGAG  
80▶ V L F K D Y N L E R Y G R L Q P I L D S F P K D V D L S Q P R K G R

**EagI (908)** **Acc65I (927)** **XhoI (974)**  
901 GAAGCCCCGGCCGTCCTCCCAAGGCTTTGGTACCGCCACCCAGACTCCCCACCAAGAGGAAGGCTCAGAAGAGGCTCGAGCTGCCGCGCCAGCAGCCCTG  
113▶ K P P A V P K A L V P P P R L P T K R K A S E E A R A A A P A A L  
1001 ACTCCAAGGGGACCGCCAGCCAGGTTCTCAACTGAAGGCAAGCCCCCAAGAAGCCGAGAGCAGCGCAGAGCAGCAGCGCTTCCACTCGGAACG  
147▶ T P R G T A S P G S Q L K A K P P K K P E S S A E Q Q R L P L G N

**Tth111I (1107)** **MscI (1136)** **BsaBI (1185)**  
1101 GGATTCAGACCATGTCAGCTTTCAGTCCAGAGAGCTGTGCCATGTCCTCCGGGACGTCCTCCGGGAGCCCGAGGGGCGGTGGAGGGGATCCTCATCCAGCA  
180▶ G I Q T M S A S V Q R A V A M S S G D V P G A R G A V E G I L I Q Q  
**BamHI (1184)**

**BbsI (1270)**  
**BstBI (1267)**  
1201 GGTGTTTGTAGTCAGGCGGCTCCAAGAAGTGCATCCAGGTTGGCGGGGAGTTTCTACTCTCCAGCAAGTTCGAAGACTCCGGCAGTGGGAAGAACAAGGCC  
213▶ V F E S G G S K K C I Q V G G E F Y T P S K F E D S G S G K N K A  
1301 CGCAGCAGCAGTGGCCCCAAGCCTCTGGTTCGAGCCAAGGGAGCCAGGGCGCTGCCCCCGTGGAGGTGAGGCTAGGCTGGCCAGCAGGGCAGCGTTC  
247▶ R S S S G P K P L V R A K G A Q G A A P G G G E A R L G Q Q G S V  
1401 CCGCCCTCTGGCCCTCCCCAGTGCACCCAGCTCCACCAAGAAGTGAAGAGAGTGTGCCGTGTGTCGGGACGGCGGGAGCTCATCTGCTGTGACGG  
280▶ P A P L A L P S D P Q L H Q K N E D E C A V C R D G G E L I C C D G

**SdaI (1581)**  
**PvuII (1575)**  
1501 CTGCCCTCGGGCCTTCCACTGGCTGCTGCTCCCTCCGCTCCGGGAGATCCCAGTGGACCTGGAGGTGCTCCAGTGCCTGCAGCAACAGTCCAG  
313▶ C P R A F H L A C L S P P L R E I P S G T W R C S S C L Q A T V Q  
1601 GAGGTGCAGCCCCGGCAGAGGAGCCCCGGCCAGGACCCCGTGGAGACCCCGTCCCCCGGGCTTAGTTCGGCGGGAGAGGTAAGAGGTC  
347▶ E V Q P R A E E P R P Q E P P V E T P L P P G L R S A G E E V R G

**PshAI (1731)**  
1701 CACCTGGGAACCCCTAGCCGCATGGACACGACTCTGTCTACAAGCAGCTGCCGGCTCCGCTTCTGCAGCCCCGCTGCCAGGGCTGGACTCCTCGGC  
380▶ P P G E P L A G M D T T L V Y K H L P A P P S A A P L P G L D S S A

**Bsu36I (1825)**  
1801 CCTGCACCCCTACTGTGTGGGTCTGAGGGTCAAGCAGAACCTGGCTCCTGGTGCAGGTTGCGGGGTGTGCGGAGATGGTACGGACGTGCTGCGGTGT  
413▶ L H P L L C V G P E G Q Q N L A P G A R C G V C G D G T D V L R C

**BstAPI (1976)**  
1901 ACTCACTGCGCCGCTGCCTTCCACTGGCGTGCACCTTCCAGCCGGCACCTCCCGCCCGGGACGGGCTGCAGTCCGCTCAGGAGACGTGA  
447▶ T H C A A A F H W R C H F P A G T S R P G T G L R C R S C S G D V  
2001 CCCAGCCCTGTGGAGGGGTTGCTGGCCCCAGCCCCCGCTGGCCCTGGGCTGCAAGGATGACACTGCCAGTACAGGAGCCCGCTCTGCACAG  
480▶ T P A P V E G V L A P S P A R L A C P G P A K D D T A S H E P A L H R  
2101 GGATGACCTGGAGTCCCTTCTGAGCGAGCACACCTTCGATGGATCCTGCAGTGGCCATCCAGAGCATGGCCGTCGGCGGCCCTTCCCTCCTGA  
513▶ D D L E S L L S E H T F D G I L Q W A I Q S M A R P A A P F P S •

**MscI (2214)**  
**NheI (2208)** 2201 CCCAGATGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTG

**HpaI (2346)** **MfeI (2357)**  
2301 TGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAACAAGTTAAACAACAACATTCATTCATTTATGTTTCAGGTTTCAGGGGAGGTGTGG

**EcoRI (2442)**  
2401 GAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAAT

2501 CCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTCATTAGCTGTTTGACGCTCACCTTCTTTCATGGAGTTAAGATATAG

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2601 TGTATTTTCCAAGGTTTGAAGTCTTTCATTTCTTTATGTTTAAATGCACTGACCTCCACATTCCCTTTTGTAAATAATTCAGAAATAATTTA

SapI (2624) SspI (2681) SwaI (2695)

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2701 AATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGA

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2801 ACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTG

141 • N R T Y K L P I L E E I T T K

2901 ACCAGTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCCTGATGGATC

124 V L K G N M E 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

3001 TGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACA

91 D V E D S Y 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

3101 GACAGTGACCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTGGTCTGATGGCCGCCCGACATGGTGTCTTGTCTCA

58 V T V R G I 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

BbsI (3266) XmnI (3262)

3201 TAGAGCATGGTATCTTCTCAGTGGCGACTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCCTATAGTGAGTCGTAT

24 Y L M T I K E T A V E V L E L D Q Q S I N F T K M

AseI (3328)

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3301 TATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAACGAGCTCTGCTTATAT

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3401 AGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAACAAACT

SpeI (3483)

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3501 CCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGACTGCCAAAACCGCATCATCATGGTAATA

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SnaBI (3611)

3601 GCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAA

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NdeI (3716)

3701 TAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGAGTTTACCCTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGG

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SdaI (3894)

3801 CGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGTCCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCA

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PacI (3902) BspLU11I (3912)

3901 GGTTAATTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGA

---

4001 GCATCACAATAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGGCTCTCTCT

---

4101 GTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCCGGAAAGCGTGGCGTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGT

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ApaLI (4226)

4201 AGGTCGTTGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAG

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4301 ACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTAC

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4401 GGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCCCG

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4501 CTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCA

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EagI (4662) NotI (4661)

4601 GTGGAACGAAACTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAATATCTTTATTTTTCATTACATCTGT

PacI (4642) SwaI (4651)

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4701 GTGTTGGTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGAAGTGC

4801 AGGTGCCAGAATTTCTCTATCGAA