



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


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101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC  


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**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTTCACGCGCCCGCGCCCTACCTGAGGCC **HindIII (245)**  


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301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  


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401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT **NgoMIV (441)**  


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501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCCTACCTGAGATCACCGGTTCATGAACAGTCCATCCAGTGGCTCCACCCACCCCG **AgeI (552)**  


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601 CCGCGTGC GGCTGAAGCCCTGGCTGGTGGCCAGGTGAACAGCTGCCAGTACCCAGGGCTTCAATGGGTCAACGGGAAAAAGAAATTATTCTGCATCCCC **BspHI (560)**  
13▶ R V R L K P W L V A Q V N S C Q Y P G L Q W V N G E K K L F C I P **XcmI (652)** **XmnI (681)**  


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701 TGGAGGCATGCCACAAGGCATGGTCCCAGCCAGGACGGAGATAACACCATCTTCAAGGCTGGGCCAAGGAGACAGGAAATACACCGAAGGCGTGGATG **SphI (705)**  
47▶ W R H A T R H G P S Q D G D N T I F K A W A K E T G K Y T E G V D  


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801 AAGCCGATCCGGCCAAGTGAAGGCCAACCTGCCTGTGCCCTTAACAAGAGCCGGGACTTCCGCTCATCTACGACGGGCCCGGGACATGCCACCTCA **XmaI (881)**  
80▶ E A D P A K W K A N L R C A L N K S R D F R L I Y D G P R D M P P Q  
901 GCCCTACAAGATCTACGAGTCTGTCTCAATGGCCTGTCCACAGACTCCAGCCCCCTGAGGATTACTCTTTTGGTGCAGGAGAGGAGGAGGAAGAA **XmaI (881)**  
113▶ P Y K I Y E V C S N G P A P T D S Q P P E D Y S F G A G E E E E E  
1001 GAGGAAGAGCTGCAGAGGATGTTGCCAAGCCTGAGCCTCACAGATGCAGTGCAGTCTGGCCCCACATGACACCCTATTCTTTACTCAAAGAGGATGTCA **XmaI (881)**  
147▶ E E E L Q R M L P S L S L T D A V Q S G P H M T P Y S L L K E D V  


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1101 AGTGGCCGCCACTCTGCAGCCGCCACTCTGCAGCCGCCGTTGGTGGTGGGTCCTCCAGACCCAGCCCTGGCTCCTCCCTGGCAACCC **SandI (1149)**  
180▶ K W P P T L Q P P T L Q P P V V L G P P A P D P S P L A P P P G N P  


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1201 TGCTGGCTTCAAGGAGCTTCTCTCTGAGGTCTGGAGCCTGGGCCCTGCCTGCCAGCCTGCCCCCTGCAGGCGAACAGCTCCTGCCAGACCTGCTGATC **SdaI (1264)**  
213▶ A G F R E L L S E V L E P G P L P A S L P P A G E Q L L P D L L I  


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1301 AGCCCCACATGTGCTCTGACCGACCTGGAGATCAAGTTTTCAGTACCGGGGGCGCCACCCCGGGCCCTCACCATCAGCAACCCCATGGCTGCCCGG **XmaI (1361)** **NcoI (1386)**  
247▶ S P H M L P L T D L E I K F Q Y R G R P P R A L T I S N P H G C R  
1401 TCTTCTACAGCCAGCTGGAGGCCACCCAGGAGCAGGTGGAAGCTTTCGGCCCCATAAGCTGGAGCAAGTGCCTTCCCGAGCCCTGAGGACATCCCGAG **NcoI (1386)**  
280▶ L F Y S Q L E A T Q E Q V E L F G P I S L E Q V R F P S P E D I P S  


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1501 TGACAAGCAGCGCTTCTACACGAACAGCTGCTGGATGTCTGGACCGGGCTCATCTCCAGCTACAGGGCCAGGACCTTTATGCCATCCGCTGTGT **Eco47III (1508)** **SacII (1545)**  
313▶ D K Q R F Y T N Q L L D V L D R G L I L Q L Q G Q D L Y A I R L C  


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1601 CAGTGAAGGTGTTCTGGAGCGGCCTTGTGCCTCAGCCCATGACTCATGCCCAACCCCATCCAGCGGGAGGTCAAGACCAAGCTTTTCAGCCCTGGAGC **BsrBI (1617)** **HindIII (1681)**  
347▶ Q C K V F T W S G P C A S A H D S C P N P I Q R E V K T K L F S L E  
1701 ATTTTCTCAATGAGCTCATCTGTTCCAAAAGGCCAGACCAACCCACCCTTCGAGATCTTCTTCTGCTTTGGGGAAGAATGGCCTGACCGCAA **BsrBI (1617)**  
380▶ H F L N E L I L F Q K G Q T N T P P P F E I F F C F G E E W P D R K  


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1801 ACCCGAGAGAAGAAGCTCATTACTGTACAGGTGGTGCCTGTAGCAGCTCGACTGCTGCTGGAGATGTTCTCAGGGGAGCTATCTTGGTCAGCTGATAGT **BsrGI (1824)**  
413▶ P R E K K L I T V Q V V P V A A R L L L E M F S G E L S W S A D S  


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1901 ATCCGGCTACAGATCTCAAACCCAGACCTCAAAGACCGCATGGTGGAGCAATTCAAAGGAGCTCCATCACATCTGGCAGTCCCAGCAGCGGTTGCAGCCTG **BstAPI (1983)**  
447▶ I R L Q I S N P D L K D R M V E Q F K E L H H I W Q S Q Q R L Q P  


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2001 TGGCCCAGGCCCTCCTGGAGCAGGCTTGGTGTGGCCAGGGCCCTGGCCTATGCACCCAGCTGGCATGCAAGGATCCTATCCCTATGATGTGCCAGA **XcmI (2004)** **MscI (2034)** **SphI (2066)** **BamHI (2074)**  
480▶ V A Q A P P G A G L G V G Q G P W P M H P A G M Q G S Y P Y D V P D  


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2101 CTATGCTGGCTATCCATATGATGTTCTGATTATGCTGGATACCCTTATGATGTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGATAAGATACAT **NdeI (2114)** **NheI (2171)**  
513▶ Y A G Y P Y D V P D Y A G Y P Y D V P D Y A •  
2201 TGATGAGTTTGGACAACCACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGC  


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2301 AATAACAAGTTAACAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTG **HpaI (2309)** **MfeI (2320)**  


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2401 GTATGGAATCTAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGG **EcoRI (2405)**  
2501 GCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGGTTTGAAGTCTTTCATTCT

SspI (2644)      SwaI (2658)

2601 TTATGTTTTAAATGCACTGACCTCCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTA

2701 GGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAA

2801 GCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAGCAGT  
 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

2901 CAGGAGCATAGTCAGAGATGAGCTCTCGCACATGCCACAGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCAC  
 112 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 V

3001 AATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACA  
 79 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

3101 GCAGAGATGATCTCCCCAGTCTTGGTCCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCA  
 45 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 L

BspHI (3233)

BbsI (3229)

XmnI (3225)

3201 GCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTCATGATGGCCCTCCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGT  
 12 E L D Q Q S I N F T K M

AseI (3291)

3301 CAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTGGC

SpeI (3446)

3400 TCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATC

SnaBI (3574)

3499 CCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGG

NdeI (3679)

3599 AAAGTCCCATAAGGTCATGTACTGGCATAATGCCAGGCGGGCATTACCCTGATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGT

3699 ACTGCCAAGTGGGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCA

SdaI (3857)    PacI (3865)    BspLU11I (3875)

3799 ATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTACCCTAAGTTATGTAACGCTG C A G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G C  
 12 A A A A G G C C A G G A A C C G T A A A A A G G C C G T T G C T G C G T T T T C C A T A G G C T C C G C C C C C T G A C G A G C A T C A C A A A A T C G A C G C T C A A G T C A G A G G T G

3897 AAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGCGCTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTG

3997 GCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCC

ApaLI (4189)

4097 GCCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTGCTCCAAGCTGGGCTGTGTGCAGC

4197 AACCCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGG

4297 TAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGC

4397 GCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTTGTGTTGCAAGCAGC

4497 AGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGT

EagI (4625)

PacI (4605)    SwaI (4614)    NotI (4624)

4597 CATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACA

4696 TACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA