



PvuI (7)  
SgfI (6) MfeI (82)  
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA  
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGTGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC  
Psp1406I (203) HindIII (245) Bsu36I (291)  
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACCGCGCCCGCCCTACCTGAGGCC  
301 GCCATCCACGCCGGTTGAGTCGGCTTTCGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC  
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT  
AgeI (552) BspHI (560)  
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGTCATCATGAATGAGGCCAAGGTGAAGGAGACGCTGCCGGCGCTG  
601 TGGGGCCAGCGGGATGAGTGTGGCCGTCTGCAGTATGCCCTCACCTGCCTGCGGAAGGTGACAGGCTGGGAGGGGAGCACAAGGAGGACTCCAGTTGG  
130▶ G A S G D E C G R L Q Y A L T C L R K V T G L G G E H K E D S S W  
701 AGTTCATTGGATGCGCGCGGAAAGTGGCTCAGGGCCTTCCACGGACACCCTCTCAGCAGCCAGCCTGCCCTGGCCCCAGGGAGCTCCAGCTGGGCA  
47▶ S S L D A R R E S G S G P S T D T L S A A S L P W P P G S S Q L G  
Bsp120I (819)  
801 GAGCAGGCAACAGCGCCAGGGCCACGCTCCATCTCCGTGTGAGCTCTGCCCGCCTCAGACTCCCCACCCCCAGCTTCAGTGAGGGCCTCTCAGACAC  
80▶ R A G N S A Q G P R S I S V S A L P A S D S P T P S F S E G L S D T  
901 CTGTATTTCCCCTGCAGCCAGCGGGCGGCTGACCCCTGCTGACAGCTTTCATCACCCCGCCACCACCCAGCTGCGAGCGGCACACCAAGCTG  
113▶ C I P L H A S G R L T P R A L H S F I T P P T T P L R R H T K L  
1001 AAGCCACCACGGACGCCCGCCAGCCAGCGCAAGGTCTTCCAGCTGCTGCCAGCTTCCCCACACTCACCCGGAGCAAGTCCCATGAGTCTCAGCTGG  
147▶ K P P R T P P P P S R K V F Q L L P S F P T L T R S K S H E S Q L  
BamHI (1147) EcoRV (1171)  
1101 GGAACCGCATTGATGACGTCTCCTCGATGAGGTTTGTCTCTCGCATGGATCCCACAGATGGTACGGAGGGATATCGGGCTGTCCGTTGACGCACAGGTT  
180▶ G N R I D D V S S M R F D L S H G S P Q M V R R D I G L S V T H R F  
BbrPI (1231) BstAPI (1268)  
1201 CTCCACCAAGTCTGGCTGTGCGAGGTCTGCCAGTGTGCCAGAAGCATGATATTTGGAGTGAAGTGAAGCATTCAGGTTGAAGTGTCAACAACAAA  
213▶ S T K S W L S Q V C H V C Q K S M I F G V K C K H C R L K C H N K  
1301 TGTACCAAGAAGCCCTGCCTGTAGAATATCCTTCTGCCACTAACTCGGCTTCGGAGGACAGAATCTGTCCCCTCGGACATCAACAACCCGGTGGACA  
247▶ C T K E A P A C R I S F L P L T R L R R T E S V P S D I N N P V D  
1401 GAGCAGCCGAACCCATTTTGAACCCCTCCCCAAAGCACTGACAAAGAAGGAGCACCTCCGGCCATGAATCACTGGACTCAGCAGCAACCCCTTCTC  
280▶ R A A E P H F G T L P K A L T K K E H P P A M N H L D S S S N P S S  
SgrAI (1523)  
1501 CACCACCTCTCCACACCCTCTCACCGGCGCCCTTCCGACATCATCCAACCATCCAGCGCCACCAGCCCCCAACCCCTCACCTGGCCAGCGGGAC  
313▶ T T S S T P S S S P A P F P T S S N P S S A T T P P N P S P G Q R D  
1601 AGCAGGTTCAACTTCCAGCTGCCTACTTCACTCATATAGACAGCAGTTTATCTTTCCAGTGCCATCTGCTGGCCATTGCTGGAATGCCTCCTTATTG  
347▶ S R F N F P A A Y F I H H R Q Q F I F P V P S A G H C W K C L L I  
BsrBI (1753) Acc65I (1774)  
1701 CAGAAAGTTTAAAGGAAAACGCTTTCAACATTTAGCCTTTGCACACGCAGCCCCGCTCCCTGAAGCTGCCGACGGTACCCGGCTCGATGACCAGCCGAA  
380▶ A E S L K E N A F N I S A F A H A A P L P E A A D G T R L D D Q P K  
1801 AGCAGATGTGTTGAAGCTCACGAAGCGGAGGTGAGGAGCCAGAGGCTGGCAAGTCAGAGGCAGAAGACGATGAGGACGAGGTGGACGACTTGCAGGAC  
413▶ A D V L E A H E A E A E E P E A G K S E A E D D E D E V D D L P S  
Bsp120I (1917)  
1901 TCTCGCCGGCCCTGGCGGGGCCCATCTCTCGCAAGGCCAGCCAGACCAGCGTGTACCTGCAGGAGTGGGACATCCCCTTCGAGCAGGTAGAGCTGGGGC  
447▶ S R R P W R G P I S R K A S Q T S V Y L Q E W D I P F E Q V E L G  
NotI (2036)  
SacII (2034)  
SfiI (2014) ApaLI (2029)  
2001 AGCCCATCGGGCAGGGCCGCTGGGGCCGGGTGCACCGCGCCGCTGGCATGGCGAGGTGGCCATTGCTGCTGGAGATGGACGGCCACAACCAGGACCA  
480▶ E P I G Q G R W G R V H R G R W H G E V A I R L L E M D G H N Q D H  
2101 CCTGAAGCTCTTCAAGAAAGAGGTGATGAACTACCGGCAGACGCGCATGAGAAGCTGGTGCTTTCATGGGGCCTGCATGAACCCGCCCACTGGCC  
513▶ L K L F K K E V M N Y R Q T R H E N V V L F M G A C M N P P H L A  
SandI (2246)  
2201 ATTATCACCAGCTTCTGCAAGGGCGGACGTTGCACTCGTTTGTGAGGGACCCCAAGACGCTCTGGACATCAACAAGACGAGGCAAATCGCTCAGGAGA  
547▶ I I T S F C K G R T L H S F V R D P K T S L D I N K T R Q I A Q E  
EcoRV (2315) BglII (2346)  
2301 TCATCAAGGGCATGGGATATCTTCATGCCAAGGGCATCGTACACAAAGATCTCAAATTAAGAACGCTTCTATGACAACGGCAAGGTGGTATCACAGA  
580▶ I I K G M G Y L H A K G I V H K D L K S K N V F Y D N G K V V I T D  
2401 CTTCCGGCTGTTTGGGATCTCAGGCGTGGTCCGAGAGGGACGGCGTGAGAACCAGCTAAAGCTGTCCACGACTGGCTGTGCTATCTGGCCCTGAGATT  
613▶ F G L F G I S G V V R E G R R R E N Q L K L S H D W L C Y L A P E I  
XmaI (2515) NsiI (2564)  
2501 GTACGCGAGATGACCCCCGGGAAGGACGAGGATCAGCTGCCATTCTCAAAGCTGCTGATGTCTATGCATTTGGGACTGTTTGGTATGAGCTGCAAGCAA  
647▶ V R E M T P G K D E D Q L P F S K A A D V Y A F G T V W Y E L Q A

**PshAI (2679)**

2601 GAGACTGGCCCTTGAAGAACCAGGCTGCAGAGGCATCCATCTGGCAGATTGGAAGCGGGGAAGGAATGAAGCGTGTCTGACTTCTGTGAGCTTGGGGAA  
680▶ R D W P L K N Q A A E A S I W Q I G S G E G M K R V L T S V S L G K  
2701 GGAAGTCAGTGAGATCCTGTCCGCTGCTGGGCTTTCGACCTGCAGGAGAGACCCAGCTTTCAGCCTGCTGATGGACATGCTGGAGAACTTCCAAGCTG  
713▶ E V S E I L S A C W A F D L Q E R P S F S L L M D M L E K L P K L

**NheI (2864)**

2801 AACCGCGGCTCTCCACCTGGACACTTCTGGAAGTCAGCTGAGTTGTAGGCTGGCTGCCTTGTCTAGCTGGCCAGACATGATAAGATACATTGATGAG  
747▶ N R R L S H P G H F W K S A E L •

2901 TTTGGACAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAAC

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**HpaI (3002)**    **MfeI (3013)** **EcoRI (3098)**

3001 AAGTTAAACAACAATTGCATTCATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGA  
3101 ATTCTAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTG  
3201 CCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGCTAGCTCTTCAATTTCTTTATGTT

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**SspI (3337)**    **SwaI (3351)**

3301 TTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAA  
3401 TCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCT  
3501 TCTAGCTTTAGTTCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTATCTCAATGAGCACAAAGCAGTCAGGAGC  
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

**BstXI (3641)**

3601 ATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTG  
110▶ 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 I T  
3701 TCAAAGTCCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGA  
76▶ 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 A S I  
3801 TGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTCTTGTGTCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAG  
43▶ 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

**AseI (3984)**

3901 ATCTCTGCTGAGAGATGTTGAAGTCTTTCATGGTGGCCCTCTATAGTGTGATTATACTATGCGGATATACTATGCGGATGATTAATTGTCAAACA  
10▶ D Q Q S I N F T K M  
4001 GCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTGCGTCAATGGG

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**SpeI (4139)**

4101 GCGGAGTTGTTACGACATTTTGGAAAGTCCCCTGTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCCTGAGT

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**SnaBI (4267)**

4201 CAAACCGTATCCACGCCATTGATGTACTGCCAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCCA

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**NdeI (4372)**

4301 TAAGTTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCAATGAGGGGCGTACTTGGCATATGATACACTTGTACTGCCAAG  
4401 TGGCAGTTTACCCTAAATACTCCACCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATTTGACGTCAATGGGCGGG

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**PacI (4558)**    **BspLU111 (4568)**

4501 GGTCGTTGGGCGTCCAGCAGGCGGGCCATTTACCCTAAGTTATGTAACGCCTGCAGGTTAAATAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGG  
4601 AACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGGAAACCCGA  
4701 CAGGACTATAAAGATACCAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCC

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**ApaLI (4882)**

4801 TTCGGAAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTT  
4901 CAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTGTTAGTCCAAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTA  
5001 GCAGAGCGAGGTATGTAGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGTGAA  
5101 GCCAGTTACCTTCGAAAAAGAGTTGGTAGCTTGTATCCGGCAAACAAACCCGCTGGTAGCGGTGTTTTTTTGTGTTGCAAGCAGCAGATTACGGC

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**PacI (5298)**

5201 AGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTT

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**SwaI (5307)**    **NotI (5317)**

5301 AATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTATTTTTCATTACATCTGTGTGGTTTTTTGTGTGAATCGTAACATAACGCTCTCCAT  
5401 CAAAAACAAACGAAACAAACAAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGACGGTCCAGAACATTTCTCTATCGAA