



PvuI (7)
SgfI (6)
1 GGATCTGCATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAAGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)**
201 GTGAACGTTCTTTTTTCGAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTACCGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

BstEII (555)
AgeI (552)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGTCACCATTGGCTTTCTCTGTGGTCTTCATCCAGCCTTCCTCCT
601 GGCAGTGTCTCCTGAGGGCATCCCGAAGCGAAGTCTTGAGGAGCCTTTACCATTGACTCCTGAGATACATAAAGTTTCTTTTCAATTGAAACTTCAA
13▶ A V L S L R A S R S E V L E E P L P L T P E I H K V S F Q L K L Q
701 GAAGTGAATTTAGAATGGACTGTCCAGCCCTTACTCATGAAGAATTAACATGATATTTAGATAGAGATCAGTAGACTGAACATATCCAACACCATCT
47▶ E V N L E W T V P A L T H E E L N M I F Q I E I S R L N I S N T I

BspHI (735) **BstXI (794)**
801 GGTGGAGAATTATAGCACCACTGTGAAGCGTGAAGAAGTGTGCGTTGGAAGTGGACGTGATATCCCTTTGGAGTGTGTCAAACATTTTATAAGAAT
80▶ W V E N Y S T T V K R E E A V R W N W T S D I P L E C V K H F I R I
901 CAGGGCTCTGGTAGATGACACCAAGTCCCTTCCACAGATTTCTGGGCAACTGGAGTTCCTGAAAGAAGTAAATGCAAAGTTTCCGTTGAACTGAT
113▶ R A L V D D T K S L P Q S S W G N W S S W K E V N A K V S V E P D
1001 AAATCATTAATATTTCTAAAGACAAAGTGTGGAAGAAGGCTCCAATGTCACCATCTGTCTGATGTATGGGCAGAATGTATATAATGTATCTGTAAAGT
147▶ K S L I F P K D K V L E E G S N V T I C L M Y G Q N V Y N V S C K

EcoRV (862)
1101 TGCAAGATGAGCCAATCCATGGAGAACAACCTGATCCACCGTGCATTATTAATAAATGAACAATGTAGTTTTCTTAGTGACACAGGGACAAACATCAA
180▶ L Q D E P I H G E Q L D S H V S L L K L N N V V F L S D T G T N I N

XhoI (1261)
1201 TTGTCAAGCCACGAAGGGTCTAAAAGAATATTTGGTACTGTTCTTTGTCTCGAAAGTGCCTGAGGAACTAAGAATGTTTCTGTGAAACCCGAGAC
213▶ C Q A T K G P K R I F G T V L F V S K V L E E P K N V S C E T R D
1301 TTTAAGACTTTGGACTGTTACGGGAACCTGGGGTAGATACGACTTTGACTTGGCTAAACAAAGATTCCAAAACACTTTATGTGAACGTTCTCTA
247▶ F K T L D C S W E P G V D T T L T W R K Q R F Q N Y T L C E S F S
1401 AGAGATGTGAGGTTTCTAACTACAGGAACTCCTATACCTGGCAAATCACTGAAAGGCTCACAGGAAATGTATACTTTACTCTCACAGCTGAAAACCAACT
280▶ K R C E V S N Y R N S Y T W Q I T E G S Q E M Y N F T L T A E N Q L
1501 AAGAAAAGAAGTGTCAACATTAATTTAACCTGACCCATAGATTTACCAAAGGCTCCGACAGGACGTACCCTTAAATATAGGTGCTACAAAAGCC
313▶ R K R S V N I N F N L T H R V H P K A P Q D V T L K I I G A T K A

BspHI (1683)
1601 AACATGACTTGAAGGTTCACTCCCATGGAACAACACTACACACTTTTGTGTCAGGTTAAACTCCAATATGGAGGAGAAGTGATTTCATGAGCACAATGTTT
347▶ N M T W K V H S H G N N Y T L L C Q V K L Q Y G G E V I H E H N V

BamHI (1737)
1701 CTGTCCACATGAGCGCAAACACTCCTTTCAGTATCTGGATCCAGACACAAAGTACAAGGCTTTTGTGCGCTGTGCAAGTGCCAACTTCTGGAATG
380▶ S V H M S A N Y L F S D L D P D T K Y K A F V R C A S A N H F W K W

BbsI (1889)
1801 GAGCGACTGGACCAAAAAGAGTTGAGCACACCCGAGACTGCTCCCTCACAGGCTCTTGTATGTATGGAGACAAGTGTGGTCGGAGAATGGAAGACGCATT
413▶ S D W T Q K E F S T P E T A P S Q A L D V W R Q V W S E N G R R I
1901 GTGACTTTATTCTGGAAGCCACTATTAATAACACAGGCAATGGCAAATCATATCCTATAATATAGTTGTAGAAAATGAAGCCAAACCAACTGAGTCAG
447▶ V T L F W K P L L K S Q A N G K I I S Y N I V V E N E A K P T E S
2001 AACACTACTGTGTCTGGGACCAGCCCTCAGCACAAACCTGAGCCTTGACCTGCAACCTTACAAGATTCGCATCACAGCCAACAACAGCATGGGGGCATC
480▶ E H Y C V W A P A L S T N L S L D L Q P Y K I R I T A N N S M G A S

NsiI (2177)
2101 TCCTGAGTCTTGTATGGTCTTTCTAATGATTCTGGACACGAAGAGTCAAGGAAAAGACAATTAAGGTATAAAGGATGCATTCAATATTTCTTGGGAG
513▶ P E S L M V L S N D S G H E E V K E K T I K G I K D A F N I S W E

ApaLI (2240)
2201 CCCGATCTGGAGACACGATGGGCTATGTTGTGGACTGGTGTGCACATTCCCAGGACCAACGCTGTGATTTGCAGTGGAAAGACCTTGGTCCCAATACCA
547▶ P V S G D T M G Y V V D W C A H S Q D Q R C D L Q W K N L G P N T
2301 CAAGCACCACCATCACCTCAGATGATTTTAAACCAGGCGTCCGTTACAACCTCAGAATTTTTGAAAGTCTGTGGAACACAAAGCTCGGTTAGTAGAGAA
580▶ T S T T I T S D D F K P G V R Y N F R I F E R S V E H K A R L V E K

MscI (2488)
2401 ACAAAGAGGATACACCCAGGAAGTGGCTCCTTTGGTGAATCCAAAAGTGGAGATTCCTTACTCGACCCTAACCTCCTTCTGTTCTAAGATGGCCAGATTAT
613▶ Q R G Y T Q E L A P L V N P K V E I P Y S T P N S F V L R W P D Y

Acc65I (2531)
2501 GACAGCGACTTCCAGGCTGGTTTTATAAAAAGGTACCTCGTGTATGTGAAATCCAAGGAGATGCAAGTGAACCAACCTGGGAAAGGACCTCCTTCCAG
647▶ D S D F Q A G F I K G Y L V Y V K S K E M Q C N Q P W E R T L L P

2601 ATAATTCAGTCTCTGTAATACGACATCAATGGCTCAGAGACAAAGACACTACCCTGGAAAACCTTCAGCCAGAGTCCCTCTATGAGTTTTTCGTCAC
680▶ D N S V L C K Y D I N G S E T K T L T V E N L Q P E S L Y E F F V T

Eco47III (2710) **Psp1406I (2733)** **PstI (2779)**
2701 TCCGTACACCAGCGTGGCCAGGACCAATGAAACGTTCAAAAGGTCACAACCTCCAGATGCACGCTCCACATGCTGTCAGATCATACTACCCATG
713▶ P Y T S A G P G P N E T F T K V T T P D A R S H M L L Q I I L P M

2801 ACCCTCTGCGTCTTGCTCAGCATCATTGCTGCTACTGGAAAAGTCAGTGGGTGAAGGAGAAGTGCTACCCTGACATTCCCAATCCGTACAAGAGCAGCA
747▶ T L C V L L S I I V C Y W K S Q W V K E K C Y P D I P N P Y K S S

2901 TTCTGTCACTATAAAATCCAAGAAGATCCTCACTTAATAATGAATGTCAAAGACTGCATTCCAGATGTCCTTGAAGTGATAAAACAAAGCAGAAGGCAG
780▶ I L S L I K S K K N P H L I M N V K D C I P D V L E V I N K A E G S

DraIII (3005)
3001 CAAGACACAGTGTGAGGCTCTGGGAACTTCACATTGAAGATGTACCCACTAAGCCGCCAATCGTGCCAACAGAAAAGGATTCTCAGGGCCTGTGCC
813▶ K T Q C V G S G K L H I E D V P T K P P I V P T E K D S S G P V P

3101 TGCATCTTCTTTGAGAATTTACTTACGATCAGTCAGCTTTTACTCTGGTTCCCATGGCCTATTCCAGGTCCTTAAAAGACACAGCACACCAACTTG
847▶ C I F F E N F T Y D Q S A F D S G S H G L I P G P L K D T A H Q L

3201 GACTATTGGCTCCACCTAACAAGTTCAGAACGATTAAAAATGACTACATGAAGCCCTGGTCGAAAGTCCAAGTGAAGAACTAGCTTATTTATGT
880▶ G L L A P P N K F Q N V L K N D Y M K P L V E S P T E E T S L I Y V

3301 GTCACAGCTGGCTTACCATGTGCGGAGACAAGGACACGCTTGCACAGAACCACCCGTGCCAGTGCATGGTTCAGAGTATAAAAGCAAATGGTAGTT
913▶ S Q L A S P M C G D K D T L A T E P P V P V H G S E Y K R Q M V V

XmaI (3400)
3401 CCCGGAGCCTCGCATCACCTTCTCTGAAGGAGATAACAGCTTGACCTCAACGGTCTCTTAGGCCAAGGTGAACAGTAAACACCACGCAGCACAATA
947▶ P G S L A S P S L K E D N S L T S T V L L G Q G E Q •

MscI (3520) **NheI (3514)**
3501 AATGCACTCCACACGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAACCAACAACCTAGAAATGCAGTGAAAAAATGCTTTATTTGTGA

HpaI (3652)
3601 AATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGTGAATAAACAAGTTAAACAACAATTGCATTATTTTATGTTTCAGGTTTCAGGGGGAG

EcoRI (3748)
3701 GTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATTCATAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTAC
3801 TTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTTAAAG

SapI (3930)
3901 ATATAGTGTATTTTCCCAAGTTTGAAGTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAAT

SwaI (4001)
4001 AATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACT

4101 TAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTG
141▶ N R T Y K L P I L E E I T

SacI (4262) **BstXI (4291)**
4201 GTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGTCACATGCCACAGGGGCTGACCACCCTGA
126▶ T K 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

4301 TGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTC
93▶ S R 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

StuI (4426)
4401 AGCACAGACAGTGACCCTGCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAAGTCTTGGTCTGATGGCCGCCGACATGGTGCTTGTG
60▶ A C 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

BbsI (4572)
4501 TCCTCATAGAGCATGGTATCTTCTCAGTGGGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAG
26▶ D E 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

SacI (4691)
4601 TCGTATTACTATGCGGATATACTATGCGGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGC

SpeI (4789)
4701 TTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAA
4801 CAAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATG

SnaBI (4917)
4901 GTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGA

NdeI (5022)
5001 CGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGACTGCCAAGTGGGCAGTTTACCCTAAATACTCCACCATTGACGTCAATGGAAAGTCCC
5101 TATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGGCGGGTCTGTTGGCGGTGACCCAGGCGGGCCATTTACCCTAAGTTATGTAACG

PacI (5208)
PstI (5201)
SdaI (5200) **BspLU11I (5218)**

5201 CCTGCAGGTTAAITAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCC
5301 TGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGCCT
5401 TCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTT

ApaLI (5532)

5501 CGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCC
5601 GGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCT
5701 AACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAA
5801 CCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGA

EagI (5968)
PacI (5948) SwaI (5957) **NotI (5967)**

5901 CGCTCAGTGGAACGAAAACTACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAAATATCTTTATTTTCATTAC
6001 ATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGC
6101 AAGTGCAGGTGCCAGAACATTTCTATCGAA