



PvuI (7)
SgfI (6)
1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGTACTGGCTCCGCTTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCCTTCACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCTCCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

BspHI (566)
BspEI (558)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGCTCCGGACATCATGAATAATCAAAAAGTGGTAGCTGTGCTACT
1▶ M N N Q K V V A V L L

Eco47III (677)
601 GCAAGAGTGAAGCAAGTGTGGATCAGCTCTTGTGGAAGCGCCAGATGTGTCGGAAGAGGACAAGAGCGAGACCAGCGCTGCAGAGCTTTACTCCCC
11▶ Q E C K Q V L D Q L L L E A P D V S E E D K S E D Q R C R A L L P

Bsp120I (783)
701 AGCGAGTTAAGGACCCTGATCCAGGAGGCAAAGGAAATGAAGTGGCCCTTCGTGCCTGAAAAGTGGCAGTACAACAAGCCGTGGCCAGAGGACAAAA
45▶ S E L R T L I Q E A K E M K W P F V P E K W Q Y K Q A V G P E D K

Bsu36I (849)
801 CAAACCTGAAGGATGTGATTGGCGCCGGTTGCAGCAGTTACTGGCGTCCCTGAGGGCTCCATCCTCGCTCGGGACTGTGCGGCTGCGGCGGCTATTGT
78▶ T N L K D V I G A G L Q Q L L A S L R A S I L A R D C A A A A A I V

AgeI (911)
901 GTTCTTGGTGGACCGGTTCTGTATGGGCTCGAGTCTCTGAAAACCTTCTGCAGGTCGCCAAAGGTCTCCACAAGTTCAGCCAGCCAGCCCAATTGCC
111▶ F L V D R F L Y G L D V S G K L L Q V A K G L H K L Q P A T P I A
1001 CCGCAGGTGGTTATTTCGCAAGCCGAATCTCCGTGAACTCAGGAAAACCTTTAAAAGCAGAGTATATTCTGAGCAGTCTAATAAGCAACAATGGAGCAA
145▶ P Q V V I R Q A R I S V N S G K L L K A E Y I L S S L I S N N G A

Acc65I (1102) **Tth111I (1129)**
1101 CGGTACCTGGCTGTACAGAAATGAAAGTGACAAGGCTCTGGTGCAGTCGGTCTGTATACAGATCAGAGGGCAGATTCTGCAAAAGCTGGGGATGTGGTA
178▶ T G T W L Y R N E S D K V L V Q S V C I Q I R G Q I L Q K L G M W Y
1201 CGAAGCAGCAGAGTTAATATGGGCTCCATTGTAGGATATTTGGCACTTCTCAGCCGATAAAAAGGCGCTCCACGTCGCTAGGTATACTGGCAGAC
211▶ E A A E L I W A S I V G Y L A L P Q P D K K G L S T S L G I L A D

AseI (1354)
1301 ATCTTTGTTTCCATGAGCAAGAACGATTATGAAAAGTTTAAAAACAATCCACAATTAATTTGAGCCTGCTGAAGGAGTTTGACCACCATTGCTGTCCG
245▶ I F V S M S K N D Y E K F K N N P Q I N L S L L K E F D H H L L S

SapI (1446) **BsrBI (1444)** **BbrPI (1479)**
1401 CTGCAGAAGCCTGCAAGCTGGCAGCTGCCTTCAGTGCCTATACGCCGCTCTTCGTGCTCACAGCTGTGAATATCCGTGGCAGCTGTTTATTGCTCTACAG
278▶ A A E A C K L A A A F S A Y T P L F V L T A V N I R G T C L L S Y S

StuI (1556)
1501 TAGTTCAAATGACTGTCTCCAGAATTGAAAACTTACATCTGTGTGAAGCCAAAGAGCCTTTGAGATTGGCCTCCTACCAAGAGAGATGATGAGCCT
311▶ S S N D C P P E L K N L H L C E A K E A F E I G L L T K R D D E P

ApaLI (1657) **NotI (1671)**
1601 GTTACTGGAAAACAGGAGCTTACAGCTTTGTCAAAGCTGCTTTCGGTCTCACCACAGTGCACAGAAGGCTCCATGGGAGACAGGGACGGTCCATGCAG
345▶ V T G K Q E L H S F V K A A F G L T T V H R R L H G E T G T V H A
1701 CAAGTCAGCTCTGTAAGGAAGCAATGGGGAAGCTGTACAATTCAGCACTTCTCCAGAAGTCAAGACAGAGAAGCTCTGTCTCAAGAAGTTATGTCTGT
378▶ A S Q L C K E A M G K L Y N F S T S S R S Q D R E A L S Q E V M S V

HindIII (1833) **BglII (1855)**
1801 GATTGCCAGGTGAAGGAACATTTACAAGTTCAAAGCTTCTCAAATGTAGATGACAGATCTTATGTTCCCGAGAGTTTCGAGTGCAGTTGGATAAATCT
411▶ I A Q V K E H L Q V Q S F S N V D D R S Y V P E S F E C R L D K L
1901 ATCTTGATGGCAAGGGGATTTCCAAAAATCCTTGACACCTATTACAGCACCATACTTCGGTGTGTGAAGTATTTGAAAGTATTGTGAAAACAACA
445▶ I L H G Q G D F Q K I L D T Y S Q H H T S V C E V F E S D C G N N

ScaI (2077)
2001 AAAATGAACAGAAAGTGAACAAACAGGAGTCTGCATCACTGCTCTAAAAACAGAAATAAAAAACATAGATACTGTGAGTACTACTCAAGAAAAGCCACA
478▶ K N E Q K D A K T G V C I T A L K T E I K N I D T V S T T Q E K P H
2101 TTGTCAAAGAGACACAGGAATATCTTCTCCCTAATGGGTAAGAATGTTTCAGAGGAACTCAGAAGGGGAGGAAGGAGAACTGGACCCATTCTGATGCA
511▶ C Q R D T G I S S S L M G K N V Q R E L R R G G R R N W T H S D A
2201 TTTTCGAGTCTCCTGGATCAAGATGTGGAGACTGAGACTGAGCCTCGGACTCAGCAATGGTGGAGGAGCTGTTTCAACAAGTCTCTGAGTGGCAGCC
545▶ F R V S L D Q D V E T E T E P S D Y S N G E G A V F N K S L S G S
2301 AGACTTCCAGTGTGGAGCAACTTATCAGGGTTAGTTCCTCTGCAAGTGGGAGGAAGTGAATTATCACGTTGACGACAGGTCAGCCAGAAAAGAGCC
578▶ Q T S S A W S N L S G F S S S A S W E E V N Y H V D D R S A R K E P
2401 TGGCAAAGAACATCTGGTGGACACTCAGTGTCCACTGCCTTGTCTGAGGAGCTAGAGAATGACAGGGAAGGCAGAGCTATGCATTATTGCATTACAG
611▶ G K E H L V D T Q C S T A L S E E L E N D R E G R A M H S L H S Q

BspHI [m] (2502)

2501 CTTTCATGATCTCTCTCTTCAGGAACCCAACAATGACAAATTTGGAGCCTTCTCAAATCAGCCACAGCAACAGATGCCCTTGACACCCTTCTCGCCTCATA
645▶ L H D L S L Q E P N N D N L E P S Q N Q P Q Q Q M P L T P F S P H

XbaI (2637)

SmaI (2679)

2601 ATACCCCAGGCATTTTCTTGCCCTGGTGCAGGGCTTCTAGAAGGAGCTCCAGAAGGTATCCAGGAAGTCAGAAATATGGGACCCAGAAATCTTCTGC
678▶ N T P G I F L A P G A G L L E G A P E G I Q E V R N M G P R N T S A

BbsI (2733)

BstXI (2753)

2701 TCACTCCAGACCCCTCATATCGTTCTGCTTCTGGTCTTCTGATTCTGGTAGGCCAAGAATATGGGCACACATCCTTCAGTCCAAAAAGAAGAAGCCTTT
711▶ H S R P S Y R S A S W S S D S G R P K N M G T H P S V Q K E E A F

2801 GAAATAATTGTTGAGTTTCCAGAAACCAACTGCGATGTCAAAGACAGGCAGGGGAAAGAGCAGGGGAGAAGAAATAGTGAAAGAGGCGCAGGCCCTACAT
745▶ E I I V E F P E T N C D V K D R Q G K E Q G E E I S E R G A G P T

2901 TTAAGCTAGTCCCTCTGGGTTGACCCAGAAGGAGAACAACAGAAAGCACTGAAGATGCACCTTAGACTTTACAGGGTCTGCACAATTTCTCTGGG
778▶ F K A S P S W V D P E G E T A A E S T E D A P L D F H R V L H N S L G

3001 AAACATTTCCATGCTGCCATGTAGTCTTCCACCCCTAATTGGCCTGTTCAAATCTGACTCCAGAAAAAGTGGTGGCCAGTCGCAGAGCAGGGCATC
811▶ N I S M L P C S S F T P N W P V Q N P D S R K S G G P V A E Q G I

3101 GACCCTGATGCCTCCACAGTGGATGAGGAGGGCAACTGCTGACAGCATGGATGTTCCCTGCACAAATGGGCACGGCTCTCATAGACTGTGCATTCTGA
845▶ D P D A S T V D E E G Q L L D S M D V P C T N G H G S H R L C I L

3201 GACAGCCGCTGGTCCAGAGGGCGGAGACCCCAATCTCTGTAAGCGGTAACATCCTTCCCTGTCTCAGCGAGGACTGCACTACCACAGAGGAAGG
878▶ R Q P P Q R A E T P N S S V S G N I L F P V L S E D C T T T E E G

3301 AAATCAGCCTGGAACATGCTAAACTGCAGCCAGAASCTCCAGTCTCCTCAGTGTGGTGGTCAAATCACCTGCATTTTCCAGTTTCTTCTGAGGGG
911▶ N Q P G N M L N C S Q N S S S S S V W W L K S P A F S S G S S E G

EcoRI (3420)

3401 GACAGCCCTTGGTCTATCTGAATTCAGTGGGAGTCTTGGGTTTATTGCCGGAAAGATGAGGAAAGAGATCCTTGAGGCTCGCACCTTGCAACCTG
945▶ D S P W S Y L N S S G S S W V S L P G K M R K E I L E A R T L Q P

3501 ATGACTTTGAAAAGCTGTTGGCAGGAGTGGGATGATTGGCTGTTTCCAGAGACTAGAGAATACGGGGGTTTTAAGCCAGTCAACTCCACCGAGCACA
978▶ D D F E K L L A G V R H D W L F Q R L E N T G V F K P S Q L H R A H

SspI (3617)

3601 TAGTGCTCTTTTGTAAATATTCAAAAAATCTGAAGTGTGGACGGCCAGGAACTATTGTCTATTTGGGGGACTACTTGACTGTGAAGAAAAAGGC
1011▶ S A L L L K Y S K K S E L W T A Q E T I V Y L G D Y L T V K K K G

3701 AGACAAAGAAATGCTTTTTGGGTTTCATCATCTTTCATCAAGAAGAAATCTGGGAGGTATGTTGGGAAAGACTATAAGGAGCAGAAGGGGCTCTGGCACC
1045▶ R Q R N A F W V H H L H Q E E I L G R Y V G K D Y K E Q K G L W H

3801 ACTTCACTGATGTGGAGCGACAGATGACCGCACAGCATGTGACAGAATTAACAAGAGACTCTATGAACAAAACATCCCACCCAGATATTCTACAT
1078▶ H F T D V E R Q M T A Q H Y V T E F N K R L Y E Q N I P T Q I F Y I

3901 CCCATCCADAATACTACTGATTTTAGAGGACAAGACAATAAAGGGATGTATCAGTGTGGAGCCTTACATACTGGGAGAATTTGAAAATTTGCAAATAAC
1111▶ P S T I L L I L E D K T I K G C I S V E P Y I L G E F V K L S N N

MseI (4050)

4001 ACGAAAGTGGTGAACAGAATACAAAGCCACAGAATATGGCTTGGCCTATGGCCATTTTCTTATGAGTTTTCTAATCATAGAGATGTTGTGGTTCGATT
1145▶ T K V V K T E Y K A T E Y G L A Y G H F S Y E F S N H R D V V V D

AgeI (4114)

BstEII (4110)

4101 TACAAGTTGGGTAACCGGTAATGAAAAGGACTCATCTACCTCACAGATCCCAGATTCACTCCGTTGATCAGAAAGTTTTCACTACCAATTTTGGAAA
1178▶ L Q G W V T G N G K G L I Y L T D P Q I H S V D Q K V F T T N F G K

4201 GAGAGGAATTTTACTTCTTTAATAACAGCATGTGAATGTAATGAAATCTGCCATCGTCTTTCTTGGACTAGACCTTCAATGGAGAAACCATGCACA
1211▶ R G I F Y F F N N Q H V E C N E I C H R L S L T R P S M E K P C T

MseI (4309)

NheI (4303)

4301 TAGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATG
1245▶ •

HpaI (4441)

4401 CTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCATTCATTTTATGTTTCAGTTCAGGGGGAGGTGTGGGAGGT

EcoRI (4537)

4501 TTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTT
4601 TCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTAT

SapI (4719)

SspI (4776)

SwaI (4790)

4701 TTTCCAAGTTTGAAGTCTTCTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAAATTCAGAAATAATTTAAATAC

4801 ATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAA

4901 GGAACCTTAATAGAAATGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAG
141▶ • N R T Y K L P I L E E I T T K V L

BstXI (5080)

5001 CTTGCCATTCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGTCTCTGCACATGCCACAGGGGTCACCACCTGATGGATCTGTCC
123▶ 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 R I S R D

5101 ACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCAATGGCAATGGCTTTCAGCAGACAGAG
89▶ 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 V T

StuI (5215)
5201 TGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGTTCCTCATAGAG
56 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 Y L

BbsI (5361)
5301 CATGGTGAATCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGGTGGCCCTCTATAGTGAGTCGTATTATAC
23 M T I K E T A V E V L E L D Q Q S I N F T K M

AseI (5423)
5401 TATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCTACTAAACGAGCTCTGCTTATATAGACC

SpeI (5578)
5501 TCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCCAT
5601 TGACGTCAATGGGGTGGAGACTTGGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCAAAACCGCATCATCATGGTAATAGCGAT

SnaBI (5706)
5701 GACTAATACGTAGATGTAAGTGGAAAGTCCATAAGGTCATGTAAGTGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGG

NdeI (5811)
5801 GGCGTACTTGGCATATGATACACTTGTACTGTAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTA

PacI (5997)
5901 CTATGGGAACATACGTCAATATTGACGTCAATGGGGGGGGTCTTGGGGCGTACGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTA

SdaI (5989)
6001 ATTAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAGGCCCGCTTGTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATC

BspLU11I (6007)
6101 ACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCC

6201 GACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTC

ApaLI (6321)
6301 GTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACAGC
6401 ACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTA
6501 CACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAACAAACCACCGCTGGT
6601 AGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGG

EagI (6757)
6701 ACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGT
6801 GGTTTTTTGTGTAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCAGTGCAGGTG
6901 CCAGAACATTTCTATCGAA