



PvuI (7)
SgfI (6) 1 GGATCTGGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGCTGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTCGCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTCCTGACCCCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

AgeI (552)
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACCTGAGATCACCGGTAGGAGGGCCACCATGGGGGCCGACGAGCCCGCGTCCGCT
601 GTCCCGGGGCCCCGCTGGGGCTGCTCTGCTGCTCCTGGCGGTGCTGGCCCCGGGTGGCGCCTCCCTGCGACTCCTGGACCACCGGGCGCTGGTCTGCT
111▶ V P G P L L G L L L L L L G V L A P G G A S L R L L D H R A L V C
701 CCCAGCCGGGGCTAAACTGCACGGTCAAGAATAGTACCTGCCTGGATGACAGCTGGATTACCCTCGAAACCTGACCCCTCCTCCCAAGGACCTGCA
44▶ S Q P G L N C T V K N S T C L D D S W I H P R N L T P S S P K D L Q

XhoI (894)
801 GATCCAGCTGCACTTTGCCACACCCAACAAGGAGACCTGTTCCCGTGGCTCACATCGAATGGACACTGCAGACAGACGCCAGCATCCTGTACTCAG
77▶ I Q L H F A H T Q Q G D L F P V A H I E W T L Q T D A S I L Y L E

Psp1406I (937)
901 GGTGCAGAGTTATCTGCTCCTGCAGCTGAACACCAATGAACGTTTGTGCGTCAGGTTTGTGTTTCTGTCCAACTGAGGCATCACACAGCGGGTGGCGTT
111▶ G A E L S V L Q L N T N E R L C V R F E F L S K L R H H H R R W R

BstEII (1043) **SandI (1081)**
1001 TTACCTTCAGCCACTTTGTGGTTGACCTGACCAGGAATATGAGGTGACCGTTACCACCTGCCAAGCCCATCCCTGATGGGGACCCAAACCACAGTC
144▶ F T F S H F V V D P D Q E Y E V T V H H L P K P I P D G D P N H Q S

BstEII (1142) **NsiI (1154)** **SandI (1177)**
1101 CAAGAATTTCTTGTGCTGACTGTGAGCACGCCAGGATGAAGGTAACACGCATGCATGAGCTCAGGCAGCCTGTGGGACCCCAACATCACCGTGGAG
177▶ K N F L V P D C E H A R M K V T T P C M S S G S L W D P N I T V E
1201 ACCCTGGAGGCCACCAGCTGCGTGTGAGCTTACCCTGTGGAACGAATCTACCATTACCAGATCCTGCTGACCAAGTTTCCGCACATGGAGAACCACA
211▶ T L E A H Q L R V S F T L W N E S T H Y Q I L L T S F P H M E N H
1301 GTTGCTTTGAGCACATGCACACATACCTGCGCCAGACAGGAGTTCCACAGCGATCCAACGTCACACTACTCTACGCAACTTAAAGGGTGTG
244▶ S C F E H M H H I P A P R P E E F H Q R S N V T L T L R N L K G C C
1401 TCGCCACCAAGTGCAGATCCAGCCCTTCTCAGCAGCTGCCTCAATGACTGCCTCAGACACTCCGCGACTGTTTCTGCCAGAAATGCCAGACTCCA
277▶ R H Q V Q I Q P F F S S C L N D C L R H S A T V S C P E M P D T P

BspEI (1508)
1501 GAACCAATTCGGACTACATGCCCTGTGGGTGACTGGTTCATCACGGGCATCTCCATCCTGCTGGTGGGCTCCGTCATCCTGCTCATCGTCTGCATGA
311▶ E P I P D Y M P L W V Y W F I T G I S I L L V G S V I L L I V C M

XmnI (1500) **BstXI (1555)**
1601 CCTGGAGCTAGCTGGGCTGAAAGTAAAAATACAGTGATGACACCAATACACCGATGGCCTGCGGCTGACCTGATCCCCCACCCTGAAGCC
344▶ T W R L A G P G S E K Y S D D T K Y T D G L P A A D L I P P P L K P

NheI (1607)
1701 CAGGAAGTCTGGATCATCTACTCAGCCGACCACCCCTCTACGTGGAGCTGGTCTGAAATTCGCCAGTTCCTGCTCACCGCTGCGGCACGGAAGTG
377▶ R K V W I I Y S A D H P L Y V D V V L K F A Q F L L T A C G T E V

Tth111I (1746)
1801 GCCCTGGACCTGCTGGAAGAGCAGGCCATCTCGGAGGCAGGAGTCATGACCTGGTGGGCGCTCAGAAGCAGGAGATGGTGGAGAGCAACTCTAAGATCA
411▶ A L D L L E E Q A I S E A G V M T W V G R Q K Q E M V E S N S K I

BspHI (1843)
1901 TCGTCTGTGCTCCCGCGCACGCGCAAGTGGCAGGCGCTCCTGGGCCGGGGGCGCCTGTGCGGCTGCGCTGCGACCACGAAAGCCCGTGGGGGA
444▶ I V L C S R G T R A K W Q A L L G R G A P V R L R C D H G K P V G D

SnaBI (2064)
2001 CCTGTTCACTGCAGCCATGAACATGATCCTCCCGACTTCAAGAGGCCAGCTGCTTCGGCACCTACGTAGTCTGCTACTTACGCGAGGTCAGCTGTGAC
477▶ L F T A A M N M I L P D F K R P A C F G T Y V V C Y F S E V S C D

BsrBI (2139)
2101 GGCAGCTCCCCGACCTGTTCCGGCGGGCGCCCGGTACCCGCTCATGGACAGGTTCCAGGAGGTGACTTCCGCATCCAGGACCTGGAGATGTTCCAGC
511▶ G D V P D L F G A A P R Y P L M D R F E E V Y F R I Q D L E M F Q

Acc65I (2134)
2201 CGGGCCGCATGCACCGCTAGGGGAGCTGTGCGGGGACAACCTACTGCGGAGCCCGGGCGGCAGGAGCTCCGCGCCGCTGGACAGGTTCCGGGACTG
544▶ P G R M H R V G E L S G D N Y L R S P G G R Q L R A A L D R F R D W

SphI (2206) **SrfI (2251)**
2301 GCAGGTCCGCTGCTCCGACTGGTTCGAATGTGAGAACCTCTACTCAGCAGATGACCAGGATGCCCGTCCCTGGACGAAGAGGTTTGGAGAGCCACTG
577▶ Q V R C P D W F E C E N L Y S A D D Q D A P S L D E E V F E E P L

BstBI (2322)
2401 CTGCTCCGGAAACCGGCATCGTGAAGCGGGCGCCCTGGTGCAGCAGCTGGCTCCAGGCCTGCTGGCCATAGACCCGCTGGTCCGGGAGGAAGGAG
611▶ L P P G T G I V K R A P L V R E P G S Q A C L A I D P L V G E E G

SfiI (2594)
2501 GAGCAGCAGTGGCAAAGCTGGAACCTCACCTGCAGCCCCGGGTGAGCCAGCGCCGAGCCCTCCACACCCTGGTGTCTGCGCGAGAGGGGGCCCT
644▶ G A A V A K L E P H L Q P R G Q P A P Q P L H T L V L A A E E G A L

SrfI (2692)
2601 GGTGGCCGCGGTGGAGCCTGGGCCCTGGCTGACGGTGCCGACGTCCGGCTGGCACTGGCGGGGAGGGCGAGGCTGCCCGCTGCTGGGCAGCCCGGGC
677▶ V A A V E P G P L A D G A A V R L A L A G E G E A C P L L G S P G
2701 GCTGGCGAAATAGCGTCTCTTCTCCCGTGGACCCGAGGACTCGCCCTTGGCAGCAGACCCCATGGCGTCTCTGACCTCCTTCCAGAGGACG
711▶ A G R N S V L F L P V D P E D S P L G S S T P M A S P D L L P E D
2801 TGAGGGAGCACCTCGAAGGCTTATGCTCTCGCTCTTGCAGCAGAGTCTGAGCTGCCAGGCCAGGGGGCTGCAGTAGACCCGCCATGGTCTCACAGA
744▶ V R E H L E G L M L S L F E Q S L S C Q A Q G G C S R P A M V L T D

BstAPI (2930)
2901 CCCACACACGCCCTACGAGGAGGAGCAGCGGCAGTGCAGTGCAGTGCAGGCTACATCTCCAGGAGCTCCCCGCAGCCCCGAGGGACTCACGGAA
777▶ P H T P Y E E E Q R Q S V Q S D Q G Y I S R S S P Q P P E G L T E

NgoMIV (3038) Bsu36I (3074)
3001 ATGGAGGAAGAGGAGGAAGAGGAGCAGGACCCAGGGAAGCCGGCCCTGCCACTCTCTCCGAGGACCTGGAGAGCCTGAGGAGCCTCAGCGGCAGCTGC
811▶ M E E E E E E E Q D P G K P A L P L S P E D L E S L R S L Q R Q L

AvrII (3171) MseI (3183)
3101 TTTTCCGCCAGCTGCAGAAGAACTCGGGCTGGGACACGATGGGGTTCAGAGTGCAGAGGGGCCAGTGCATGACCTAGGACTAGCTGGCCAGACATGATAAG
844▶ L F R Q L Q K N S G W D T M G S E S E G P S A •

3201 ATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAATAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATA

HpaI (3315) MfeI (3326)
3301 AGCTGCAATAAACAGTTAAACAACAACATTGCATTCAATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACA

EcoRI (3411)
3401 AATGTGGTATGGAATTCTAAAATACAGCATAGCAAACCTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCA
3501 TCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTCAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGTTTGAAGTACTAGCTCTTC

SspI (3650) SmaI (3664)
3601 ATTTCTTTATGTTTTAAATGCATGACCTCCACATTCCTTTTTAGTAAAAATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTT
3701 TTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCAATAATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGC
3801 AAGAAAGCGAGCTTCTAGCTTTAGTTTCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAA
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

BstXI (3954)
3901 AGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGAC
114▶ C D 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
4001 AGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTACGACAGACAGTGCACCTGCCAATGTAGGCCCTCAATG
81▶ 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 V R G I Y A E I
4101 TGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGTGTTGTCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCT
47▶ 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 M T I K E T A V E

BspHI (4239) BbsI (4235) XmnI (4231) AseI (4297)
4201 CCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGCATGCTATTATACTATGCCGATATACTATGCCGATGATT
14▶ V L E L D Q Q S I N F T K M
4301 AATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCGCTTATATAGACCTCCACCCTACACGCTACCGCCAT

SpeI (4452)
4401 TTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTCAAAAACAACTCCATTGACGTCAATGGGGTGGAGACTTGGAA

SnaBI (4580)
4501 AATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAG

NdeI (4685)
4601 TAGGAAAGTCCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCATTACCCTGCTATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTG
4701 ATGTACTGCCAAGTGGGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGAC

PacI (4871) SdaI (4863) BspLU11I (4881)
4801 GTCAATGGGCGGGGTGCTTGGGCGGTACCCAGGCGGGCCATTTACCCTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAAAAGGCCA
4901 GCAAAAGGCCAGGAACCGTAAAAAGCCGCTTGGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGG
5001 TGGCGAAACCCGACAGGACTATAAAGATACCAGGCTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGT

ApaLI (5195)
5101 CCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCAAGCTGGGCTGTGTGCA
5201 CGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGGTCCAAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACT
5301 GGTAAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCT
5401 CGGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTATCCGGCAACAAACACCCTGGTAGCGGTGGTTTTTTTGTGCAAGCA

5501 GCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACACGTTAAGGGATTTG

EagI (5631)

Pacl (5611) SwaI (5620) **NotI (5630)**

5601 GTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCCAATAAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTGTGTGAATCGTAACTAAC

5701 ATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAAGTGCCAGAGCCAGAACATTTCTCTATCGAA