



PvuI (7)
SgfI (6) 1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82) EcoNI (96)

101 GAGAAGGTGGCGCGGGTAAACTGGAAAAGTATGTCGTGTACTGGCTCCGCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTCACGCGCCGCGCCCTACCTGAGGCC
PvuII (239) **EcoNI (287)**
Bsu36I (291)

301 GCCATCCACGCCGGTTGAGTCGCGTTCTGCCGCTCCCGCTGTGGTGCCTCCTGAACTGCGTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGCGCTCCCTTGAGCCTACCTAGACTCAGCGGCTCTCCACGCTTTGCTGACCTGCTTCTCAACTCTACGCTTTTGTTCGTTT

KasI (535) **AgeI (552)** **BspHI (560)**
501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCTACCTGAGATCACCGGTATCATGAGTCATGTGGCAGTGAAAAATGCGCTCGGGCTGGA
1▶ M S H V A V E N A L G L D

XcmI (600)
601 CCAGCAGTTTGTGGCCTAGACCTGAACTCTTCAGATAATCAGAGTGGAGGAAGTACAGCCAGCAAAGGGCGCTATATTCCTCCTCATTTAAGGAACCGA
13▶ Q Q F A G L D L N S S D N Q S G G S T A S K G R Y I P P H L R N R
701 GAAGCTACTAAAGGTTTCTACGATAAAGACAGTTCAGGGTGGAGTTCTAGCAAAGATAAGGATGCGTATAGCAGTTTTGGATCTCGTAGTGATTCAAGAG
47▶ E A T K G F Y D K D S S G W S S S K D K D A Y S S F G S R S D S R
801 GGAAGTCTAGCTTCTTCAGTGATCGTGAAGTGATCAAGGGGAAGTTTGTGATGATCGTGGACGGAGTGATTACGATGGCATTGGCAGCCGTTGGTGCAG
80▶ G K S S F F S D R G S G S R G R F D D R G R S D Y D G I G S R G D R

DraIII (983)
901 AAGTGGCTTTGGCAAATTTGAACGTGGTGGAAACAGTCGCTGGTGTGACAAATCAGATGAAGATGATTGGTCAAACCACTCCACCAAGTGAACGCTTG
113▶ S G F G K F E R G G N S R W C D K S D E D D W S K P L P P S E R L

AseI (1033)
1001 GAACAGGAACTCTTTTCTGGAGCAACACTGGGATTAATTTTGAGAAATACGATGACATTCAGTTGAGGCAACAGGCAACAACCTGTCCTCCACATATTG
147▶ E Q E L F S G G N T G I N F E K Y D D I P V E A T G N N C P P H I

SphI (1185)
1101 AAAGTTTCAGTGATGTTGAGATGGGAGAAATATCATGGGAAACATTGAGCTTACTCGTTTACTCGCCCACTCCAGTGCAAAGCATGCTATTCTAT
180▶ E S F S D V E M G E I I M G N I E L T R Y T R P T P V Q K H A I P I

XcmI (1233) **PstI (1253)**
1201 TATCAAAGAGAAAAGAGACTTGATGGCTTGCCCAAACAGGGTCTGGAAAACACTGCAGCATTTCTGTTGCCCATCTTGAGTCAGATTTATTAGATGGT
213▶ I K E K R D L M A C A Q T G S G K T A A F L L P I L S Q I Y S D G

KasI (1343)
1301 CCAGGCGAGGCTTTGAGGGCCATGAAGGAAAATGGAAGGTATGGGCGCCGCAAACAATACCCAATCTCCTTGGTATTAGCACCAACGAGAGAGTTGGCAG
247▶ P G E A L R A M K E N G R Y G R R K Q Y P I S L V L A P T R E L A

BglIII (1403) **XmnI (1421)** **XbaI (1438)**
1401 TACAGATCTACGAGGAAGCCAGAAAATTTTCATACCGATCTAGAGTTCGTCCTTGCCTGGTTTATGGTGGTGCCGATATTGGTGCAGCAGATTCGAGACTT
280▶ V Q I Y E E A R K F S Y R S R V R P C V Y G G A D I G Q Q I R D L
1501 GGAACGTGGATGCCATTTGTTAGTACCCTCAGGCTCTAGTGGATATGATGAAAGAGAAAGATTGGATTAGACTTTTGCAAATACCTGGTGTTA
313▶ E R G C H L L V A T P G R L V D M M E R G K I G L D F C K Y L V L
1601 GATGAAGCTGATCGGATGTTGGATATGGGGTTGAGCCTCAGATTCGTAGAATAGTCGAACAAGATACTATGCCTCCAAAGGGTGTCCGCCACTATGA
347▶ D E A D R M L D M G F E P Q I R R I V E Q D T M P P K G V R H T M

Bsu36I (1717)
1701 TGTTTGTACTTTTCTAAGGAAATACAGATGCTGGCTCGTATTTCTTAGATGAATATATCTTCTTGGCTGTAGGAAGAGTTGGCTCTACCTCTGA
380▶ M F S A T F P K E I Q M L A R D F L D E Y I F L A V G R V G S T S E
1801 AAACATCACACAGAAAGTAGTTTGGGTGGAAGAATCAGACAAACGGTCATTTCTGCTTGACCTCCTAAATGCAACAGGCAAGGATTACTGACCTTAGTG
413▶ N I T Q K V V W V E E S D K R S F L L D L L N A T G K D S L T L V

NcoI (1974)
1901 TTTGTGGAGACAAAAAGGGTGCAGATTCTCTGGAGGATTTCTTATACCATGAAGGATACGCATGTACCAGCATCCATGGAGACCGTTCTCAGAGGGATA
447▶ F V E T K K G A D S L E D F L Y H E G Y A C T S I H G D R S Q R D

EcoO109I (2006) **BsrBI (2022)** **BspLU11I (2094)**
2001 GAGAAGAGGCCCTTACCAGTTCCGCTCAGGAAAAAGCCCAATTTTAGTGGCTACAGCAGTAGCAGCAAGAGGACTGGACATTTCAAATGTGAAACATGT
480▶ R E E A L H Q F R S G K S P I L V A T A V A A R G L D I S N V K H V

BsrGI (2136) **BsiWI (2152)**
2101 TATCAATTTTACTTCCAAAGTATGATTTGAAGAATATGTACATCGTATTGGTCTGACGGGACGTGTAGGAAACCTTGGCCTGGCAACCTCATTCTTTAAC
513▶ I N F D L P S D I E E Y V H R I G R T G R V G N L G L A T S F F N

SspI (2212)
2201 GAGAGAACATAAATATTACTAAGGATTTGTTGGATCTTCTTGTGAACTAAACAAGAAGTGGCGTCTTGGTTAGAAAACATGGCTTATGAACACCACT
547▶ E R N I N I T K D L L D L L V E A K Q E V P S W L E N M A Y E H H
2301 ACAAGGGTAGCAGTCGTGGACGTTCTAAGAGTAGCAGATTTAGTGGAGGGTTTGGTGCAGAGACTACCGACAAGTAGCGGTGCCAGCAGTTCCAGCTT
580▶ Y K G S S R G R S K S S R F S G G F G A R D Y R Q S S G A S S S S F

MscI (2439)
2401 CAGCAGCAGCCGCGCAAGCAGCAGCCGAGTGGCGGAGGTGGCCACGGTAGCAGCAGAGGATTTGGTGGAGGTGGCTATGGAGGCTTTTACAACAGTGAT
613▶ S S S R A S S S R S G G G G H G S S R G F G G G G Y G G F Y N S D

MseI (2590)

BstEII (2566) **NheI (2584)**

2501 GGATATGGAGGAAATTATAACTCCAGGGGTTGACTGGTGGGTAAGTACTGAGCCTGCTTTGCAGTAGGTCACCTGCCAAACAAGCTAGCTGGCCAGACA
647▶ G Y G G N Y N S Q G V D W W G N •

2601 TGATAAGATACATTGATGAGTTTGGACAAACCAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAAC

HpaI (2722) MfeI (2733)

2701 CATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCAATTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAC

EcoRI (2818)

2801 CTCTACAAATGTGGTATGGAATTCAAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGC

2901 ATAGGCATCAGGGGCTGTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGTTTGAACTA

SapI (3000) SspI (3057) SmaI (3071)

3001 GCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTGTAGAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAA

EcoO109I (3132)

3101 ATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATT

3201 GGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGGAGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATG
141▶ • N R T Y K L P I L E E I T T K V L K G N M E I

SacI (3332) **BstXI (3361)**

3301 AGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGTGACCACCCTGATGGATCTGTCCACCTCATCAGAGTAGGGGT
116▶ L V F 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

StuI (3496)

3401 GCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGGC
83▶ 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 V R G I Y A

3501 CTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTGTCCTCATAGAGCATGGTATCTTCTCAGTG
50▶ 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 M T I K E T

BspHI (3646)

BbsI (3642)

XmnI (3638)

3601 GCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCC
16▶ A V E V L E L D Q Q S I N F T K M

AseI (3704) SacI (3761)

3701 GATGATTAATTGTCAAACAGCGTGATGGCGTCTCCAGCTTATCTGACGGTTCACATAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTAC

SpeI (3859)

3801 CGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAACCTCCATTGACGTCAATGGGGTGGAG

SnaBI (3987)

3901 ACTTGAAATCCCCGTGAGTCAAACCGCTATCCAGCCCATTTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAC

NdeI (4092)

4001 TGCCAAGTAGGAAAGTCCATAAAGTCACTGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGAT

4101 ACACTTGATGACTGCCAAGTGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAT

PacI (4278)

PstI (4271)

SdaI (4270) BspLU11I (4288)

4201 TATTGACGTCAATGGGCGGGGTCGTTGGGCGTCCAGCAGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCAA
4301 AAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAG
4401 TCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGGA
4501 TACCTGTCCGCTTTCTCCCTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGCT

ApaLI (4602)

4601 GTGTGCACGAACCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGGTCCAAACCGGTAAGACACGACTTATCGCCACTGGCAGC

4701 AGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTT

4801 GGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAACAACCCCGTGGTAGCGGTGGTTTTTTTGTTT

4901 GCAAGCAGCAGATTACCGCGAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGG

EagI (5038)

PacI (5018) SwaI (5027) **NotI (5037)**

5001 GATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGT
5101 AACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCG
5201 AA