



PvuI (7)
SgfI (6)
EcoNI (96)

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
 101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Bsu36I (291)

Psp1406I (203)
PvuII (239)
EcoNI (287)

201 GTGAACGTTCTTTTTCGCAACGGGTTTGGCCGAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACCGCGCCCGCCCTACCTGAGGCC
 301 GCCATCCACGCGGTTGAGTGCCTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

KasI (535)
AgeI (552)
SphI (560)

501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCGCTACCTGAGATCACCGGTCAGCATGCTGAGAACTTGTTCGGAGGAGACTTTTCTCTTG
1▶ M L R N L F R R R L F S C

EcoRI (659)

601 TCCTACAAAATACTACTTTATGCTCCTTGTCTCTTTAATTACCTTCTGTGTTTAAAGAATTCATCAGAAGCCTGAATTTTTIAGTGTGACACACTTG
13▶ P T K Y Y F M L L V L S L I T F S V L R I H Q K P E F F S V R H L

BstEII (754)
HindIII (781)

701 GAGCTGGCTGGAGATGATCCTTACAGCAATGTTAATTGCACCAAGATTTACAGGGTGAAGGATCCAGAAGGTTGAGATACTAACAG
47▶ E L A G D D P Y S N V N C T K I L Q G D P E E I Q K V K L E I L T

801 TGCAATTCAGAAGCGCCGAGGTGGACACCCATGACTACATAAACATGACCCGACTGTGCCTTTTCATCAGGACAGCAATATATCGTGGAGCC
80▶ V Q F K K R P R W T P H D Y I N M T R D C A S F I R T R K Y I V E P

Bsu36I (978)

901 CCTACTAAAGAAGAGGTAGGCTTTCAATTGCATATTCATTGTGGTTCATCATAAGATTGAAATGCTTGACAGGCTCCTGAGGGCCATCTATATGCCT
113▶ L T K E E V G F P I A Y S I V V H H K I E M L D R L L R A I Y M P

BstXI (1097)

BbrPI (1018)
SacII (1052)
MscI (1094)

1001 CAGAATTTCTACTGCATTACGTTGGACAGAAAAGCAGAGGAATCCTTTTTAGCCGCGGTGCAGGGCATCGCATCCTGCTTTGATAATGCTTTGTGGCCA
147▶ Q N F Y C I H V D R K A E E S F L A A V Q G I A S C F D N V F V A

BsrGI (1169)

EcoO109I (1163)
ScaI (1193)

1101 GCCAGTTGAGAGTGTGTTTATGCGTCTGGAGTCCGGTTAAAGCAGACCTCACTGCATGAAGGACCTGTACAGAATGAATGCAAACCTGGAAGTACTT
180▶ S Q L E S V V Y A S W S R V K A D L N C M K D L Y R M N A N W K Y A L

1201 GATCAATCTGTGGTATGGATTTCCCTATTAACCACTGGAAATGTGAGGAGCTCAAGTGTCCACAGCGGAAAAACAACCTGGAACCTGAGAAG
213▶ I N L C G M D F P I K T N L E I V R K L K C S T A E N N L E T E K

1301 ATGCTCCCAACAAGGAAGAGATGAAAAAAGATACGCGTGTGCGATGGGAAGCTGACCAACACTGGGATAGTCAAAGCACCGCCCACTCAAAA
247▶ M P P N K E E R W K K R Y A V V D G K L T N T G I V K A P P P L K

Spl (1471)

XmnI (1468)

1401 CTCCTCTTTTTCAGGCAGTGCCTACTTCTGTTGCTACTAGGGAATATGTAGGCTACGTGCTGGAAAATGAAAATATTCAAAGTTGATGGAATGGGCACA
280▶ T P L F S G S A Y F V V T R E Y V G Y V L E N E N I Q K L M E W A Q

BamHI (1544)

1501 GGACACATACAGCCAGATGAGTTCCTCTGGGCCACCATCAAAGGATCCAGAAAGTCCCTGGTCTTTCCCTCAAGCAACAAGTATGACTTGTGAGAC
313▶ D T Y S P D E F L W A T I Q R I P E V P G S F P S S N K Y D L S D

BstBI (1636)

ScaI (1631)
BbrPI (1687)

1601 ATGAATGCCATTGCTAGGTTTGTCAAGTGGCAGTACTTCAAGGCGATGTTTCCAATGGTGCCCTTATCCACCGTGCAGTGGAGTCCACGTGCGCTCTG
347▶ M N A I A R F V K W Q Y F E G D V S N G A P Y P P C S G V H V R S

BbsI (1705)
SalI (1777)
XcmI (1790)

1701 TGTGCGTCTTCGGAGCTGGTACTGAGCTGGATGCTGCGCCAACACCACCTTTTGGCAATAAGTTTACATAGATGTCGACCCCTTTGCCATCCAGTG
380▶ V C V F G A G D L S W M L R Q H H L F A N K F D I D V D P F A I Q C

MscI (1896)

BsaBI (1804)
Eco47III (1848)
NheI (1890)

1801 TTTGGATGAGCATCTGAGGCTAAAGCCCTGGAGAAGTTAGAACACTAAGCGCTGCTGGCAGCCCTGGGGAAGATAAGGTTGCTCAAACCTGCTAGCTGGC
413▶ L D E H L R R K A L E N L E H •

1901 CAGACATGATAAGATACATTGATGAGTTTGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATT

HpaI (2028)

2001 TGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACATTGCATTCAATTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTTTAAAGCAAG

EcoRI (2124)

2101 TAAAACCTCTACAAATGTGGTATGGAATTCTAAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAA

2201 TAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTT

SspI (2363)
SwaI (2377)

2301 GAACTAGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGA

EcoO109I (2438)

2401 AAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATA

2501 GAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTATC
141 • N R T Y K L P I L E E I T T K V L K G N M

SacI (2638)

BstXI (2667)

2601 TCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCGCACATGCCACAGGGGCTGACCACCTTGATGGATCTGTCCACCTCATCAGAGT

118 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 S R D V E D S Y

2701 AGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCGTTGCTCACAGCAGACCCCAATGGCAATGGCTTCAGCACAGACAGTACCCTGCCAAT

85 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 V R G I

StuI (2802)

2801 GTAGGCCTCAATGGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGTATGGCCGCCCGACATGGTGTCTTGTCTCATAGAGCATGGTATCTTC

52 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 M T I K

BspHI (2952)

BbsI (2948)

XmnI (2944)

2901 TCAGTGGCGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATAC

18 E T A V E V L E L D Q Q S I N F T K M

AseI (3010)

SacI (3067)

3001 TATGCCGATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAACGAGCTCTGCTTATATAGACCTCCCACCGTACAC

SpeI (3165)

3101 GCCTACCGCCATTTCGCTCAATGGGGCGGAGTGTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGG

SnaBI (3293)

3200 GGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTA

NdeI (3398)

3300 GATGTACTGCCAAGTAGGAAAGTCCCATAAAGTCTGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGC

3400 ATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACAT

PstI (3577)

SdaI (3576) PacI (3584)

BspLU11I

3500 ACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCC T G C A G G T T A A T T A A G A A C A

3598 TGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCG

3698 ACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGTCCCTCGTGGCTCTCTGTTCCGACCCTGCCG

3798 CTTACCGGATACCTGTCCGCTTCTCCCTTCCGGGAAAGCGTGGCGTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCTGTTCCGCTCCA

ApaLI (3908)

3898 AGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC

3998 ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGTACACTAGAAGA

4098 ACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTT

4198 TTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACTC

EagI (4344)

PacI (4324) SmaI (4333)

NotI (4343)

4298 ACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTGT

4398 GTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGAAGTGCAGGTGCCAGAACATT

4498 TCTCTATCGAA