



PvuI (7)
SgfI (6)
MfeI (82) **EcoNI (96)**

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
 101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203)
HindIII (245) **Bsu36I (291)**

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACACGGCCCGCCCTACCTGAGGCC
 301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
NgoMI (441)
NaeI (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCCTGCTTGCTCAACTCTACGTCTTTGTTTCGTTT

NcoI (560)

KasI (535)
BstEII (555)
PstI (572)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCCTACTCTGAGATCACCGGTCAACCTGAGCGGGCTGCAGCAGGAAGTGCACATCCCAGAG
 1 M A A A A A G T A T S Q R

EcoO109I (635)

601 GTTTTCCAGAGCTTCTCGGATGCCCTAATCGACGAGGACCCCGAGCGGCTTAGAGGAGCTGACTAAGGCTTTGGAACAGAAACCAGATGATGCACAG
 13 F F Q S F S D A L I D E D P Q A A L E E L T K A L E Q K P D D A Q

XbaI (774)

701 TATTATTGCAAAGAGCTTATTGTCACATCTCTTGGGAATTACTGTGTTGCTGTTGCTGATGCAAAGAAGTCTCTAGAAGTCAATCCAAATAATTCCA
 47 Y Y C Q R A Y C H I L L G N Y C V A V A D A K K S L E L N P N N S
 801 CTGCTATGCTGAGAAAAGGAATATGTGAATACCATGAAAAAACTATGCTGCTGCCCTAGAAAACCTTTACAGAAGGACAAAAATTAGATATAGAGACG
 80 T A M L R K G I C E Y H E K N Y A A A L E T F T E G Q K L D I E T

MscI (912)
BalI (912)

899 GGGTTTCATCGTGTGGCCAGGCTGGTCTCCAACCTTGACCTCAAGTGATCCACCTGCCTTGGACTCCCAAAGTGTGGGATTAC
 113 G F H R V G Q A G L Q L L T S S D P P A L D S Q S A G I T
 985 A GGTGAGATGCTAATTTAGTGTCTGGATTAAGGTTGCAAGAAGCTCAGAATGGCTCAGAATCTGAGGTGGACTCATCAGTCAAAAAACAAGTAT
 141 G A D A N F S V W I K R C Q E A Q N G S E S E V W T H Q S K I K Y
 1085 GACTGGTATCAAACAGAATCTCAAGTAGTACCTTATGATCAAGAATGTTCAAGAAGTATGTAATGTGGAATTTTACAGAAAAAGAGTTGTCTG
 175 D W Y Q T E S Q V V I T L M I K N V Q K N D V N V E F S E K E L S

XmnI (1228)
ScaI (1269)

1185 CTTTGTTAAACTTCTTCTGGAGAGGATTACAATTTGAAACTGGAACCTTCTTCATCCTATAATACCAGAACAGAGCAGCTTTAAAGTACTTTCAACAAA
 208 A L V K L P S G E D Y N L K L E L L H P I I P E Q S T F K V L S T K
 1285 GATTGAAATTAACCTGAAAAAGCCAGAGGCTGTGAGATGGGAAAAGCTAGAGGGGCAAGGAGATGTGCCTACGCCAAAACAATTCGTAGCAGATGTAAG
 241 I E I K L K K P E A V R W E K L E G Q G D V P T P K Q F V A D V K
 1385 AACCTATATCCATCATCTCTTATAACAAGAAATGGGATAAATGGTTGGTGGAGTCAAAGAAGAAGAAAAGTAAAGTTGGAGGGAGATGTCAG
 275 N L Y P S S S P Y T R N W D K L V G E I K E E E K N E K L E G D A

BglII (1505)

1485 CTTTAAACAGATTATTTACGAGATCTATTTCAGATGGTCTGATGAAGTGAACGTGCCATGAACAAATCCTTTATGGAGTCGGGTGGTACAGTTTTGAG
 308 A L N R L F Q Q I Y S D G S D E V K R A M N K S F M E S G G T V L S

VspI (1664)

1585 TACCAACTGGTCTGATGTAGGTAAGGAAAGTTGAAATCAATCCTCCTGATGATATGGAATGGAAAAAGTAAATAAATTAATTTGCTCTCATCGTA
 341 T N W S D V G K R K V E I N P P D D M E W K K Y •

MscI (1714)
BalI (1714)

NheI (1708)

1685 TTGTGTATTTACCTAATGCCAGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAACCTAGAATGCAGTAAAAAATGCT

HpaI (1846)
MfeI (1857)

1785 TTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGTGAATAAACAAGTTAAACAACAATTGCATTATTTATGTTTCAGGT

EcoRI (1942)

1885 TCAGGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACTCCAAATC
 1985 AAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTCAT

SspI (2181)

2085 GGAGTTTAAAGATATAGTGTATTTTCCAAAGTTTGAAGTCTCTTCATTTTATGTTTTAAATGCACTGACCTCCACATCCCTTTTTAGTAAAT

SwaI (2195)
EcoO109I (2256)

2185 ATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTTTATTAGGCAGAAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTAG
 2285 TAGTTGGACTTAGGGAACAAGGAACCTTAAATAGAAATTTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTACTTGGAGGGGATGAGTTC
 141 • N R T Y K L P I L E

SacI (2456)

2385 CTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTTGCACATGCCACAGGGGCTG
130 E I T 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
2485 ACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGTGCCTGACAGCCACAATGGTGTCAAAGTCCTTCTGCCCGTTGCTCACAGCAGACCCAATGG
96 V V R I 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

StuI (2620)
Eco147I (2620)

2585 CAATGGCTTCAGCACAGACAGTACCCTGCCAATGTAGGCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATG
63 I A E 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

PagI (2770)
BspHI (2770)

XmnI (2762)

2685 GTGCTTGTGTCCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCCACCAGTCCAGATCCTGCTGAGAGATGTTGAAGGTTTCATGATGGCCCTC
30 H K N 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 ←

VspI (2828)
AseI (2828)

2785 CTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCCTAA

SacI (2885)

2884 ACGAGCTCTGCTTATATAGACCTCCCACGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTTGATTT

SpeI (2983)

2984 ACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCAGGCCATTGATGTACTGCCAAAAC

SnaBI (3111)
Eco105I (3111)

3083 CGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCCATT

NdeI (3216)

3183 TACCGTCATTGACGTCAATAGGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCA

3283 ATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGGCGGGGTCTGTTGGCGGTGACGACAGCGGGCCATTACCGTA

PstI (3395)
SdaI (3394) PacI (3402) BspLU11I (3412)

3383 AGTTATGTAACGCC T G C A G G T T A A T T A A G A A C A T G T G A G C A A A A G G C C A G C A A A A G G C C A G G A A C C G T A A A A A G G C C G G T T G C T G G C G T T T T C C A T

3481 AGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAA

3581 GCTCCCTCGTGCGCTCTCTGTTCCGACCTGCCGTTACCGGATACCTGTCCGCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTG

ApaLI (3726)

3681 TAGGTATCTCAGTTCGGTGTAGGTGCTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGT

3781 CTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCT

3881 TGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACGATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTG

3981 ATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTT

EagI (4162)
PacI (4142) SmaI (4151) NotI (4161)

4081 TCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCCAATAAAATATC

4181 TTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAG
4281 GCTGTCCCAGTGAAGTGCAGGTGCCAGAACATTTCTCTATCGAA