



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

1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Bsu36I (291)
Psp1406I (203)
HindIII (245)
EcoNI (287)

201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

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

401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCGTACCCTGCTTGGCTCAACTCTACGCTTTTGTTCGTTT

KasI (535)
NcoI (560)
BstEII (555)
AgeI (552)
Eco47III (596)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACTCTGAGATCACCGGTACCATTGGCTGCAGTGATACTGGAGAGCATCTTTCTGAAGCG
133 M A A V I L E S I F L K R
BsrGI (660)

601 CTCCCAGCAGAAAAAGAAAACATCACCTTTAACTTCAAGAAGCGCCTGTTTCTCTTGACTGTACACAACTTTCATACTATGAATATGACTTTGAAGCT
133 S Q Q K K K T S P L N F K K R L F L L T V H K L S Y Y E Y D F E R
701 GGGAGAAGAGGCAGTAAGAAAGTTCAATAGATGTTGAGAAGATCACCTGTGTTGAAACAGTAATTCCTGAAAAAATCCCCACCAGAAAGACAGATTC
473 G R R G S K K G S I D V E K I T C V E T V I P E K N P P P E R Q I

BsiBI (834)
BsaBI (834)

801 CGAGGAGAGGTGAGGAGTCTAGTGAAATGGAACAGATTTCAATCATTGAAAGTTCCCGTACCCATTCCAGGTTGTATATGATGAAGGACCTCTCTATGT
803 P R R G E E S S E M E Q I S I I E R F P Y P F Q V V Y D E G P L Y V
Eco47III (926)
SexAI (971)

901 TTTCTCCCAACTGAAGAGCTGAGAAAGCG CTGGATTCCACGCTCAAAAATGTAATCCGGTACAATAGTGACCTGGTACAGAAATACCATCCTTGCTTC
113 F S P T E E L R K R W I H Q L K N V I R Y N S D L V Q K Y H P C F

XcmI (1037)
HindIII (1080)

1001 TGGATTGATGGACAGTATCTCTGCTGCTCTCAGACAGCAAGAATGCTATGGGCTGCCAAATTTGGAGAACAGGAATGGAAGCTTAAAACTGGGAGTT
147 W I D G Q Y L C C S Q T A K N A M G C Q I L E N R N G S L K P G S

BglII (1148)

1101 CTCATCGAAAAACGAAAAAGCCTTCCCCCTACCCAGAGGAAGATCAGATCTTGAAAAACCGCTTCCCCGGAGCCAACAGCAGCACCAATCTCCAC
180 S H R K T K K P L P P T P E E D Q I L K K P L P P E P T A A P I S T
1201 AACCGAGCTGAAAAAGGTCGTGGCCTTTATGATTACATGCCAATGAACGCAAATGACTTACAATTGCGAAAGGGCGAGGAGTATTTATCCTGGAGGAG
213 T E L K K V A L Y D Y M P M N A N D L Q L R K G E E Y F I L E E
1301 AGCAACTACCGTGGTGGCGAGCACGAGATAAAAATGGCGAGGAAGGCTACATCCCAAGTAACTATATCACTGAAGCTGAGGACTCCATAGAGATGTATG
247 S N L P W W R A R D K N G Q E G Y I P S N Y I T E A E D S I E M Y
1401 AGTGGTATCCAAGCACATGACTCGAAGTCAAGCTGAGCAACTGCTAAAGCAAGAGGGGAAAGAGGAGTTTCATTGTCAGAGACTCCAGCAAAGCTGG
280 E W Y S K H M T R S Q A E Q L L K Q E G K E G G F I V R D S S K A G
1501 AAAATACACCGTGTCTGTGTGCTAACTACTGCGGAGCCTCAAGGGGTGATCCGCCATTACGTTGTGTGTCCACGCCACAGAGCCAGTATTACTCG
313 K Y T V S V F A K S T G E P Q G V I R H Y V C S T P Q S Q Y Y L
1601 GCTGAGAAACACCTTCTCAGCACCATCCCTGAGCTCATTAACACCATCAACACAACCTGCAGGCCTCATATCCAGGCTGAAATATCCTGTGTCTAAAC
347 A E K H L F S T I P E L I N Y H Q H N S A G L I S R L K Y P V S K
1701 AAAACAAAAACGCGCCTTCTACTGCAGGCTGGGCTATGGATCATGGAAATGATCCAAAGGACCTCACCTTCTGAAGGAGCTTGGGACTGGACAATT
380 Q N K N A P S T A G L G Y G S W E I D P K D L T F L K E L G T G Q F

MscI (1841)
BalI (1841)
EcoRI (1882)

1801 CGGTGTCGTGAAATATGGGAAGTGGAGGGGCCAATATGATGTGGCCATCAAGATGATCAGAGAAGGTTCCATGTCCGAGGATGAATTCATTGAAGAAGCC
413 G V V K Y G K W R G Q Y D V A I K M I R E G S M S E D E F I E E A

BspHI (1904)

1901 AAAGTCATGATGAATCTTTCCCATGAGAAGCTGGTGCAGTTGTATGGCGTCTGCACCAAAACAACGCCCATCTTCATCATCACCGAGTACATGGCTAATG
447 K V M M N L S H E K L V Q L Y G V C T K Q R P I F I I T E Y M A N

Bsu36I (2016)

2001 GCTGCCTCTTGAACCTACCTGAGGAGATGCGGCACCGCTTCCAGACACAGCAGCTGCTTGAGATGTGCAAAGATGTCTGTGAAGCAATGGAATACTTGA
480 G C L L N Y L R E M R H R F Q T Q Q L L E M C K D V C E A M E Y L E

XmnI (2103)

2101 GTCGAAGCAGTTCCTTCCAGAGACCTGGCAGCTCGAACTGTTTGGTAAACGATCAAGGAGTTGTGAAAGTATCTGACTTTGGCCTGTCTAGGTATGTC
513 S K Q F L H R D L A A R N C L V N D Q G V V K V S D F G L S R Y V

BstXI (2239)

2201 CTTGATGATGAGTACACAGCTCTGTAGGCTCCAAGTTTCCAGTCCGGTGGTCTCCACCAAGAAGTCTTATGTATAGCAAGTTACGACAGCAAATCTGACA
547 L D D E Y T S S V G S K F P V R W S P P E V L M Y S K F S S K S D

BglII (2327)

2301 TCTGGCCTTTTGGGTTTTAATGTGGGAGACTACTCCCTGGGGAAGATGCCGTATGAGAGATTTACTAACAGTGAAGACAGCAGAAACACATTGCTCAAGG
580 I W A F G V L M W E I Y S L G K M P Y E R F T N S E T A E H I A Q G

BsrGI (2450)

2401 CTTACGCTCTACAGGCCTCATCTGGCATCAGAGAGGGTATATACCATCATGTACAGTCTGCGCAGAGAAAGCAGATGAACGTCCTAGTTTCAAAT
613 L R L Y R P H L A S E R V Y T I M Y S C W H E K A D E R P S F K I

MscI (2581)
BclI (2581)

XbaI (2514) **NheI (2575)**

2501 CTCTTGAGTAACATTCTAGATGTGATGGATGAAGAATCCTGAGCTGGCTGCTAACCTCCGTGGATCTCCTCCTCTGCTAGCTGGCCAGACATGATAAGAT
647▶ L L S N I L D V M D E E S •

2601 ACATTGATGAGTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAG

HpaI (2713)

2701 CTGCAATAAAACAAGTTAAACAACA AATGCATTCAATTTATGTTTCAGGTTCCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAACCTCTACAAA

EcoRI (2809)

2801 TGTGGTATGGAATTCTAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATC

2901 AGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGTTTGAAGTAGCTCTTCAT

SspI (3048) SwaI (3062)

3001 TTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTTTT

3101 ATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAATTTGGACAGCAA

3201 GAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCACTCAATGAGCACAAG
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 (3352)

3301 CAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAG
113▶ 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 A

3401 CCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCCAGCACAGACAGTACCCTGCCAATGTAGGCCTCAATGTG
80▶ 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 V A E I H

3501 GACAGCAGAGATGATCTCCCACTTGGTCTGATGGCCGCCGACATGGTCTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGACCTCC
47▶ 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 (3637) VspI (3695)
AseI (3695)

3601 ACCAGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCTATTATACTATGCCGATATACTATGCCGATGATTA
13▶ V L E L D Q Q S I N F T K M

3701 TTGTCAAACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTCTACTAAACGAGCTCTGTTATATAGACCTCCCACCGTACACGCTACCGCCATTT

SpeI (3850)

3801 GCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAA

**SnaBI (3978)
Eco105I (3978)**

3900 ATCCCCTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGT

NdeI (4083)

4000 AGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGA

4100 TGTACTGCCAAGTGGCAGTTTACCCTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACG

SdaI (4261) PacI (4269) **BspLU11I (4279)**

4200 TCAATGGGCGGGGTCTGTTGGCGGTGACCCAGCGGGCCATTTACCGTAAGTTATGTAACGCC 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

4298 AGCAAAAGGCCAGGAACCGTAAAGGCGCGTGTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAG

4398 GTGGCGAAACCCGACAGGACTATAAAGATACGAGCGTTCCTCGTGGCTCTCTGTTCCGACCTGCCGCTTACCGGATACCTG

ApaLI (4593)

4498 TCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCAAGCTGGGCTGTGTGC

4598 ACGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCAC

4698 TGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATC

4798 TGGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGTATCCGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGC

4898 AGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTT

EagI (5029)

PacI (5009) SwaI (5018) **NotI (5028)**

4998 GGTATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTTGTGTAATCGTAACTAA

5098 CATACGCTCTCCATCAAACAAACGAAACAAACAAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA