



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

101 GAGAAGGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACAGCGCCCGCCCTACCTGAGGCC
EcoNI (287)

301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441) **NaeI (441)**
401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTCTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) **AgeI (552)** **NcoI (560)**
501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTACCATGGTGTTCACAGTGTGGACGTTGAAGAGACAATTCCT
601 TATCCTTTTTAAACATCGTCTAATATCCGAGCTCCTTGGGGCTAGATGGTTTCTAAAACCTGCCTGTGATGTGACGCTGGATGCTCCGAATGCCAT
13> I L F N I V L I S E L L G A R W F P K T L P C D V S L D A P N A H
701 GTGATCGTGGACTGCACAGACAAGCACTTGACAGCGATTCTGGAGGCATTCCACCAATGCCACCACTCACCTCACCATTAACCACATAGCGAGCA
47> V I V D C T D K H L T A I P G G I P T N A T N L T L T I N H I A S

ClaI (841) **Bst1107I (860)** **ApaLI (894)**
801 TCACTCCAGCCTCCTCCAGCAGCTGGACCATCTGGTAGAGATCGATTCAGATGCAACTGTATACCTGTTTCGACTGGGGCCAAAAGACAACCTGTGCAC
80> I T P A S F Q Q L D H L V E I D F R C N C I P V R L G P K D N L C T
901 CAGAAGGCTGCAGATTAACCCAGTAGCTTTAGTAAACTCACTATTTAAAAGCTTTTACCTGGATGGAACACGCTTCTAGAATACTCCGGATCTT
113> R R L Q I K P S S F S K L T Y L K A L Y L D G N Q L L E I P R D L

XhoI (1024) **BspHI (1049)** **BspHI [m] (1047)**
1001 CCTCCAGCTTACAGCTGCTGAGTCTCGAGGCCAACACATCTTTGGATCATGAAAGAGAATCTAACAGAACTGGCCAACTAGAGATGCTCTACCTGG
147> P P S L Q L L S L E A N N I F W I M K E N L T E L A N L E M L Y L
1101 GCCAGAAGCTTACTACGCAATCTTGAATGTGTCATTTCCATGAAAAGATGCTTTCTCAGTCTGAGAAATTTAAAACCTGCTCTCCSTAAAAGA
180> G Q N C Y R N P C N V S F S I E K D A F L S L R N L K L L S L K L D
1201 TAACAACATCTCAGCTGTCCCACTGTTTTGCCATCTACTTTGACAGAACTGTTTCTTACAACAACATCATTGCAAAAATCCAAGAAGATGATTTAAT
213> N N I S A V P T V L P S T L T E L F L Y N N I I A K I Q E D D F N

DraIII (1373) **BsrGI (1369)**
1301 AACCTCAGTCAACTGCAAGTTCTGGACCTAAGTGGAAATTGCCCTCGTTGTTATAATGTCCCATTTCTTTGTACACCCTGTGAAAACAATGCTCCCCTAC
247> N L S Q L Q V L D L S G N C P R C Y N V P F P C T P C E N N A P L

Ppu10I (1421) **NsiI (1421)**
1401 AGATCCATCTACATGCTTTTGATGCATTGACAGAATTACAAGTCTTACGCTACACAGTAACTCTCTCAGTATGTGCCCAAAGATGGTTTCAAACCT
280> Q I H L H A F D A L T E L Q V L R L H S N S L Q Y V P Q R W F Q N L
1501 TAATAAACTCAAGGAAGTATGATCTTTCCAAAACCTTCTGGCCAAAGAAATGGGGATGCTAAATTTTGCATCTTCTCCCAACCTGTCAAATGGAT
313> N K L K E L D L S Q N F L A K E I G D A K F L H L L P N L V K L D
1601 CTGCTTCAATTATGAAGTTCAGTCTATCATACTTTATGAATCTGTCAGATTCTTTTCTCACTGAAAACTTAAAAGTGTTCGGATCAAAGGCT
347> L S F N Y E L Q V Y H T F M N L S D S F S S L K N L K V L R I K G

SnaBI (1739)
1701 ATGCTTTAAGGAGCTGAAAAGTTAAATCTCTCCCCGTACGTAATCTTCCGAATCTTGAAGTCTTGTGACTAATTTATAAAAATTGCCAA
380> Y V F K E L K S L N L S P L R N L P N L E V L D L G T N F I K I A N
1801 CCTCAGCATTTTAAACAATTTAAAACCTGAAATTCATAGATCTTTTCAGTGAACAAAATACACCTTCAGGAGATTCGAGTGAAGTGGCTTCTGCTCT
413> L S I F K Q F K T L K F I D L S V N K I S P S G D S S E S G F C S

Bsp120I (1927)
1901 GGCATGAGAACTTCTGCAGAAAGTCATGGGCCAGGCTCGAATCATTACATTATTTTCAGATATGATGAGTATGCAAGGAGTTGCCGTTCAAACA
447> G M R T S A E S H G P Q V L E S L H Y F R Y D E Y A R S C R F K N
2001 AAGAGCCTTCTTCTCCTTGCCTCTTAATGAAGATTGTCCATGATGGGAGACCTTGACCTAAGTAGAAACAATATTTTTTATCAGGTCCTCGGA
480> K E P S S S L P L N E D C S M Y G Q T L D L S R N N I F F I R S S E
2101 ATTTCAAGCATCTCACTTTCTCAATGCCTAAACTTATCAGGAAATAGCATCAGCAAGCTCTTAAATGGCAGTGAATTCAGCCTTTAGTGGAGCTGAAA
513> F Q H L T F L K C L N L S G N S I S Q A L N G S E F Q P L V E L K

BstBI (2248)
2201 TACTTGGACTTCTCAACAACCGGCTTGAATTTACTCCACTCAACAGCATTGAAAGAGCTACGCAACCTGGAAGTCTAGATATAAGTAGTAACAGCCACT
547> Y L D F S N N R L D L L H S T A F E E L R N L E V L D I S S N S H

EcoRV (2383)
2301 ATTTTCAATCAGAAGGAATTACTCACATGCTAGACTTTACCAAGAACCTAAAGGTTCTGAAGAACTGATGATGAACAACAATGATATCGCCACCTCCAC
580> Y F Q S E G I T H M L D F T K N L K V L K K L M M N N N D I A T S T

NcoI (2408) **EcoRI (2437)**
2401 CAGCACAACCATGGAGAGCGAATCGCTTAGAATCCTGGAATTCGAGGAAATCATTGGATTTTTATGGAGAGACGGTGATAACAGATACTTAAAATTC
613> S T T M E S E S L R I L E F R G N H L D I L W R D G D N R Y L K F

SphI (2579)
2501 TTCAAGAACCTGCACAAGTTAGAGGAATTGGACATCTCTGAAAATTCCTGAGTTTCTTACCTAGTGGAGTTTTCGATGGCCTCCAAATCTGAAGA
647> F K N L H K L E E L D I S E N S L S F L P S G V F D G M P P N L K
2601 CTCTCCTTGGCCAAAATGGGCTCAAGTCTTTCAATTGGGAAAGCTCCAGTATCTGCAGAATCTAGAAACCTGGACCTCAGCTACAACAGCTGAA
680> T L S L A K N G L K S F N W G K L Q Y L Q N L E T L D L S Y N Q L K

2701 GACTGTCCCTGAGAGATTATCCAACCTGTTCCAGAAGCCTCAAGAACTCATACTTAAGAATAATGAAATCAGAACCTAACAAAGTATTTTCTACAAGAT
713▶ T V P E R L S N C S R S L K K L I L K N N E I R N L T K Y F L Q D
SpeI (2857) Psp1406I (2872)
2801 GCTTTCCAGTTGGCAGATCTGGACCTCAGCTCAAATAAAATCCAGTTATCCAGAAGACTAGTTTCCAGAAAACGTTTCAACCAATTTGCAGATTTTGT
747▶ A F Q L R H L D L S S N K I Q V I Q K T S F P E N V L N N L Q I L
HpaI (2956)
2901 TTTTGCATCATAATCGGTTTCTGTGCAACTGCGACGCTGTGTGGCTTGTCTGGTGGGTTAACCATACAGAGGTGACCATCCCTTTCTTGGCCACAGATGT
780▶ F L H H N R F L C N C D A V W L V W W V N H T E V T I P F L A T D V
Bst1107I (3054)
3001 GACTTGTATGGGACCAGGAGCACACAAGGGCCAGAGTGTGGTCTCTCTAGATCTGTATACTTGTGAGTTAGATCTGACTAATTTTGTTTTGTTCCTT
813▶ T C M G P G A H K G Q S V V S L D L Y T C E L D L T N F V L F S L
BsaBI (3123)
3101 TCCCTATCGGCAGTTCTCTTTCTGATTGTAATCAGATAGCAAACCATCTCTATTTCTGGGATGTGTGGTACAGTTACCATTTCTGTAAGGCCAAGATAA
847▶ S L S A V L F L I V I T I A N H L Y F W D V W Y S Y H F C K A K I
EcoRV (3216)
3201 AGGGGTATCAACGTCTGATATCACCCAATTCCTGCTACGATGCTTTTATTGTCTATGACACTAAAGACCAGCAGTGACAGAGTGGGTTTTGGATGAGCT
880▶ K G Y Q R L I S P N S C Y D A F I V Y D T K D P A V T E W V L D E L
3301 GGTGGCCAAGTTGGAAGATCCAAGAGAGAAACATTTTAAATTTATGTCTCGAAGAAAGGGACTGGTTACCAGGGCAGCCAGTTCTGGAAAACCTTTCCAG
913▶ V A K L E D P R E K H F N L C L E E R D W L P G Q P V L E N L S Q
3401 AGCATACAGCTTAGCAAAAAGACGGTGTGTGATGACAGACAAGTATGCAAAGACTGAGAAAATTAAGATAGCATTCTACTTGTCCCATCAGAGGCTCA
947▶ S I Q L S K K T V F V M T D K Y A K T E K F K I A F Y L S H Q R L
3501 TGGTGA AAAAGTGGATGTCATTATCTTGATTTCTTGAGAAGCCCTTCAGAAAGTCCAAGTTTTTCCAGCTTCGGAAGAGGCTCTGTGGGAGTTCTGT
980▶ M D E K V D V I L I F L E K P L Q K S K F F Q L R K R L C G S S V
3601 TCTTGAGTGGCCAACAAATCCACAGGCTCACCCGACTTCTGGCAGTGTCTGAAAAATGCCCTGGCCACAGACAACCCAGTTACCTATAGTCAGGTGTT
1013▶ L E W P T N P Q A H P Y F W Q C L K N A L A T D N H V T Y S Q V F
NheI (3752)
3701 AAAGAGACAGCTAGCTCTTTGCAAAATGTGACTGCCTAACTTAACCAAGGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACC
1047▶ K E T A •
HpaI (3890)
3801 ACAACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAGTTAAACAACA
EcoRI (3986)
3901 ACAATTGCATTCATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAACCTCTACAATGTGGTATGGAATCTAAAATAC
4001 AGCATAGCAAAAACCTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATT
4101 AGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTTCCCAAGGTTTGAAGTACTCTTCATTCTTTATGTTTTAAATGCACTG
SspI (4225) SmaI (4239)
4201 ACCTCCACATTCCTTTTTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTTTTATTAGGCAGAATCCAGATGCTCA
4301 AGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCAGCTTCTAGCTTTAGT
141▶ • N
4401 TCCTGGTGTACTTGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGAT
139▶ 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 C D P A Y D S I
BstXI (4529)
4501 GAGCTCTGCGACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCCTGACAGCCACAATGGTGTCAAAGTCTTC
106▶ 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 V I T D F D K
StuI (4664)
4601 TGCCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCCAGCAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCAG
72▶ 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 H V A S I I E G T
4701 TCTTGGTCTGATGGCCGCCGACATGGTCTTGTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGA
39▶ 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 V L E L D Q Q S
BspHI (4814) AseI (4872)
4801 GATGTTGAAGGCTTCTATGATGGCCCTCTATAGTGTGCTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACAGCGTGGATGGCG
6▶ I N F T K M
4901 TCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTA
SpeI (5027)
5001 CGACATTTTGAAGTCCCGTTGATTACTAGTCAAAAACAACTCCCATTTGACGTCAATGGGGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTAT
SnaBI (5155)
5100 CCACGCCATTGATGACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCCATAAAGTTCATGT
NdeI (5260)
5200 ACTGGGCATAATGCCAGGCGGGCATTACCCTGATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGAGTTA
5300 CCGTAAATACTCCACCATTTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGC
SdaI (5438) PaeI (5446) BspLU11I (5456)
5400 GGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTG 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 A A A G G C C A G G A A C C G T A A A
5498 AAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTAT
5598 AAAGATACCAGCGTTTTCCCTGGAAGCTCCCTGTGCGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAG

ApaLI (5770)

5698 CGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTCAGCCCCGAC
5798 CGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGA
5898 GGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTAC
5998 CTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAA

PacI (6186) SwaI (6195)

6098 GGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACAT

EagI (6206)

NotI (6205)

6198 TTAAATC AGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAA
6298 ACGAAACAAAACAACTAGCAAATAGGCTGTCCCAAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA