



150

Sgfl (11) 1 GGATCTGCATCGCTCCGGTGCCGTCAGTGGGCAGAGCGCACATGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACCGGTGCCTA
Agel (90)
101 GAGAAGGTGGCGGGGTAAACTGGGAAAGTATGTCGTGTACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (246)
201 GTGAACGTTCTTTTTCGCAACGGGTTTCCGCCAGAACACAGTGAAGCTTCGAGGGCTCGCATCTCTCCTTACCGGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGGTTGAGTCGCGTTTCTGCCGCTCCCGCCTGTGGTGCCTCTGAACTGCGTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

Agel (553)
501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTAGGAGGGCCATCATGACTAGCATCTCCATTTTGCATTATC
601 TTCATGTTAATACTTCAGATCAGAATAACAATTATCTGAAGAAAGTGAATTTTTAGTTGATAGGTCAAAAAACGGTCTCATCCACGTTCTCTAAAGACCTAT
11▶ F M L I L Q I R I Q L S E E S E F L V D R S K N G L I H V P K D L
701 CCCAGAAAAACAATCTTAAATATATCGAAAAATTATATCTGAGCTTTGGACTTCTGACATCTTACTGTCAAAACTGAGGATTTTATAATTTTC
44▶ S Q K T T I L N I S Q N Y I S E L W T S D I L S L S K L R I L I I S

EcoRV (825)
801 TCATAATAAATCCAGTATCTTGATATCAGTGTTCCTCAAATCAACCAGGAATTGGAATACTTGGATTTGCCACAACAAGTTGGTGAAGATTTCTTGC
77▶ H N T I Q Y L D I S V F K F N Q E L E Y L D L S H N K L V K I S C

BstAPI (949)
901 CACCCTACTGTGAACCTCAAGCACTTGGACCTGTCATTTAATGCATTTGATGCCCTGCCTATATGCAAAGAGTTTGGCAATATGTCTCAACTAAAATTTTC
111▶ H P T V N L K H L D L S F N A F D A L P I C K E F G N M S Q L K F
1001 TGGGTTGAGCACCACACTTAGAAAAATCTAGTGTGCTGCCAATTGCTCATTGAAATATCAGCAAGTCTTGTGCTTGTAGGAGACTTATGGGGA
144▶ L G L S T T H L E K S S V L P I A H L N I S K V L L V L G E T Y G E

DrallI (1152)
1101 AAAAGAAGACCCTGAGGGCCTTCAAGACTTTAACTGAGAGTCTGCACATTTGTTCCCCACAACAAGAATTCCATTTTATTTTGGATGTGTCAGTC
177▶ K E D P E G L Q D F N T E S L H I V F P T N K E F H F I L D V S V
1201 AAGACTGTAGCAAATCTGGAATCTAATATCAAATGTGTGCTAGAAGATAACAATGTTCTTACTTCTAAGTATTCTGGCGAACTTCAAACAATC
211▶ K T V A N L E L S N I K C V L E D N K C S Y F L S I L A K L Q T N

BamHI (1358)
1301 CAAAGTTATCAAATCTTACCTTAAACAACATTGAAACAACCTTGAATCTTTTATTAGGATCTCCAGCTGGTTTGGCATACTGATGGTATTTCTC
244▶ P K L S N L T L N N I E T T W N S F I R I L Q L V W H T T V W Y F S
1401 AATTTCAAACGTGAAGCTACAGGGTCAAGCTTCAAGACTTTGATTATCTGGCACTTCTTGAAGCCTTGTCTATACCAAGTTGTGAGCGAT
277▶ I S N V K L Q G Q L D F R D F D Y S G T S L K A L S I H Q V V S D

BstBI (1540)
1501 GTGTTCCGTTTTCCGCAAAGTTATATCTATGAAATCTTTTCAATATGAACATCAAAAATTTACAGTGTCTGGTACACGCATGGTCCACATGCTTTGCC
311▶ V F G F P Q S Y I Y E I F S N M N I K N F T V S G T R M V H M L C
1601 CATCCAAAATTAGCCCGTTCTGATTTGGATTTTCCAATAATCTCTTAACAGACACGGTTTTTGAANAATGGGGCACCTTACTGAGTTGGAGACT
344▶ P S K I S P F L H L D F S N N L L T D T V F E N C G H L T T E L E T L
1701 TATTTTCAAATGAATCAATTAAGAATTTCAAAAAGTACTGAAATGACTACACAGATGAACTCTGCAACAATGGATATTAGCAGAATTCTGTA
377▶ I L Q M N Q L K E L S K I A E M T T Q M K S L Q Q L D I S Q N S V
1801 AGCTATGATGAAAAGAAAGGAGACTGTTCTTGGACTAAAAGTTTAAAGTTAAATATGCTTCAAATATACTTACTGACACTATTTTTCAGATGTTTAC
411▶ S Y D E K K G D C S W T K S L L S L N M S S N I L T D T I F R C L

HindIII (1973)
1901 CTCCAGGATCAAGTACTTGATCTTACAGCAATAAAAATAAAGAGCATTCTAAACAAGTCGTAAGCTTGAAGACTCAATGTTGCTTT
444▶ P P R I K V L D L H S N K I K S I P K Q V V K L E A L Q L E L N V A F
2001 CAATCTTTAACTGACCTTCTGGATGTGGCAGCTTTAGCAGCTTTCTGATTGATCATTGATCACAATTAGTTTCCACCCATCGGCTGATTTCTTC
477▶ N S L T D L P G C G S F S S L S V L I I D H N S V S H P S A D F F
2101 CAGAGCTGCCAGAAGATGAGGTCAATAAAAAGCAGGGGACAATCCATTCCAATGTACCTGTGAGCTAGGAGAATTTGCAAAAATATAGACCAAGTATCAA
511▶ Q S C Q K M R S I K A G D N P F Q C T C E L G E F V K N I D Q V S

BspLU11I (2282)
2201 GTGAAGTGTAGAGGGCTGGCCTGATTCTTATAAGTGTGACTACCCGAAAGTTATAGAGGAACCCTACTAAAGACTTTACATGTCTGAATTATCCTG
544▶ S E V L E G W P D S Y K C D Y P E S Y R G T L L K D F H M S E L S C

XcmI (2343)
2301 CAACATAACTCTGCTGATCGTCACCATCGTTGCCACCATGCTGGTGTGGCTGTGACTGTGACCTCCCTCTGCAGCTACTTGGATCTGCCCTGGTATCTC
577▶ N I T L L I V T I V A T M L V L A V T V T S L C S Y L D L P W Y L
2401 AGGATGGTGTGCCAGTGGACCCAGACCCGGCGCAGGGCCAGGAACATACCCTTAGAAGAACTCAAAGAAATCTCCAGTTTCATGCATTTATTTTCATATA
611▶ R M V C Q W T Q T R R R A R N I P L E E L Q R N L Q F H A F I S Y
2501 GTGGCAGCATTCTTTTGGGTGAAGAATGAATTTGCAAAACCTAGAGAAAGAAAGTATGCAAGTTGCTTCAAGAGAAACTTTGTTCTGGCAA
644▶ S G H D S F W V K N E L L P N L E K E G M Q I C L H E R N F V P G K
2601 GAGCATTGTGAAAATATCATCACCTGCATTGAGAAGAGTTACAAGTCCATCTTTGTTTTGTCTCCAACTTTGTCCAGAGTGAATGGTGCCATTATGAA
677▶ S I V E N I I T C I E K S Y K S I F V L S P N F V Q S E W C H Y E
2701 CTCTACTTTGCCATCACAATCTTTTTCATGAAGGATCTAATAGCTTAATCCTGATCTTGTGGAACCCATCCGAGTACTCCATTCTAGCAGTTATC
711▶ L Y F A H H N L F H E G S N S L I L I L L E P I P Q Y S I P S S Y
2801 ACAAGCTCAAAGTCTCATGGCCAGGAGACTTATTTGGAATGGCCAAAGGAAAAGAGCAAACGTGGCCTTTTTTGGGCTAACTTAAGGGCAGCCATTA
744▶ H K L K S L M A R R T Y L E W P K E K S K R G L F W A N L R A A I N

BsrGI (2930)

2901 TATTAAGCTGACAGAGCAAGCAAAGAAACTGTACAAGCgttaagtcactgactgtctatgcctgggaaaggggtgggcaggagatggggcagtgaggaaad
77▶ I K L T E Q A K K L Y K

3001 gtggcactatgaacccACTAGTTTGACAATTAATCATAAGCATAGTATAATACAACCTACTATAGcaattgtactaaccttcttctctttcctctcctga
79▶ 7

3101 cagGAGGAGCCATCATGGCCGCTATGGAGATCGAGTCCGCATCACCCGCACCTGAACGGCTGGAGTTCGAGCTGGTGGCGGGGAGAGGGCACCCC
79▶ 90 G G A I M A A M E I E C R I T G T L N G V E F E L V G G G E G T P

3201 CGAGCAGGGCCGATGACCAACAAGATGAAGAGCACCAAGGCCCTGACCTTCAGCCCCTACCTGCTGAGCCACGTGATGGGTACGGTCTACCCAC
82▶ E Q G R M T N K M K S T K G A L T F S P Y L L S H V M G Y G F Y H

3301 TTCGGCACCTACCCAGCGGCTACGAGAACCCCTTCTGCACGCCATCAACAACGGCGGTACACCAACACCCGCATCGAGAAGTACGAGGACGGCGGG
85▶ F G T Y P S G Y E N P F L H A I N N G G Y T N T R I E K Y E D G G

3401 TGCTGCACGTGAGCTTACGTACCGCTACGAGCCGGCCGCGTGATCGGGCAGCTTCAAGGTGATGGGCACCGCTTCCCCGAGGACAGCGTATCTTAC
88▶ V L H V S F S Y R Y E A G R V I G D F K V M G T G F P E D S V I F T

3501 CGACAAGATCATCCGAGCAACGCCACCGTGGAGCACCTGCACCCTATGGCGATAACGATCTGGATGGCAGCTTACCCGCACCTTACGCTGCGCGAC
92▶ D K I I R S N A T V E H L H P M G D N D L D G S F T R T F S L R D

3601 GCGGGCTACTACAGTCCGTGGTGACAGCCACATGCACCTCAAGAGCGCCATCCACCCAGCATCCCTGCAGAACGGGGGCCCATGTTCCGCTTCCGCC
95▶ G G Y Y S S V V D S H M H F K S A I H P S I L Q N G G P M F A F R

NheI (3785)

3701 GCGTGGAGGAGGATCACAGCAACACCGAGCTGGGCATCGTGGAGTACCAGCACGCTTCAAGACCCCGGATGCAGATGCCTAAAGCTAGCTGGCCAGACA
98▶ R V E E D H S N T E L G I V E Y Q H A F K T P D A D A •

3801 TGATAAGATACATTGATGAGTTTGGACAACCACTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACT

HpaI (3925)

3901 CATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAACC

4001 CTCTACAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGC

4101 ATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTTAAAGATATAGTGATTTTTCCCAAGGTTTGAECTA

Swal (4275)

4201 GCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTTAGTAAATATTAGAAATAATTTAAATACATCATTGCAATGAAAATAA

4301 ATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATT

4401 GGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCTCAATG
141 • N R T Y K L P I L E E I T T K V L K G N M E I

4501 AGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGT
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

4601 GCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTACGACAGACAGTACCCTGCCAATGTAGGC
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

4701 CTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTCTTGTGCTCATAGAGCATGGTATCTTCTCAGTG
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

4801 GCGACCTCCACGCTCCAGATCCTGCTGAGAGATGTTGAAGTCTTATGATGGCCCTCTATAGTGAGTCGATTATACATATGCCGATATACTATGCC
16 A V E V L E L D Q Q S I N F T K M

4901 GATGATTAATTGTCAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTAC

5001 CGCCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAG

5101 ACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTAAGTCCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTAC

5201 TGCCAAGTAGGAAAGTCCATAAGGTGATGTAAGTGGGATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGAT

5301 ACACTTGATGTAAGTCCCAAGTGGGAGTTTACCCTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAT

Pacl (5483)

Sdal (5476)

BspLU111 (5489)

5401 TATTGACGTCAATGGGCGGGGTCTGTTGGGCGTCCAGCCAGGCGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAATTAAGAACATGTGAGCAA
Sdal (5476) BspLU111 (5489)

5501 AAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAG

5601 TCAGAGGTGGCGAAACCCGACAGGACTATAAGATACCAGCGTTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGA

5701 TACCTGTCCGCTTTCTCCCTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGCT

ApaLI (5803)

5801 GTGTGCACGAACCCCGTTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGTGATCCAACCCGGTAAAGACAGACTTATGCCACTGGCACG

5901 AGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTT
6001 GGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGT
6101 GCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTCTACGGGTCTGACGCTCAGTGAACGAAAACTCACGTTAAGG
Pacl (6223) Swal (6231) **NotI (6239)**
6201 GATTTTGGTCATGGCTAGTTAATTAACATTTAATCAGCGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGT
6301 AACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCG
6401 AA