



PvuI (7)
SgfI (6) 1 GGATCTGGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

HindIII (245)
Psp1406I (203) 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGGCCGACAGTGAAGCTTCAGAGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGCC
PvuII (239)
301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMI (441)
NaeI (441) 401 GGGCCTTTGTCCGGCGCTCCCTTGGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) 501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGTGAGCATGCTGGGGCAAGTGGTACCCTCATACTCCTCCTGCT
AgeI (552) 1▶ M L G Q V V T L I L L L L
SphI (560)
BstEII (576)
601 CCTCAAGTGTATCAGGGCAAAGGATGCCAGGGATCAGCTGACCATGTGGTTAGCATCTCGGGAGTGCCTTTCAGTTACAACCAAACAGCATAACAGACG
13▶ L K V Y Q G K G C Q G S A D H V V S I S G V P L Q L Q P N S I Q T
701 AAGTTGACAGCATTGCATGGAAGAAGTTGCTGCCCTCACAAATGGATTTTCATCACATATTGAAGTGGGAGAATGGCTCTTTCCTTCAATACTTCCA
47▶ K V D S I A W K K L L P S Q N G F H H I L K W E N G S L P S N T S

BstEII (885)
801 ATGATAGATTGATTTTATAGTCAAGAAGTGTAGTCTTCTCATCAAGGCAGCTCAGCAGCAGGACAGTGGCCTCTACTGCCTGGAGGTACCAGTATATC
80▶ N D R F S F I V K N L S L L I K A A Q Q Q D S G L Y C L E V T S I S
901 TGGAAAAGTTCAGACAGCCAGTTCAGGTTTGTATTTGATAAAGTTGAGAAAACCCCGCTACAGGGGAGGGGAAAGTCTGGACAGAGGGAGATGC
113▶ G K V Q T A T F Q V F V F D K V E K P R L Q G Q G K I L D R G R C
1001 CAAGTGGCTCTGCTTGTGCTTCCAGGGATGGCAATGTGTCTATGCTTGGTACAGAGGGAGCAAGCTGATCCAGACAGGGAACCTCACCTACC
147▶ Q V A L S C L V S R D G N V S Y A W Y R G S K L I Q T A G N L T Y
1101 TGGACGAGGAGTTGACATTAATGGCACTCACACATATACCTGCAATGTCAGCAATCCTGTTAGCTGGGAAAGCCACACCCTGAATCTCACTCAGGACTG
180▶ L D E E V D I N G T H T Y T C N V S N P V S W E S H T L N L T Q D C

EcoRI (1216)
1201 TCAGAATGCCATCAGGAATTCAGATTTTGGCCGTTTTTGGTGATCATCGTGATTCTAAGCGCACTGTTCTTGGCACCTTGCCTGCTTCTGTGTGG
213▶ Q N A H Q E F R F W P F L V I I V I L S A L F L G T L A C F C V W
1301 AGGAGAAAAGGAAAGGAGAGCAGTCCAGACAGTCCCAAGGAATTTTGCATTTACGAAGATGTCAAGGATCTGAAAACAGGAGAAATCACGAGC
247▶ R R K R K E K Q S E T S P K E F L T I Y E D V K D L K T R R N H E
1401 AGGACGAGACTTTTCTGGAGGGGGAGCACCATCTACTATGATCCAGTCCAGTCTTCTGCTCCACGTACAAGAACCTGCATATACATTATATTC
280▶ Q E Q A C T F P G G G S T I Y S M I Q S Q S S A P T S Q E P A Y T L Y S

BamHI (1525)
1501 ATTAATTCAGCCTTCCAGGAAGTCTGGATCCAGGAAGAGGAACACAGCCCTTCTTCAATAGCACTATCTATGAAGTATTGAAAGAGTCAACCTAAA
313▶ L I Q P S R K S G S R K R N H S P S F N S T I Y E V I G K S Q P K

PstI (1663) 1601 GCCCAGAACCCTGCTCGATTGAGCCGCAAAGAGCTGGAGAAGTCTGATGTTTATTCTAGTTGCTGCAGCAATTTCTACCTTTCTTGCACGCTAGCTGGC
NheI (1690) 347▶ A Q N P A R L S R K E L E N F D V Y S •
1701 CAGACATGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAACCAATTTGTTGAAATTTGTGATGCTATTGCTTTATT

HpaI (1828) 1801 TGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTTTAAAGCAAG
MfeI (1839)

EcoRI (1924)
1901 TAAACCTCTACAAATGTGGTATGGAATTCTAAATACAGCATAGCAAACCTTAACTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAA
2001 TAAGGCATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTTAAAGATATAGTGTATTTTCCCAAGGTTT

SspI (2163) 2101 GAACTAGCTTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTATAGTAAATATTCAGAAATAATTTAAATACATCATTGCAATGA
SwaI (2177)

EcoO109I (2238)
2201 AAATAAATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCAATAATATCCCCAGTTTGTAGTGTGGACTTAGGGAACAAGGAACCTTTAATA
2301 GAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTTCATC
141▶ N R T Y K L P I L E E I T T K V L K G N M

BstXI (2467)
2401 TCAATGAGCACAAGCAGTCCAGGAGCATAGTCCAGAGTGTGACTCTGCACATGCCACAGGGGCTGACCAACCCTGATGGATCTGTCCACCTCATCAGAGT
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
2501 AGGGGTGCCTGACAGCCAAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCCAGCAGACAGTACCCTGCCAAT
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 (2602)
Eco147I (2602) 2601 GTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCGCTTGGTCTGATGGCCGCCCGGACATGGTGTGTTGTCCTCATAGAGCATGGTGTATCTTC
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 (2752)

2701 TCAGTGGCGACCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATAC
 18 E T A V E V L E L D Q Q S I N F T K M

XmnI (2744)

2801 TATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTCTACTAAACGAGCTCTGCTTATATAGACCTCCCACCGTACAC
 SacI (2867)

2901 GCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAACAAACTCCATTGACGTCAATGG
 SpeI (2965)

3000 GGTGGAGACTTGAAATCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATAACGTA
 SnaBI (3093)
 Eco105I (3093)

3100 GATGTACTGCCAAGTAGGAAAGTCCATAAGGTCACTGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCGTACTTGGC
 NdeI (3198)

3200 ATATGATACACTTGATGTACTGCCAAGTGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACAT

PstI (3377)

3300 ACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCC T G C A G T T A A T T A A G A A C A
 SdaI (3376) PacI (3384) BspLU11I

3398 TGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCG

3498 ACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCGTGGAAAGTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCG

3598 CTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCGCTCCA

ApaLI (3708)

3698 AGCTGGGCTGTGTGCACGAACCCCGTTCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC

3798 ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGTACACTAGAAGA

3898 ACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTT

3998 TTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACTC

EagI (4144)

NotI (4143)

4098 ACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGGTTTTTTGT
 PacI (4124) SmaI (4133)

4198 GTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAAGTCAAGTGCAGGTGCCAGAACATT

4298 TCTCTATCGAA