



PvuI (7) SgfI (6) MfeI (82)
1 GGATCTGCGCTCCGGTCCCGTCCAGTGGGCGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCCTA

101 GAGAAGGTGGCGGGGTAACGGGAAAGTGTCTGTACTGGCTCCGCCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) HindIII (245) Bsu36I (291)
201 GTGAACGTTCTTTTTTCGCAACGGGTTTCCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTCACGGCCCGCCCTACCTGAGGCC

301 GCCATCCACGGCGTTGAGTCGGCTTCTGCGCCCTCCCGCTGTGGTGCCCTCTGAAGTCCGCTCCGCCCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMI (441) NaeI (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGGCTACCTAGACTCAGCCGGCTCTCCAGCCTTGGCTGACCCTGCTTGGCTCAACTCTACGCTTTTGTTCGTTT

NcoI (560) BstEII (555) AgeI (552)
501 TCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGGGCCCTACCTGAGTACCCGGTCCACATGGAAGATCCGCGTAGAAGGACGACGGCCACGCGC

Bsp120I (647) PvuI (685)
601 TAAGAAGCGTCCGCGAAGCGCGCCCGACGCGCAGCCAGCAGGACAGGGCCACGCGGAAAGCTCGGCCCCGAAAGGGGGCTGATCGCGCGGGCC

130 K K P S A K R A P T Q P S R T R A H A E S C G P Q R G A R S R R A

BbrPI (728) Bsp120I (739) NcoI (797)
701 GAGCGTGACGGGACACCGAGAGCCACGTCAGGCGCCAGGCGCCGAGTCCATCCAGCAAGGGCCACTGAGCTACCAAGATGCACAGCCCTCGGCCA

470 E R D G D T T E K P R A P G P R V H P A R A T E L T K D A Q P S A

BsiWI (879) SacII (899)
801 TGGACGCGCAGGAGCCACCGCGCGCTGCCGTCCGGTGCAGCAGCAGGCCATCCTGGATCCGGAGCTGCCCGCTACGGGAGCCCCAGCGCC

80 M D A A G A T A R P A V R V P Q Q A I L D P E L P A V R E P Q P P

901 CGCGGATCCCGAGGCGGAAAGTCTGAAGGGGACCTAGCCACAGAGGGCGCGCTCCACCGGCGAGCCAGAGCGCCGCGAGGGTCCAGGAAAGAA

113 A D P E A R K V V R G P S H R R G A R S T G Q P R A P R G S R K E

EcoRV (1048) EagI (1061) FspI (1097)
1001 CCGACAAGCTAAAGAAGGTGCTGGACAAATTGAGATTGAAACGCAAGATATCTCGGAGGCGCCGAGACGGTGAATAAAGTTGGAAACGCCTGCTGC

147 P D K L K K V L D K L R L K R K D I S E A A E T V N K V V E R L L

1101 GCAGAATGCAGAAACGGGAGTCCGAGTTCAAAGGTGTGAGCAGCTGAACACTGGCAGCTACTATGAACATGTGAAGATTTCTGCTCCTAATGAATTTGA

180 R R M Q K R E S E F K G V E Q L N T G S Y Y E H V K I S A P N E F D

PmeI (1206) SspI (1241) EcoRI (1283)
1201 TGTATGTTAACTGGAAGTCCCGAGGATGAGCTACAAGAATATTGAAACAGGTGCTTCTATCTTGTAATCAAAGAATCCACGAGGAAAT

213 V M F K L E V P R I E L Q E Y Y E T G A F Y L V K F K R I P R G N

1301 CCGCTGAGTCATTTCTTAGAAGGGGAGTATTATCAGTACCAAGATGCTGTCAAAGTTTAGGAAAATCATTAAAGAAGAAGTTAAAGAAATCAAAGATA

247 P L S H F L E G E V L S A T K M L S K F R K I I K E E V K E I K D

1401 TAGATGTCAGTGTGGAGAAGGAAAACAGGAAAGCCCTGCTGTAACACTTCTATCAGGAACCTGAAGAAATCTCTGTGGATATAATTCTGGCTTTGGA

280 I D V S V E K E K P G S P A V T L L I R N P E E I S V D I L A L E

1501 GTCAAAAAGGCGAGTGGCTATTAGTACCAAAGAAGGACTACCTATTCAAGGCTGGCTGGGCACAAAAGTGAAGACCAATCTAAGACGAGAGCCGTTTTAT

313 S K G S W P I S T K E G L P I Q G W L G T K V R T N L R R E P F Y

1601 CTCGTACCAAGAAATGAAAAGGATGAAAATAGTTTTCAAGGAGAGACCTGGCGCTCTCTTCTCACACTGAAAAGTACATTTGAATAATCACGGGA

347 L V P K N A K D G N S F Q G E T W R L S F S H T E K Y I L N N H G

PstI (1737) AseI (1758)
1701 TAGAAAAACATGCTGTGAATCTTCCGGAGCAAAATGCTGCAGAAAAAGATGTTAAAAATTAATGAAATACCTTTTGAACAGTTGAAAAAGAGTTTCA

380 I E K T C C E S S G A K C C R K E C L K L M K Y L L E Q L K K E F Q

Ppu10I (1808) NsiI (1808) SmaI (1880)
1801 AGAGCTGGATGCTTCTGCTACCATGTGAAAATGCATCTTTACATGTGGACCCAGGACCCGACGAGCAGTCAAGTGGACCCAGCAACTCAGC

413 E L D A F C S Y H V K T A I F H M W T Q D P Q D S Q W D P R N L S

Bsu36I (1938)
1901 TCCTGCTCGATAAGTTGTTAGCATTCTTTCTGAGTGCTCAGGACAGAGAACTGGATCATTATTTATTCAAAGTTCAATCTATTCTCAAGAAC

447 S C F D K L L A F F L E C L R T E K L D H Y F I P K F N L F S Q E

HindIII (2077)
2001 TAATTGACCGAAAAAGTAAAGAAATTTCTATCGAAGAAAATGAATATGAAAGAAATATGGGTTTCCAATTTTGAAGCTTGGATCTATCCCTATGA

480 L I D R K S K E F L S K K I E Y E R N N G F P I F D K L G S Y P Y D

MscI (2186) NheI (2180)
2101 TGTGCCAGACTATGCTGGCTATCCATATGATGTTCTGATTATGCTGGATACCCCTTATGATGTGCCAGACTATGCCTAAAGCTAGCTGGCCAGACATGAT

513 V P D Y A G Y P Y D V P D Y A G Y P Y D V P D Y A •

2201 AAGATACATTGATGAGTTGGACAAACCACAACCTAGAAATGCAAGTGAAGAAATGCTTTATTTGTGAATTTGTGATGCTATTGCTTTATTGTAACCAT

HpaI (2318) MfeI (2329)
2301 ATAAGTGAATAAACAAGTTAACAACAACAATGCATTCATTTATGTTTCAGGTTCCAGGGGAGGTGGGGAGGTTTTTAAAGCAAGTAAACCTCT

EcoRI (2414)
2401 ACAAATGTGGTATGGAATTTCAAATACAGCATAGCAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGATGAATAAGGCATAG

2501 GCATCAGGGGCTGTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGTATTTCCCAAGTTTGAAGTACGCT

SspI (2653) SmaI (2667)
2601 TTCATTTCTTTATGTTTAAATGCACTGACCTCCACATTCCTTTTGTAGTAAAATATTCAGAAAATAATTTAAATACATCATTGCAATGAAAATAAATGT

2701 TTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAAATGGAC

2801 AGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTATCTCAATGAGCA
 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
 BstXI (2957)

2901 CAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCCCTGATGGATCTGCCACCTCATCAGAGTAGGGTGCCT
 115 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 R
 StuI (3092)

3001 GACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAAATGGCAATGGCTTCAGCACAGACAGTGCCTGCCAATGTAGGCCTCA
 82 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 E
 3101 ATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCGACATGGTGTGTTGTCTCATAGAGCATGGTATCTTCTCAGTGGCGA
 48 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 A V
 BspHI (3242)
 BpuAI (3238)
 BbsI (3238)
 XmnI (3234)

3201 CCTCCACCAGCTCCAGATCTGCTGAGAGATGTTGAAGGCTTCATGATGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATG
 15 E V L E L D Q Q S I N F T K M
 AseI (3300)

3301 ATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTCTACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCC

3401 CATTTGCGTCAATGGGCGGAGTTGTTACGACATTTTGAAAGTCCCCTGATTACTAGTCAAACAACTCCCATTGACGTCAATGGGGTGGAGACTT
 SpeI (3455)

3501 GGAAATCCCGTGAGTCAAACCGTATCCACGCCATTGATGTAAGTCCGCAATCATCATGTAATAGCGATGACTAATACGTAGATGTACTGCC
 SnaBI (3583)

3601 AAGTAGGAAAGTCCATAAGGTATGTAAGTGGGATAATGCCAGGCGGGCCATTACCGTCATTGACGTCAATAGGGGCGTACTTGGCATATGATACAC
 NdeI (3688)

3701 TTGATGTAAGTCCAGTGGGCGTAACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTATTATT

3801 GACGTCAATGGGCGGGGCTGTTGGCGGTGAGCCAGGCGGGCCATTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAAGAACATGTGAGCAAAGG
 PacI (3874)
 PstI (3867)
 SdaI (3866)
 SbfI (3866)

3901 CCAGCAAAGGCCAGGAACCGTAAAGGCGCGTGTGCGCTTTTCCATAGGCTCCGCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAG

4001 AGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCTGGAAGTCCCTCGTGCCTCTCTGTTCCGACCCTGCCCTTACCGGATACC

4101 TGTCCGCTTTCTCCCTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCAAGCTGGGCTGTG
 ApaLI (4198)

4201 GCACGAACCCCGTTTCCAGCCGACCGTGGCGCTTATCCGTAAGTATCGTCTTGTAGTCCAACCCGTAAGACAGCATTATCGCCACTGGCAGCAGCC

4301 ACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAAGCAGTATTGGTA

4401 TCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGATTGGTAGCTCTTGTATCCGCAAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGCAA

4501 GCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATT

4601 TTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACT
 EagI (4634)
 PacI (4614) SwaI (4623) NotI (4633)

4701 AACATACGCTCTCCATCAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA