



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA **MfeI (82)**

101 GAGAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTACTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

Psp1406I (203) 201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGTGAAGCTTCGAGGGCTCGCATCTCTCCTTACGCGCCCGCCCTACCTGAGGCC **HindIII (245)**

301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCAACTCTACGCTTTTGTTCGTTT

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

601 CCTCCTCATAGTCATCGACTCTCTGACTCTGTGGGATTGGCTTTGCCACCTGCCCACTGGAACACCCGCTGTCTCTGGCTCCACACGGATGAC **1 M G S S R L A A L L L P L**
13▶ L L I V I D L S D S A G I G F R H L P H W N T R C P L A S H T D D

701 AGTTTCACTGGAAGTTCTGCCTATATCCCTTGGCGCACCTGGTGGGCCCTTCTCCACAAAAGCCTTGGTGTGTGCGAGTCTGGCACTGTTCCCGCTGTT **DraIII (735)**
47▶ S F T G S S A Y I P C R T W W A L F S T K P W C V R V W H C S R C
801 TGTGCCAGCATCTGCTGTGAGTGGCTCAGGTCTTCAACGGGGCTCTCCACCTCCTGGTGCAGAAATCCAAAAGTCTCCACATTCAAGTCTATAG
80▶ L C Q H L L S G G S G L Q R G L F H L L V Q K S K K S S T F K F Y R
901 GAGACACAAGATGCCAGCACCTGCTCAGAGGAAGTCTGCCTCGTCACTGTCTGAGAAGAGCCATCACATTTCCATCCCTCCCGAGACATCTCC
113▶ R H K M P A P A Q R K L L P R R H L S E K S H H I S I P S P D I S

BamHI (1035) 1001 CACAAGGGACTTCGCTCTAAAAGGACCCAACTTCGGATCCAGAGACATGGGAAAAGTCTTCCAGATTGGACTCACAAGGCATGGAGGACCCGAGTTCT
147▶ H K G L R S K R T Q P S D P E T W E S L P R L D S Q R H G G P E F

SrfI (1120) **BstEII (1134)** 1101 CCTTTGATTTGCTGCCTGAGGCCGGGCTATTGCGGTGACCATATCTTCAAGCCCTGAGGTCAGCGTGCCTTTGTCAACAGTGGGCACTGGAGTGTGA
180▶ S F D L L P E A R A I R V T I S S G P E V S V R L C H Q W A L E C E

EcoRI (1267) 1201 AGAGCTGAGCAGTCCCTATGATGTCAGAAAATGTGTCTGGGGCCACACTGTAGAGCTGCCTTATGAATTCCTTCTGCCTGTCTGTGCATAGAGGCA
213▶ E L S S P Y D V Q K I V S G G H T V E L P Y E F L L P C L C I E A

MscI (1351) **ApaI (1387)** 1301 TCCTACCTGCAAGAGGACTGTGAGGCGCAAAAAATGTCCTTCCAGAGCTGGCCAGAAGCCTATGGCTCGGACTTCTGGAAGTCAGTGCATTCACCTG
247▶ S Y L Q E D T V R R K K C P F Q S W P E A Y G S D F W K S V H F T
1401 ACTACAGCAGCACACTCAGATGGTGCCTGACACTCCGCTGCCACTGAAGCTGGAAGCTGCCCTCTGCCAGAGGCACGACTGGCATACTCCTTTG
280▶ D Y S Q H T Q M V M A L T A L R C C P L K L E A A L C Q R H D W H T L C

XhoI (1523) 1501 CAAAGACCTCCCGAATGCCACAGCTCGAGAGTCAAGTGGTGGTATGTTTTGGAGAAGGTGGACCTGCACCCCGACTGCTTCAAGTTCTCTTTTGA
313▶ K D L P N A T A R E S D G W Y V L E K V D L H P Q L C F K F S F G

Tth111I (1629) 1601 AACAGCAGCCATGTTGAATGCCCCACAGACTGGGTCTCACATCCTGGAATGTAAGCATGGATACCAAGCCAGCAGCTGATTCTTCACTTCTCCT
347▶ N S S H V E C P H Q T G S L T S W N V S M D T Q A Q Q L I L H F S

SphI (1707) **NsiI (1705)** **BsrGI (1772)** 1701 CAAGAATGCATGCCACCTTCAGTGTGCTGGAGCCTCCAGGCTTGGGGCAGGACACTTTGGTGCCTCCCGGTGTACTGTGACAGCCAGGCCCCGGGGCTC
380▶ S R M H A T F S A A W S L P G L G Q D T L V P P V Y T V S Q A R G S
1801 AAGCCAGTGTCACTAGACCTCATCTCCCTTCTGAGGCCAGGGTGTGTCTGGTGTGGCGGTGAGATGTCCAGTTTGGCTGGAAGCACCTCTTG
413▶ S P V S L D L I I P F L R P G C C V L V W R S D V Q F A W K H L L

BspEI (1902) 1901 TGTCGGATGTCTTACAGACACTGGGGCTCTTGATCCTGGCACTGCTGGCCCTCCTACCCTACTGGGTGTTGTTCTGGCCCTCACCTGCCGGCGCC
447▶ C P D V S Y R H L G L L I L A L L A L L T L L G V V L A L T C R R

SrfI (2009) **Eco47III (2079)** 2001 CACAGTCAAGGCCCGCCAGCGCGCCAGTGTCTCCTCTGCACGCGGGACTCGGAGGCGCAGCGCGCCTGGTGGGAGCGCTGGCTGAAGTGTACG
480▶ P Q S G P G P A R P V L L L H A A D S E A Q R R L V G A L A E L L R

Eco47III (2103) **BbrPI (2152)** **BssHII (2158)** 2101 GGCAGCGTGGGCGCGGCGACGATGCTGGACCTGTGGAGGGGAGGACGCTGGCGCGCTGGCCCGCTGCCGTGGCTCTGGCGCGCGGACG
513▶ A A L G G R D V I V D L W E G R H V A R V G P L P W L W A A R T

BsrBI (2238) 2201 CGCGTAGCGGGAGCAGGGCACTGTGCTGCTGTGGAGCGGCGCCGACCTTCCGCCGGTCAAGCGCCCGACCCCGCGCCCGCCCTGCTCGCCC
547▶ R V A R E Q G T V L L L W S G A D L R P V S G P D P R A A P L L A

BssHII (2382) 2301 TGCTCCAGCTGCCCCGCGCCGCTGCTGCTGCTGCTTACTTCACTGCGCTCTGCGCAAGGGCGACATCCCCCGCGCTGCGCGCCCTGCCGCGCTA
580▶ L L H A A P R P L L L L A Y F S R L C A K G D I P P P L R A L P R Y
2401 CCGCTGTGCGGACCTGCCGCTGCTGCTGCGGGCGCTGGACGCGCGCCCTTTCGAGAGGCCACAGCTGGGGCGCCTTGGGGCGCGGACGCGCAGG
613▶ R L L R D L P R L L R A L D A R P F A E A T S W G R L G A R Q R R

MscI (2577) **AvrII (2556)** **NheI (2571)** 2501 CAGAGCCGCTAGAGCTGTGAGCCGGCTCGAACGAGAGGCGCCCGACTTGCAGACCTAGGTTGAGCAGAGCTAGTGGCCAGACATGATAAGATACAT
647▶ Q S R L E L C S R L E R E A A R L A D L G •

2601 TGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGC

HpaI (2709) MfeI (2720)

2701 AATAACAAGTTAACAACAACAATTGCATTCATTTTATGTTTCAGGTTTACGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTG

EcoRI (2805)

2801 GTATGGAATTTAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGG

2901 GCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGTTTGAAGTAGCTCTTCATTTCT

SspI (3044) SmaI (3058)

3001 TTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTA

3101 GGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAATTGGACAGCAAGAAA

3201 GCGAGCTTCTAGCTTTAGTTCCTGGTGTACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAAGCAGT

3301 CAGGAGCATAGTCAGAGATGAGCTCTGCACATGCCACAGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGTGCTGACAGCCAC

112 P A Y D S I L E R C M G C P S V R I S R D V E D S Y P H R V A V

StuI (3483)

3401 AATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTACGACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACA

79 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 I H V

3501 GCAGAGATGATCTCCCGAGTCTGGTCTGATGGCCGCCCCGACATGGTCTTGTTCCTCATAGAGCATGGTGATCTTCTCAGTGGCGACCTCCACCA

45 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 V L

AseI (3691)

3601 GCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGGTGGCCCTCTATAGTGAGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGT

12 E L D Q Q S I N F T K M

3701 CAAAACAGCGTGGATGGCGTCTCCAGCTTATCTGACGGTTCATAAACGAGCTCTGCTTATATAGACCTCCACCCTACACGCCTACCGCCATTGCGT

SpeI (3846)

3801 CAATGGGGCGGAGTTGTTACGACATTTGGAAAGTCCCGTTGATTTACTAGTCAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGAAATCCC

SnaBI (3974)

3901 CGTGAGTCAAACCGCTATCCAGGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAA

NdeI (4079)

4001 AGTCCATAAGGTGATGACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGCGTACTTGGCATATGATACACTTGATGTAC

4101 TGCCAAGTGGGAGTTTACCAGTAAATACTCCACCCATTGACGTCAATGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCAATATTGACGTCAAT

PacI (4265)

PstI (4258) SdaI (4257) BspLU11I (4275)

4201 GGGCGGGGTCGTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCCCTGCAGGTTAATAAGAACATGTGAGCAAAAGGCCAGCAAAA

4301 GGCCAGGAACCGTAAAAAGCCGCTTGGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTGGCGA

4401 AACCCGACAGGACTATAAAGATACCAGGCTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCT

ApaLI (4589)

4501 TTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACC

4601 CCCCCTTACAGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGGTCCAAACCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAAC

4701 AGGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTC

4801 TGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTTGTATCCGGCAAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGAAGCAGCAGAT

4901 TACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACCTCACGTTAAGGGATTTTGGTCATG

EagI (5025) NotI (5024)

PacI (5005) SmaI (5014)

5001 GCTAGTTAATTAACATTTAAATCAGCGGCCGAATAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTTGTGTGAATCGTAACTAACATACGC

5101 TCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA