



PvuI (7)
SgfI (6) 1 GGATCTGGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATCGCCACAGTCCCGGAGAAGTTGGGGGAGGGGTGGCAATTGAACGGGTGCCTA
MfeI (82)
101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGACTGGCTCCGCCTTTTTCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC

Psp1406I (203)
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCAGAGGGCTCGCATCTCTCCTTACGCGCCCGCCGCTACCTGAGGCC
301 GCCATCCACGCGGGTTGAGTCGCGTTTCTGCCGCCTCCCGCCTGTGGTGCCTCCTGAAGTGCCTCCGCCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGTCTTTGTTTCGTTT

KasI (535) **BspEI (558)**
501 TCTGTTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGGCGCTACCTGAGATCACCGGCTCCGGACACCATGGCTGAGCATGGGGAGTCCCTCCGAGGATCG
601 GATTTCTGAGATTGATTATGAATTTCTCCCTGAGCTCTCTGCTTCTTCGGGGTGGATGCAGTTCAGCTGGCAAAGAGCCAAGAAGAAGAGCATAAA
111 I S E I D Y E F L P E L S A L L G V D A V Q L A K S Q E E E E H K
121 M A E H G E S S E D R

FspI (737)
701 GAACGGATGAAAAAAGAAAGGTTTTAACTCACAGATGCGCAGTGAAGCCAAACGACTAAAGACCTTTGAGACCTATGACACGTTGAGATCATGGACGC
45 E R M K M K K G F N S Q M R S E A K R L K T F E T Y D T F R S W T
801 CACAGGAGATGGCAGCTGCTGGGTTTTACCACACAGGGGTGAAACTTGGGGTTGAGTCTTTTCTGTAGCTTGTATCCTTTGGCAATAGCCTCAGGAA
78 P Q E M A A A G F Y H T G V K L G V Q C F C C S L I L F G N S L R K
901 GCTTCCATAGAGAGACACAAGAAATTACGTCAGAAATGTGAGTTCCTTCAGGAAAGATGTTGGTAACATTGGCAAGTATGACATCCGGGTGAAGAGT
111 L P I E R H K K L R P E C E F L Q G K D V G N I G K Y D I R V K S

Acc65I (1031) **PshAI (1052)**
1001 CCAGAGAAGATGCTGAGAGGTGGCAAAGCCAGGTACCATGAAGAGGAGGCCAGACTGGAGTCCCTTGGAGACTGGCCATTTTATGCCATGGGACATCAC
145 P E K M L R G G K A R Y H E E E A R L E S F E D W P F Y A H G T S

BbrPI (1100)
1101 CACGTGTAATCTCAGCAGCTGGCTTTGTCTTTACAGGTAAGGGACACTGTGCAGTGTTTTTCTGTGGCGAAGCTTGGGCAACTGGGAAGAAGGAGA
178 P R V L S A A G F V F T G K R D T V Q C F S C G G S L G N W E E G D

SphI (1215)
1201 TGACCCCTGGAAGGAGCATGCCAAGTGGTTCGCCAAATGTGAATTTCTCAAAGTAAGAAATCTCAGAGGAAATGCCAGTATATCCAAGGCTATGAG
211 D P W K E H A K W F P K C E F L Q S K K S S E E I A Q Y I Q G Y E

Tth111I (1381)
1301 GGATTTGTTTCATGTAACGGGAGAACATTTTGTGAATTCCTGGGTCAGAAGAGAATTACCTATGGTATCAGCTTACTGCAACGACAGCGTCTTCGCTAATG
245 G F V H V T G E H F V N S W V R R E L P M V S A Y C N D S V F A N
1401 AAGAACTAAGGTGACGCTTTAAGGACTGGCCCAAGCAATCCTGTGGCTTTGAGTCTTTGGTCCAGAGCTGGCCTTTTCTACACAGGCAAAAAGGG
278 E E L R M D T F K D W P H E S P V A V D A L V R A G L F Y T G K K G
1501 CATTGTCCAGTGTCTTCTGTGGAGGATGATGGAGAAGTGCACAGAAGGTGACGACCAATACAAGAGCACAACAAGTTTTTCCCAACTGTGTATTT
311 I V Q C F S C G G C M E K C T E G D D P I Q E H N K F F P N C V F

1601 CTCCAAACCCGAAGTCCTGTCAGAAGTGATTCCAGCCCTTACAGGCACTGTGCACTTCCAGAAGCCATGGAAACCACAAGTGAAGCAACCACGATG
345 L Q T P K S S A E V I P A L Q S H C A L P E A M E T T S E S N H D
1701 ATCCAGCAGCAGTTCATTCTACAGTGGTGGGCTGGGTAGGAGTGAAGCCAGTGGTTTCAAGAGGCCAGGAGTCTGAGTGCAGCTAAGAGACAAC
378 D P A A V H S T V V G L G R S E A Q W F Q E A R S L S E Q L R D N Y
1801 CACTAAAGCCACTTTTCCGCACATGAACCTGCCAGAAGTGTGCTCCAGCCTTGGCACTGACCCTTGTATCGGCTGCGATGTGTCCATCATTCAAAGCAC
411 T K A T F R H M N L P E V C S S L G T D H L I G C D V S I I S K H

Bsp120I (1919)
1901 ATCAGCCAGCCTGTGCAAGGGGCCCTGACGATCCCTGAGTCTTCTCCAATCTCAGCTCTGTCATGTGTGTGGAGGGGAAACTGGCAGTGGAAAGACAA
445 I S Q P V Q G A L T I P E V F S N L S S V M C V E G E T G S G K T

BsrGI (2051)
2001 CCTTCTGAAGAGGATAGCTTTTCTCTGGGCATCAGGATGCTGCCCTTGTGTACAGGTTCCAGCTGGTCTTCTACCTCTCCCTTAGTTCATCACACC
478 T F L K R I A F L W A S G C C P L L Y R F Q L V F Y L S L S S I T P

AvrII (2136)
2101 AGACCAGGACTGGCCAACATCATCTGTGCCAACTCTAGGGCAGGAGCTGCATTAGTGAAGTGTGTCTGAGCAGCATCATCCAGCAGTTACAACAC
511 D Q G L A N I I C A Q L L G A G G C I S E V C L S S I I Q Q L Q H
2201 CAGGTGCTGTTCTGTTGGATGACTACAGTGGGCTGGCCTCACTCCCCAAGCCCTACATACACTGATTACAAAAACTACTTGTACGGACCTGCTTAT
545 Q V L F L L D D Y S G L A S L P Q A L H T L I T K N Y L S R T C L

BsrBI (2334) **XbaI (2355)**
2301 TGATCGTGTGCATACAAACAGGGTCAGGGGCATCCGCTACATACAGTCTAGAGATCAAAGAGTTTCCCTTGTCCAATACTGTCTATATATT
578 L I A V H T N R V R G I R S Y L D T S L E I K E F P L S N T V Y I L
2401 AAAGAAGTCTTCTCCATAATATAAAACGCTCTACTAGAGTTTATGGTTATTTTGGACAGAATGAAGATTTACAGGGAATTCACAAGACCCCTCTTC
611 K K F F S H N I K R L L E F M V Y F G Q N E D L Q G I H K T P L F
2501 GTGGCAGCAGTATGCTACTGACTGGTTGAAAATCCATCTGACCAGCCCTTTCAGGATATGGCACTTTTCAAGTCTACATGCAATACCTGTCTTAAAGC
645 V A A V C T D W F E N P S D Q P F Q D M A L F K S Y M Q Y L S L K
2601 ACAAGGTGCAGCTAAGCCTCTCCAAGCCAGGTGCTCCTCATGTGGGAGCTGGCCTTGCAGGGCTTTTCTCATCATGCTTTGAGTTCATAGTGATGA
678 H K G A A K P L Q A T V S S C G Q L A L T G L F S S C F E F N S D D

AgeI (2786)
2701 CCTGGCAGAGGCAGGAGTTGATGAAGATGAAGAGCTCACACCTGCTTGTAGAGCAAATTCACCGCCAGAGACTGAGGCCAGTCTACCGGTTTTTAGGT
711 L A E A G V D E D E E L T T C L M S K F T A Q R L R P V Y R F L G

BglII (2871)
2801 CCGCTGTTCCAGGAGTTTCTTGCTGCCATGAGACTGACTGAACTTCTGAGTTCAGATAGGCAGGAAGCAAGATCTGGGACTTTATTATTTGAGACAAA
745▶ P L F Q E F L A A M R L T E L L S S D R Q E D Q D L G L Y Y L R Q
2901 TTAACCTACCCTTGAAGGCTTTGACCACCTACAACAATTTTTGAAAGTATGTCTTTAGCCATCCGTCATCAAAGGCAGGGCCAACAGTTGTATCTCATT
778▶ I N S P L K A L T T Y N N F L K Y V F S H P S S K A G P T V V S H L
3001 GCTTCACTTGGTGGATGAGACAGAGTTGCTGGAGAATACCTATAAAAAATGAGGATTATGTAATCACCTCCAGGAACCTCCCGAATAATGAAGGGACT
811▶ L H L V D E T E L L E N T Y K N E D Y V N H P P G T S R I M K G L

SspI (3125) FspI (3158)
3101 AAGGAACTGTGGCTGTTATCTCTCGAATATTACTCTTCATTTGTTTCAGAACATTTATTGCGCATTGCTCTAAACTTTGCTTATGAAAGCAACACTGTTG
845▶ K E L W L L S P E Y Y S S F V S E H L L R I A L N F A Y E S N T V

ScaI (3255)
3201 CTGAATGTTCTCCATTTATTTGTCAGTTCCTTAGAGGGAGAACACTGGCTTTGAAAGTACTGAATTTACAATACTTTAGGGACCACCCAGAAAGCCTGTT
878▶ A E C S P F I L Q F L R G R T L A L K V L N L Q Y F R D H P E S L L
3301 ACTGGTGAAGAGTTTAGAAGTCTCGATAAATGAAATAAAGTGCCAAAAGTTGTAGATTATTCAGTCATGAAAAAAGTTTTGAAACATTACAGCCACCA
911▶ L V K S L E V S I N G N K V P K V V D Y S V M E K S F E T L Q P P

NsiI (3416)
3401 ACTATAGATCAGGACTATGCATCCGCTTTGAACAAATGAAGGAACATGAAAAAATTTATCTGAAAATGAAGAGACCATAAAGAGTATTAAGAACATCT
945▶ T I D Q D Y A S A F E Q M K E H E K N L S E N E E T I K S I K N I

AvrII (3565)
3501 TCCCCTTACAGCCACCTAAAATAAGCTCTGGCTATTGGAACTGTCCCAAGCCATGCAAGATCCCTAGGCTGGAAGTTGGAGTGACCAACATGGGTCC
978▶ F P L Q P P K I S S G Y W K L S P K P C K I P R L E V G V T N M G P
3601 AGCAGATCAAGCACTGCTCCAGTCTCATGGAAGTCTTCTCAGCTTCACAGAGATTGAGTTCGTTTATCCGACAGCAGTGGCTTCTTGAAGCATC
1011▶ A D Q A L L Q V L M E V F S A S Q S I E F R L S D S S G F L E S I

StuI (3722) XcmI (3743)
3701 CGCCAGCTCTGGAGCTGAGTAAGGCTCTGTCAACCAAGTGTCCATGTCCAGGCTGGAGCTCAGCAGAGCAGAACAGGAGCTGTTCTCACCTGCCTG
1045▶ R P A L E L S K A S V T K C S M S R L E L S R A E Q E L L L T L P

XhoI (3811)
3801 CCCTGCAGTCTCTCGAGGCTCAGAGACAAACCAGTTACCAGATCAGCTCTTCCATAACTGCACAAGTTCTGGGCCTGAAAGAAGTGTGTGTGAGACT
1078▶ A L Q S L E V S E T N Q L P D Q L F H N L H K F L G L K E L C V R L

3901 AGATGGCAAACCGGATGTGCTCTCAGTCTTCTGAGAGTCCCAAACCTCCTTACATGGAGAAGTTATCCATCCGAACCTCCATGGAGTCTGACCTC
1111▶ D G K P D V L S V L P G E F P N L L H M E K L S I R T S M E S D L

SpeI (4005) BstBI (4068)
4001 TCCAAACTAGTTAAATTGATTCAGAACTCTCCAAATCTCCATGTTTTCCATCTGAAATGTGATTTCTTTTGAATTTGACTCTCTCATGGCTGTGCTTG
1145▶ S K L V K L I Q N S P N L H V F H L K C D F L S N C D S L M A V L

HpaI (4162)
4101 CTTCTGCAAGAAACTCAGAGAGATTGAGTTTTCTGGACGATGCTTTGAGCCATGCCCTTTGTTAACATTTTCCAAATTTTATTCTCTGAAGATATT
1178▶ A S C K K L R E I E F S G R C F E A M P F V N I L P N F I S L K I L
4201 AAATCTTATAAGCCAACAATTCCAGATAAGGAAACATCAGAAAAATTTGCCAGGCTCTGGTTCCTCAGGAACCTGGAGGAACTGCTCGTCCCACT
1211▶ N L I S Q Q F P D K E T S E K F A Q A L G S L R N L E E L L V P T

BstAPI (4338)
4301 GGAGACGGGATTCACCAAGTGGCCAAATGATTGTCCGGCAGTGTCTGCAGTTCCTGTCTCCGAGTTCCTGCTTCTACTACATCTGGACAATGACA
1245▶ G D G I H Q V A K L I V R Q C L Q L P C L R V L A F H Y I L D N D

XhoI (4447) BglII (4458)
4401 GTGTGATTGAAATTGCCAGGTTGCCAACAGTGGAGGTTTCCAGAAACTCGAGAAGTTAGATCTTTCCATGAATCACAAGATTACCGAGGAAGGATATAG
1278▶ S V I E I A R V A T S G G F Q K L E K L D L S M N H K I T E E G Y R

NsiI (4569)
4501 AAATTTCTTTCAAGCCCTGGACAACCTGCCAACTTGCAGAATCTGAACATCTGCAGACATATCCCAGAAATGCATTCAAGTTCCAGGCCACTGTCAAG
1311▶ N F F Q A L D N L P N L Q N L N I C R H I P E C I Q V Q A T T V K

AseI (4687)
4601 GCTCTGGGTCAATGTGTGCTCCGACTGCCAGCCTCACTAGGCTGCACATGCTCAGTTGGCTCCTGGATGAAGAGGACATGAAAGTGATTAATGATGTGA
1345▶ A L G Q C V S R L P S L T R L H M L S W L L D E E D M K V I N D V

NheI (4785)
4701 AGGAAAGACACCCCAAGTCCAAACGCTTGATTATCTTCTGAAATGGATAGTCCGTTCTCTCTGTTGCTGGAGTAAAGGATGCTAGCTGGCCAGAC
1378▶ K E R H P Q S K R L I I F W K W I V P F S P V V L E •
4801 ATGATAAGATACATTGATGAGTTTGGACAAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAA

HpaI (4923) MfeI (4934)
4901 CCATTATAAGCTGCAATAAACAAGTTAAACAACAACAATTGCATTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGTTTTTTAAAGCAAGTAAAA
5001 CCTCTACAATGTGGTATGGAATTTCAAATACAGCATAGCAAACTTTAACCTCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGG
5101 CATAGGCATCAGGGGCTGTTGCCAATGTGCATTAGCTGTTTGCAGCCTCACCTTCTTTCATGGAGTTAAGATATAGTGATTTTCCCAAGTTTGAAGT

SspI (5258) SmaI (5272)
5201 AGCTCTTCATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCTTTTTAGTAAAAATTCAGAAATAATTTAAATACATCATTGCAATGAAAATA
5301 AATGTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAAGGAACCTTTAATAGAAT
5401 TGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTACTTGGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCATTCTCTCAAT
1411▶ N R T Y K L P I L E E I T T K V L K G N M E I

BstXI (5562)
5501 GAGCAAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTCTGCATGCCACAGGGGCTGACCACCTGATGATCTGTCCACCTCATCAGAGTAGGG
117▶ 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

5601 TGCCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCCAATGGCAATGGCTTCAGCACAGACAGTGACCCTGCCAATGTAGG
 83 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 Y A
 5701 CCTCAATGTGGACAGCAGAGATGATCTCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTCTTGTTCCTCATAGAGCATGGTATCTTCTCAGT
 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
 5801 GCGGACCTCCACCAGTCCAGATCTGCTGAGAGATGTTGAAGTCTTCATGGTGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGC
 17 A V E V L E L D Q Q S I N F T K M

5901 ^{AseI (5905)} CGATGATTAATTGTCAAACACAGCGTGGATGGCTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTA

6001 ^{SpeI (6060)} CCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGGAAAGTCCCCTTGATTTACTAGTCAAACAAACTCCCATTGACGTCAATGGGGTGG

6101 ^{SnaBI (6188)} GACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTA

6201 ^{NdeI (6293)} CTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCATAATGCCAGGCGGGCATTACCCTGATTGACGTCAATAGGGGGCGTACTTGGCATATGA

6301 TACACTTGATGTACTGCCAAGTGGGCGAGTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCA

6401 ^{SdaI (6471)} ^{PacI (6479)} ^{BspLU11I (6489)} TTATTGACGTCAATGGGGGGGGTCTTGGGCGGTCAGCCAGGCGGGCCATTTACCGTAAGTTATGTAACGCTGCAGGTTAATTAAGAACATGTGAGCA

6501 AAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAA

6601 GTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGTTACCGG

6701 ATACCTGTCCGCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCCGGTGTAGGTGCTTCGCTCCAAGCTGGGC

6801 TGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAG

6901 CAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATT

7001 TGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTT

7101 TGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAG

7201 ^{PacI (7219)} ^{Swal (7228)} ^{EagI (7239)} ^{NotI (7238)} GGATTTTGGTCATGGCTAGTTAATTAACATTTAAATCAGCGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAATCG

7301 TAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAACAAACTAGCAAATAGGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATC

7401 GAA