



PvuI (7)
SgfI (6) **EcoNI (96)**

1 GGATCTGCGATCGTCCGGTGCCCGTCAGTGGGCAGAGCGCACATCGCCACAGTCCCCGAGAAGTTGGGGGAGGGGTCGGCAATTGAACGGGTGCTA
101 GAGAAGGTGGCGGGGTAACCTGGGAAAGTGATGTCGTGTACTGGCTCCGCCCTTTTCCCGAGGGTGGGGGAGAACCCTATATAAGTCAGTAGTCGCC

Psp1406I (203) **HindIII (245)** **Bsu36I (291)**
EcoNI (287)

201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTCACGCGCCCGCCCTACCTGAGGGC
301 GCCATCCACGCGGTTGAGTCGCGTTCTGCCGCCTCCCGCTGTGGTGCCTCCTGAAGTGCCTCGCGCTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

NgoMIV (441)

401 GGGCCTTTGTCCGGCGCTCCCTTGAGACCTACCTAGACTCAGCCGGCTCTCCACGCTTGGCTGACCCTGCTTGTCAACTCTACGCTTTGTTTCGTTT

KasI (535) **SphI (560)** **AgeI (552)** **NsiI (562)** **XbaI (597)**

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGGCGCTACCTGAGATCACCGGTGAGCATGCATCTCTCGGCCCTGGCTCCTGCTCCTGGTCT
1 M H L L G P W L L L L V L

BamHI (683)

601 AGAATACTTGGCTTCTCTGACTCAAGTAAATGGGTTTTGAGCACCTGAAACCTCTACGCCTGGGAGGGGGCTGCGTCTGGATCCCTGCACCTAC
13 E Y L A F S D S S K W V F E H P E T L Y A W E G A C V W I P C T Y

BstEII (712) **HindIII (723)**

701 AGAGCCCTAGATGGTGACCTGAAAGCTTCATCCTGTTCCACAATCCTGAGTATAACAAGAACACCTCGAAGTTTATGGGACAAGACTCTATGAAAGCA
47 R A L D G D L E S F I L F H N P E Y N K N T S K F D G T R L Y E S

ApaLI (886) **DraIII (880)** **PshAI (898)**

801 CAAAGGATGGAAAGTTCTTCTGAGCAGAAAAGGGTGAATTCTGGGAGACAAGAATAAGAACTGCACACTGAGTATCCACCCGGTGACCTCAATGA
80 T K D G K V P S E Q K R V Q F L G D K N K N C T L S I H P V H L N D
901 CAGTGGTCAGTGGGGCTGAGGATGGAGTCCAAGACTGAGAAATGGATGGAACGAATACACCTCAATGTCTCTGAAAGGCTTTTCCACCTCATATCCAG
113 S G Q L G L R M E S K T E K W M E R I H L N V S E R P F P P H I Q
1001 CTCCTCCAGAAATTAAGAGTCCAGGAAGTCACTCTGACCTGCTTGTGAATTTCTCTGCTATGGGTATCCGATCCAATTCAGTGGCTCCTAGAGG
147 L P P E I Q E S Q E V T L T C L L N F S C Y G Y P I Q L Q W L L E

BbsI (1153) **NcoI (1197)**

1101 GGGTCCAATGAGGCGAGCTGCTGTACCTCGACCTCCTTGACCATCAAGTCTGTCTTACCCGGAGCGAGCTCAAGTTCTCCACAGTGGAGTCACCA
180 G V P M R Q A A V T S T S L T I K S V F T R S E L K F S P Q W S H H
1201 TGGGAAGATTGTGACCTGCCAGCTTCCAGATGCGATGGGAAGTTCTCTCCAATGACACGGTGCAGCTGAAGCTGAAGCACACCCCGAAGTTGGAGATC
213 G K I V T C Q L Q D A D G K F L S N D T V Q L N V K H T P K L E I
1301 AAGTCACTCCAGTATGCCATAGTGGGGAGGGGACTCTGTGACCATGACCTGCGAGGTGACGAGCAGCAACCCGGAGTACACGACGGTATCCTGGC
247 K V T P S D A I V R E G D S V T M T C E V S S S N P E Y T T V S W

ScaI (1478)

1401 TCAAGGATGGACCTCGTGAAGAAGCAGAATACATTACGCTAAACCTGCGGAAGTACCAAGGACCAGAGTGGGAAGTACTGCTGAGTCTCCAA
280 L K D G T S L K K Q N T F T L N L R E V T K D Q S G K Y C C Q V S N
1501 TGACGTGGCCCGGAAGTGGGAAGAAGTGTCTGCAAGTGCAGTATGCCCCGGAACCTCCACGGTTCAGATCCTCCACTACCGGCTGTGGAGGGA
313 D V G P G R S E E V F L Q V Q Y A P E P S T V Q I L H S P A V E G

MscI (1628) **BbrPI (1653)** **Acc65I (1658)**

1601 AGTCAAGTCGAGTTTCTTTGCATGTCACTGGCCAATCCTCTTCCAACAAATTACACGTGGTACCACAATGGGAAAGAAATGCAGGGAAGGACAGAGGAGA
347 S Q V E F L C M S L A N P L P T N Y T W Y H N G K E M Q G R T E E
1701 AAGTCCACATCCAAAGATCCTCCCTGGCAGCTGGGACTTATCCTGTGTGGCAGAAAACATTCTTGGTACTGGACAGAGGGGCCGGGAGCTGAGCT
380 K V H I P K I L P W H A G T Y S C V A E N I L G T G Q R G P G A E L

BstEII (1824)

1801 GGATGTCCAGTATCCTCCCAAGAGGTGACCACAGTGATTCAAAACCCATGCCGATTCGAGAAGGAGACAGTGACCCTTCTGTAACATAAATCC
413 D V Q Y P P K K V T T V I Q N P M P I R E G D T V T L S C N Y N S

KasI (1939) **NcoI (1935)** **Psp1406I (1981)**

1901 AGTAACCCAGTGTACCCTGGTATGAATGAAACCCATGGCGCTGGGAGGAGCCATCGTGGGGTGTGAAGATCCAAAACGTTGGCTGGGACAACA
447 S N P S V T R Y E W K P H G A W E E P S L G V L K I Q N V G W D N

FspI (2011) **BspEI (2090)**

2001 CAACCATCGCTGCGCAGCTTGAATAGTTGGTGTCTGGGCTCCCTGTGCGCCTGAATGTCCAGTATGCCCCCGAGACGTGAGGTCGGGAAAAT
480 T T I A C A A C N S W C S W A S P V A L N V Q Y A P R D V R V R K I
2101 CAAGCCCTTTCCGAGATTCACTCTGAAACTCGGTGAGCTTCAATGTGACTTCTCAAGCAGCCACCCCAAAGAGTCCAGTCTTCTGGGAGAAAAAT
513 K P L S E I H S G N S V S L Q C D F S S S H P K E V Q F F W E K N

Tth11II (2298)

2201 GGCAGGCTTCTGGGAAAAGAAAGCCAGCTGAATTTTACTCCATCTCCCGAGAAGTGTGGGAGTTACAGCTGCTGGGTGAACAACTCCATAGGACAGA
547 G R L L G K E S Q L N F D S I S P E D A G S Y S C W V N N S I G Q
2301 CAGCGTCCAAGGCTGGACACTTGAAGTGTGTATGACCCAGGAGGCTGCGTGTGTCATGAGCCCGGGGACCAAGTGTGGAGGGGAAGAGTGAAC
580 T A S K A W T L E V L Y A P R R L R V S M S P G D Q V M E G K S A T
2401 CCTGACTGTGAGAGCGCAACCCCTCCCTACACCTGTTTGGTGAATAACCAAAGCTCCCTACACAGCCAGAAGCTGAGATTG
613 L T C E S D A N P P V S H Y T W F D W N N Q S L P Y H S Q K L R L
2501 GAGCCGGTGAAGTCCAGCACTCGGGTGCCTACTGGTGCAGGGGACCAACAGTGTGGCAAGGGCCGTTGCTCTCAGCACCTCACCCTGCTACTATA
647 E P V K V Q H S G A Y W C Q G T N S V G K G R S P L S T L T V Y Y

PshAI (2633) **XcmI (2651)**

2601 GCCCGAGACCATCGGCAGGCGAGTGGCTGTGGGACTCGGGTCTGCCTCGCCATCCTCATCTGGCAATCTGTGGGCTCAAGCTCCAGCGACGTTGGAA
680 S P E T I G R R V A V G L G S C L A I L I L A I C G L K L Q R R W K

EcoRI (2730)
2701 GAGGACACAGAGCCAGCAGGGGCTTCAGGAGAATTCAGCGGCCAGAGCTTCTTTGTGAGGAATAAAAAGTTAGAAGGGCCCCCTCTCTGAAGGCC
713▶ R T Q S Q Q G L Q E N S S G Q S F F V R N K K V R R A P L S E G P
2801 CACTCCCTGGGATGCTACAATCCAATGATGGAAGATGGCATTAGCTACACCACCTGCGCTTTCCCGAGATGAACATACCACGAACTGGAGATGCAGAGT
747▶ H S L G C Y N P M M E D G I S Y T T L R F P E M N I P R T G D A E
Th111I (2935)
2901 CCTCAGAGATGCAGAGACCTCCCCGGACTGCGATGACACGGTCACTTATTGAGCATTGCACAAGCGCCAAGTGGGCGACTATGAGAACGTCATTCCAGA
780▶ S S E M Q R P P P D C D D T V T Y S A L H K R Q V G D Y E N V I P D
Bsu36I (3061)
BsrBI (3055)
3001 TTTTCAGAAGATGAGGGGATTCATTA CT CAGAGCTGATCCAGTTTGGGGTCGGGAGCGGCCTCAGGCACAAGAAAATGTGGACTATGTGATCCTCAA
813▶ F P E D E G I H Y S E L I Q F G V G E R P Q A Q E N V D Y V I L K
MscI (3122)
NheI (3116)
3101 CATTGACACTGGATGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTTGGACAAACCACTAGAATGCAGTGAAAAAATGCTTTATTTGT
847▶ H •
HpaI (3254)
3201 GAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAAACAACAATTGCATTCATTTTATGTTTCAGGTTTCAGGGGG
EcoRI (3350)
3301 AGGTGTGGGAGGTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGAATCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCT
3401 ACTTGAATCCTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGCTGTTGCCAATGTGCATTAGCTGTTTGACGCCTCACCTTCTTTCATGGAGTTTA
SspI (3589)
3501 AGATATAGTGATTTTCCAAGGTTTGAAGTAGCTCTTCAATTTCTTTATGTTTTAAATGCACTGACCTCCACATTCCCTTTTATGATAAATATTCAGAA
SwaI (3603)
3601 ATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTTCATAATATCCCCAGTTTAGTAGTTGGA
3701 CTTAGGGAACAAAGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGG
141 • N R T Y K L P I L E E I T
3801 TGGTTTTGACCAGCTTGCCATTCATCTCAATGAGCACAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTGACATGCCACAGGGGTGACCACCTC
127▶ T K V L K G N M 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
3901 GATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCT
94▶ I S R D V E D S Y P H R V A V I T D F D K Q G N S V A S G I A I A
4001 TCAGCACAGACAGTGACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGCTTGT
60▶ E A C V T V R G I 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
BspHI (4178)
BbsI (4174)
4101 TGCCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACAGCTCCAGATCCTGCTGAGAGATGTTGAAGGTCTTCATGATGGCCCTCCTATAGTG
27▶ D E Y L M T I K E T A V E V L E L D Q Q S I N F T K M
AseI (4236)
4201 AGTCGATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAGCGTGGATGGCGTCTCCAGCTATCTGACGGTTCACTAAACGAGCTC
SpeI (4391)
4300 TGCTTATATAGACCTCCACCGTACACGCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTTTGAAAGTCCCGTTGATTTACTAGTC
4399 AAAACAACTCCATTGACGTCAATGGGTGGAGACTTGAAATCCCCGTGAGTCAAACCGCTATCCACGCCATTGATGACTGCCAAAACCGCATCAT
SnaBI (4519)
4499 CATGGTAATAGCGATGACTAATACGTAGATGACTGCCAAGTAGGAAAGTCCCATAAAGTCACTGACTGGCATAATGCCAGGCGGGCATTACCGTCA
NdeI (4624)
4599 TTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGTACTGCAAGTGGGCGAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAG
4699 TCCCTATTGGCGTACTATGGAAACATACGTCATTATTGACGTCAATGGGCGGGGTGTTGGCGGTGAGCCAGGCGGGCATTACCGTAAGTTATGT
PstI (4803)
SdaI (4802)PaeI (4810) BspLU11I (4820)
4799 AACGCCCTGCAGGTTAA TTAAGAACATGTGAGCAAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGGCGTTTTTCCATAGGCTCCG
4897 CCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGCGTTTTCCCTGGAAGCTCCCTC
4997 GTGCGCTCTCTGTTCCGACCCTGCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATC
ApaLI (5134)
5097 TCAGTTCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTC
5197 CAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGG
5297 TGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCA
5397 AACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGG
EagI (5570)
PaeI (5550) SwaI (5559) NotI (5569)
5497 GTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAAATC AGCGGCCGCAATAAAATATCTTTATTTT
5597 CATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAATAGGCTGTCCC
5697 CAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGAA