



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

101 GAGAAAGTGGCGCGGGTAAACTGGAAAGTGATGTCGTGTAAGTGGCTCCGCCTTTTCCGAGGGTGGGGGAGAACCCTATATAAGTGCAGTAGTCGCC

**HindIII (245)**  
**Psp1406I (203)** 201 GTGAACGTTCTTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGGCTCGCATCTCTCTTACAGCGCCCGCCGCCCTACCTGAGGCC **Bsu36I (291)**

301 GCCATCCACGCGGTTGAGTGCAGTCTGCCGCTCCCGCCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC

**NgoMIV (441)**  
**NgoMI (441)**  
**NaeI (441)** 401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCTGACCCTGCTTGTCTCAACTCTACGCTTTTGTTCGTTT

**BspLU11I (560)**  
501 TCTGTTCTGCGCGGTTACAGATCCAAGCTGTGACCGCGGCTACCTGAGATCACCGGTCAACATGTCGGATGCGCGGAAGGGGCCGGACGAGGCGGATGA **KasI (535)** **AgeI (552)** 1 M S D A R K G P D E A D D

**XcmI (603)** 601 TAGCCAGTGTGACTCTGGCATAGAGTCGCTGCGCTCTCTACGCTCCCTGCCTGAACCTACTGCGGCCCGAGGCTCCGGATCATCCCAAAGCGGCTGCCCA **BspEI (673)** **BstXI (697)**  
13 S Q C D S G I E S L R S L R S L P E P T A A P G S G S S Q S G C P

701 CAGCCTTGAGACATGCTCCGGAGACCCACAAGGAACCCAGAGAAAGAAGATGCGGATGGAGAGCGAGCGGACTCCACTTATGCCTCCTCTCTCACTG **BsrBI (764)**  
47 Q P W R H A P E T H K E P E K E D A D G E R A D S T Y A S S S L T

801 AATCCTTCCCTTACTGGAGAGACCCGAAGCAAGGATCAAGCCCTCCCGCCCGAGGATGCGCGCTGCCCCCGGGGGTGTGAGCCCTCAGCAACT **BamHI (834)** **SacII (872)** **XhoI (898)**  
80 E S F P L L E R P E A K D P S P P A P G S P L P P A G V L S P Q Q L  
901 CGAGGCGCTCACATACATCTCTGAGGATGGAGACAGCTGCTCCACCTGGCAGTGATTCACGAAGCCCGTGGTGTATTCTGTTGCTTGGCTTTCTG  
113 E A L T Y I S E D G D T L L H L A V I H E A P S V L F C C L A F L  
1001 CCCAGGAAGTCTGGACATTCAGAACAACCTTACCAGACAGCACTGCATCTGGCCGTTACCTGGATCAGCCAGATGTTGTCCGGGCGCTGGTGTGA  
147 P Q E V L D I Q N N L Y Q T A L H L A V H L D Q P D V V R A L V L

**PstI (1117)**  
1101 AGGGGGCCAGCCGAATTCGAGGATCAGCATGGTGACACGGCCCTGCATGTGGCCTGTGCGGCCAGAATCTGGCCTGCGCGTGTCTGTCTGGAGGA **KasI (1160)**  
180 K G A S R I L Q D Q H G D T A L H V A C R R Q N L A C A C C L L E E  
1201 GCAGCCAGAGCCAGGACAGCTTTCTATCCCTGGACTCCAAGTGAAGAACTGGCAAGGTCTGGCCTGTCTCCACATTGCCACATTGCAGAGGAAC  
213 Q P E P G R Q L S H P L D L Q L K N W Q G L A C L H I A T L Q R N

**BsrBI (1303)** 1301 CAACCGCTCATAGAACTGTTGCTTCAAGATGGAGCTGACATTGATGTACAGGAGGGCACGAGTGGAAAGACTGCCCTGCACCTGGCTGTGAAACCCAGG  
247 Q P L I E L L L Q N G A D I D V Q E G T S G K T A L H L A V E T Q **BsrGI (1344)**

**XmaI (1436)**  
**SmaI (1436)** 1401 AGCGCAGCCTGGTGCAGTTTCTGTCCAGGCCGGTGCCTGGTGTAGATGCCCAGATGCTTAACGGGTGCACACCTTTACACCTGGCAGCTGGCCGGGGCCT  
280 E R S L V Q F L L Q A G A R V D A R M L N G C T P L H L A A G R G L **SphI (1451)** **ApaLI (1464)** **PvuII (1484)**

1501 CAACAGCATCTCATCCACTCTGTGTGAGGCCGGTGCCTGACTCTGCTGCTGAATGTAGAAGATGAGACACCCAGGACCTGGCTGAGGACCTCCTTTCT  
313 N S I S S T L C E A G A D S L L L N V E D E T P Q D L A E D L L S

**MscI (1669)**  
**BalI (1669)**  
**NheI (1663)** 1601 TATTTGCCCTTCGATGACCTGAAAATCTCCGGCAAACCTGCTATGTACTGACTGAAGCTCGGCTAGCTGGCCAGACATGATAAGATACATTGATGAGT  
347 Y L P F D D L K I S G K P L L C T D •

1701 TTGGACAAACCACAACCTAGAATGCAGTGAAGAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACA

**HpaI (1801)** 1801 AGTTAACAACAACAATTGCATTCTTTTATGTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGAA **MfeI (1812)** **EcoRI (1897)**

1901 TTCTAAAATACAGCATAGCAAACTTTAACCTCCAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTTGC

2001 CAATGTGCATTAGCTGTTTGAGCCTCACCTTCTTCATGGAGTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTCTCTTCTTTCTTTATGTTT

**SspI (2136)** 2101 TAAATGCACTGACCTCCACATTCCTTTTATGTAATAATTCAGAAATAATTTAAATACATCATTGCAATGAAAATAAATGTTTTTATTAGGCAGAAT **Swal (2150)**

2201 CCAGATGCTCAAGGCCCTCATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAAATGGACAGCAAGAAAGCGAGCCT

2301 CTAGCTTTAGTTCCTGGTGTACTTGAGGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAGCAGTCAGGAGCA  
-141 • N R T Y K L P I L E I T T K V L K G N M E I L V F C D P A **SacI (2411)** **BstXI (2440)**

2401 TAGTCAGAGATGAGCTCTCTGCACATGCCACAGGGGCTGACCACCTGATGGATCTGTCCACCTCATCAGAGTAGGGGTGCTGACAGCCACAATGGTGT  
109 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 V A V I T D

StuI (2575)  
Eco147I (2575)

2501 CAAAGTCCTTCTGCCGTTGCTCACAGCAGACCAATGGCAATGGCTTCAGCACAGACAGTGACCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGAT  
76 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 A S I  
2601 GATCTCCCCAGTCTTGGTCTGATGGCCGCCCGACATGGTGTCTTGTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGA  
43 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 E L

BspHI (2725)  
XmnI (2717)

VspI (2783)  
AseI (2783)

2701 TCCTGCTGAGAGATGTTGAAGGCTTTCATGATGGCCCTCTATAGTGAGTCGTATTATACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACAG  
9 D Q Q S I N F T K M

SacI (2840)

2801 CGTGATGGCGTCTCCAGCTTATCTGACGGTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGG

SpeI (2938)

2900 GCGGAGTTGTTACGACATTTTGGAAAGTCCCGTTGATTTACTAGTCAAAACAAACTCCATTGACGTCAATGGGGTGAGACTTGAAATCCCCGTGAG

SnaBI (3066)  
Eco105I (3066)

2999 TCAAACCGCTATCCACGCCATTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCC

NdeI (3171)

3099 ATAAGTCATGTACTGGGCATAATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGGCTACTTGGCATATGATACACTTGATGTACTGCCAA

3199 GTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGTCCCTATTGGCGTTACTATGGGAACATACGTCAATTATTGACGTCAATGGGCGG

PstI (3350)  
SdaI (3349) PacI (3357) BspLU11I (3367)

3299 GGGTCGTTGGGCGGTGAGCCAGGCGGGCCATTTACCGTAAAGTTATGTAACGCCCTGCAGGTTAA TTAAGAACATGTAGCAAAAGGCCAGCAAAAGGCC

3397 AGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACC

3497 CGACAGGACTATAAAGATACCAGGCGTTTTCCCTGGAAGCTCCCTCGTGGCTCTCCTGTTCCGACCCTGCCGTTACCGGATACCTGTCCGCCTTTCT

ApaLI (3681)

3597 CCCTTCGGAAGCGTGGCGCTTTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCC

3697 GTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGA

3797 TTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTCTTGAAGTGGTGGCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCT

3897 GAAGCCAGTTACCTTCGGAAGAGGTTGGTAGCTCTTGATCCGGCAAAACCAACCACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACG

3997 CGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACTCACGTTAAGGGATTTTGGTCATGGCTA

EagI (4117)  
NotI (4116)

PacI (4097) SmaI (4106)

4097 GTTAATTAACATTTAAATC AGCGGCCGCAATAAAAATATCTTTATTTTTCATTACATCTGTGTGTTGTTTTTGTGTGAATCGTAACTAACATACGCTCTC

4197 CATCAAAACAAAACGAAACAAAACAAACTAGCAAAATAGGCTGTCCCGAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA