

HindIII  
XhoI SacI BstBI Sal I KpnI  
Eco47 III Bgl II Ecl136 II EcoRI PstI Asp718 I

TAGTTATTACTAGCGCTACCGGACTCAGATCTCGAGCTCAAGCTTCGAATTCTGCAGTCGACGGTACCGC  
ATCAATAATGATCGCGATGGCCTGAGTCTAGAGCTCGAGTTTCGAAGCTTAAGACGTCAGCTGCCATGGCG

10 20 30 40 50 60 70

BamHI  
ApaI BbeI  
XmaI EheI  
Bsp120 I NarI  
SacII SmaI AgeI NcoI KasI

GGGCCCGGGATCCACCGGTCGCCACCATGGTGAGCAAGGGCGCCGAGCTGTTACCGGCATCGTGCCCAT  
CCCGGGCCCTAGGTGGCCAGCGGTGGTACCACTCGTTCCCGCGGCTCGACAAGTGGCCGTAGCACGGGTA

80 90 100 110 120 130 140

BsrBI  
MscI BcgI

CCTGATCGAGCTGAATGGCGATGTGAATGGCCACAAGTTCAGCGTGAGCGGCGAGGGCGAGGGCGATGCC  
GGACTAGCTCGACTTACCGCTACACTTACCGGTGTTCAAGTCGCACTCGCCGCTCCCGCTCCCGCTACGG

150 160 170 180 190 200 210

BsgI  
BcgI Eco57 I BstEII

ACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCTGTGCCCTGGCCCACCCTGG  
TGGATGCCGTTTCGACTGGGACTTCAAGTAGACGTGGTGGCCGTTTCGACGGACACGGGACCGGGTGGGACC

220 230 240 250 260 270 280

BsgI

TGACCACCCTGAGCTACGGCGTGCAGTGCTTCTCACGCTACCCCGATCACATGAAGCAGCACGACTTCTT  
ACTGGTGGGACTCGATGCCGCACGTCACGAAGAGTGCATGGGGCTAGTGTACTTCGTCTGTGCTGAAGAA

290 300 310 320 330 340 350

Bsu36 I

CAAGAGCGCCATGCCTGAGGGCTACATCCAGGAGCGCACCATCTTCTTCGAGGATGACGGCAACTACAAG  
GTTCTCGCGGTACGGACTCCCGATGTAGGTCTCGCGTGGTAGAAGAAGCTCCTACTGCCGTTGATGTTT

360 370 380 390 400 410 420

BssHII

TCGCGCGCCGAGGTGAAGTTCGAGGGCGATAACCCTGGTGAATCGCATCGAGCTGACCGGCACCGATTTCA  
AGCGCGCGGCTCCACTTCAAGCTCCCGCTATGGGACCACTTAGCGTAGCTCGACTGGCCGTGGCTAAAGT

430 440 450 460 470 480 490

BsrGI  
DraIII BspHI

AGGAGGATGGCAACATCCTGGGCAATAAGATGGAGTACAACGCCCACAATGTGTACATCATGAC  
 TCCTCCTACCGTTGTAGGACCCGTTATTCTACCTCATGTTGATGTTGCGGGTGTACACATGTAGTACTG

500            510            520            530            540            550            560

CGACAAGGCCAAGAATGGCATCAAGGTGAACTTCAAGATCCGCCACAACATCGAGGATGGCAGCGTGCAG  
 GCTGTTCCGGTTCCTTACCGTAGTTCACATTGAAGTTCTAGGCGGTGTTGTAGCTCCTACCGTCGCACGTC

570            580            590            600            610            620            630

PvuII                            BsgI

CTGGCCGACCACTACCAGCAGAATACCCCATCGGCGATGGCCCTGTGCTGCTGCCCGATAACCACTACC  
 GACCGGCTGGTGTATGGTCGTCTTATGGGGGTAGCCGCTACCGGGACACGACGACGGGCTATTGGTGTATGG

640            650            660            670            680            690            700

PpuMI  
EcoNI

TGTCCACCCAGAGCGCCCTGTCCAAGGACCCCAACGAGAAGCGCGATCACATGATCTACTTCCGGCTTCGT  
 ACAGGTGGGTCTCGCGGGACAGGTTTCTGGGGTTGCTCTTCGCGCTAGTGTACTAGATGAAGCCGAAGCA

710            720            730            740            750            760            770

NotI  
EagI

PflMI                            BsrGI                            BsrBI                            XbaI                            BsaBI

GACCGCCGCCGCCATCACCCACGGCATGGATGAGCTGTACAAGTGAGCGGCCGCGACTCTAGATCATAAT  
 CTGGCGGCGGCGGTAGTGGGTGCCGTACCTACTCGACATGTTCACTCGCCGGCGCTGAGATCTAGTATTA

780            790            800            810            820            830            840

DraI

CAGCCATAACACATTTGTAGAGGTTTTACTTGCTTTAAAAAACCTCCCACACCTCCCCCTGAACCTGAAA  
 GTCGGTATGGTGTAAACATCTCCAAAATGAACGAAATTTTTTTGGAGGGTGTGGAGGGGGACTTGGACTTT

850            860            870            880            890            900            910

BsmI  
MfeI                            HpaI

CATAAAATGAATGCAATTGTTGTTGTTAACTTGTATTATTGCAGCTTATAATGGTTACAAATAAAGCAATA  
 GTATTTTACTTACGTTAACAACAACAATTGAACAAATAACGTCGAATATTACCAATGTTTATTTTCGTTAT

920            930            940            950            960            970            980

BsmI

GCATCACAAATTTACAAATAAAGCATTTTTTTTCACTGCATTCTAGTTGTGGTTTGTCCAAACTCATCAA  
 CGTAGTGTTTAAAGTGTTTATTTTCGTAAAAAAGTGACGTAAGATCAACACCAAACAGTTTGTAGTAGTT

990            1000            1010            1020            1030            1040            1050

Afl II SspI

| |

TGTATCTTAAGGCGTAAATTGTAAGCGTTAATATTTTGTAAAATTCGCGTTAAATTTTTGTAAATCAG  
 ACATAGAATTCGCGATTTAACATTTCGCAATTATAAAACAATTTTAAGCGCAATTTAAAAACAATTTAGTC

1060 1070 1080 1090 1100 1110 1120

CTCATTTTTTAACCAATAGGCCGAAATCGGCAAAATCCCTTATAAATCAAAGAATAGACCGAGATAGGG  
 GAGTAAAAAATTGGTTATCCGGCTTTAGCCGTTTTAGGGAATATTTAGTTTTCTTATCTGGCTCTATCCC

1130 1140 1150 1160 1170 1180 1190

DrdI

|

TTGAGTGTGTTCAGTTTGAACAAGAGTCCACTATTAAAGAACGTGGACTCCAACGTCAAAGGGCGAA  
 AACTCACAACAAGGTCAAACCTTGTTCAGGTGATAATTTCTTGCACCTGAGGTTGCAGTTTCCCGCTT

1200 1210 1220 1230 1240 1250 1260

DraIII

|

AAACCGTCTATCAGGGCGATGGCCCACTACGTGAACCATCACCTAATCAAGTTTTTGGGGTCGAGGTG  
 TTTGGCAGATAGTCCCGCTACCGGGTGATGCACTTGGTAGTGGGATTAGTTCAAAAACCCCAGCTCCAC

1270 1280 1290 1300 1310 1320 1330

NaeI  
 NgoMI

| |

CCGTAAAGCACTAAATCGGAACCCTAAAGGGAGCCCCGATTTAGAGCTTGACGGGAAAGCCGGCGAAC  
 GGCATTTTCGTGATTTAGCCTTGGGATTTCCCTCGGGGGCTAAATCTCGAACTGCCCTTTTCGGCCGCTTG

1340 1350 1360 1370 1380 1390 1400

BsrBI

|

GTGGCGAGAAAGGAAGGAAGAAAGCGAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTCACGC  
 CACCGCTCTTTCCCTTCCCTTCTTTTCGCTTTCCCTCGCCCCGCGATCCCGCGACCGTTACATCGCCAGTGCC

1410 1420 1430 1440 1450 1460 1470

TGCGCGTAACCACCACACCCGCCGCGCTTAATGCGCCGCTACAGGGCGCGTCAGGTGGCACTTTTCGGGG  
 ACGCGCATTGGTGGTGTGGGCGGCGGAATTACGCGGCGATGTCCCGCGCAGTCCACCGTGAAAAGCCCC

1480 1490 1500 1510 1520 1530 1540

BspHI  
 BsrBI

| |

AAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAA  
 TTTACACGCGCCTTGGGGATAAACAATAAAAAGATTTATGTAAGTTTATACATAGGCGAGTACTCTGTT

1550 1560 1570 1580 1590 1600 1610

SspI EarI Bsu36 I PvuII

| | | |

TAACCCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAGTCCTGAGGCGGAAAGAACCAGCTGTGGAA  
 ATTGGGACTATTTACGAAGTTATTATAACTTTTCCCTTCTCAGGACTCCGCTTTCTTGGTGCACACCTT

1620 1630 1640 1650 1660 1670 1680

NsiI  
SphI  
Ppu10 I

TGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGAAGTATGCAAAGCATGCATCTC  
ACACACAGTCAATCCCACACCTTTTCAGGGGTCCGAGGGTTCGTCCGTCTTCATACGTTTCGTACGTAGAG

1690            1700            1710            1720            1730            1740            1750

NsiI  
SphI  
Ppu10 I

SexAI

AATTAGTCAGCAACCAGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGAAGTATGCAAAGCATGCATC  
TTAATCAGTCGTTGGTCCACACCTTTTCAGGGGTCCGAGGGTTCGTCCGTCTTCATACGTTTCGTACGTAG

1760            1770            1780            1790            1800            1810            1820

TCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGCCATCCCGCCCCTAACTCCGCCAGTTCCGC  
AGTTAATCAGTCGTTGGTATCAGGGCGGGGATTGAGGCGGGTAGGGCGGGGATTGAGGCGGGTCAAGGCG

1830            1840            1850            1860            1870            1880            1890

Bgl I  
SfiI

NcoI

CCATTCTCCGCCCCATGGCTGACTAATTTTTTTTATTTATGCAGAGGCCGAGGCCCTCGGCCTCTGAG  
GGTAAGAGGCGGGGTACCGACTGATTAATAAAAAATAAATACGTCTCCGGCTCCGGCGGAGCCGGAGACTC

1900            1910            1920            1930            1940            1950            1960

AvrII  
StuI

BseRI            ClaI

CTATTCCAGAAGTAGTGAGGAGGCTTTTTTTGGAGGCCTAGGCTTTTGCAAAGATCGATCAAGAGACAGGA  
GATAAGGTCTTCATCACTCCTCCGAAAAACCTCCGGATCCGAAAACGTTTCTAGCTAGTTCTCTGTCTT

1970            1980            1990            2000            2010            2020            2030

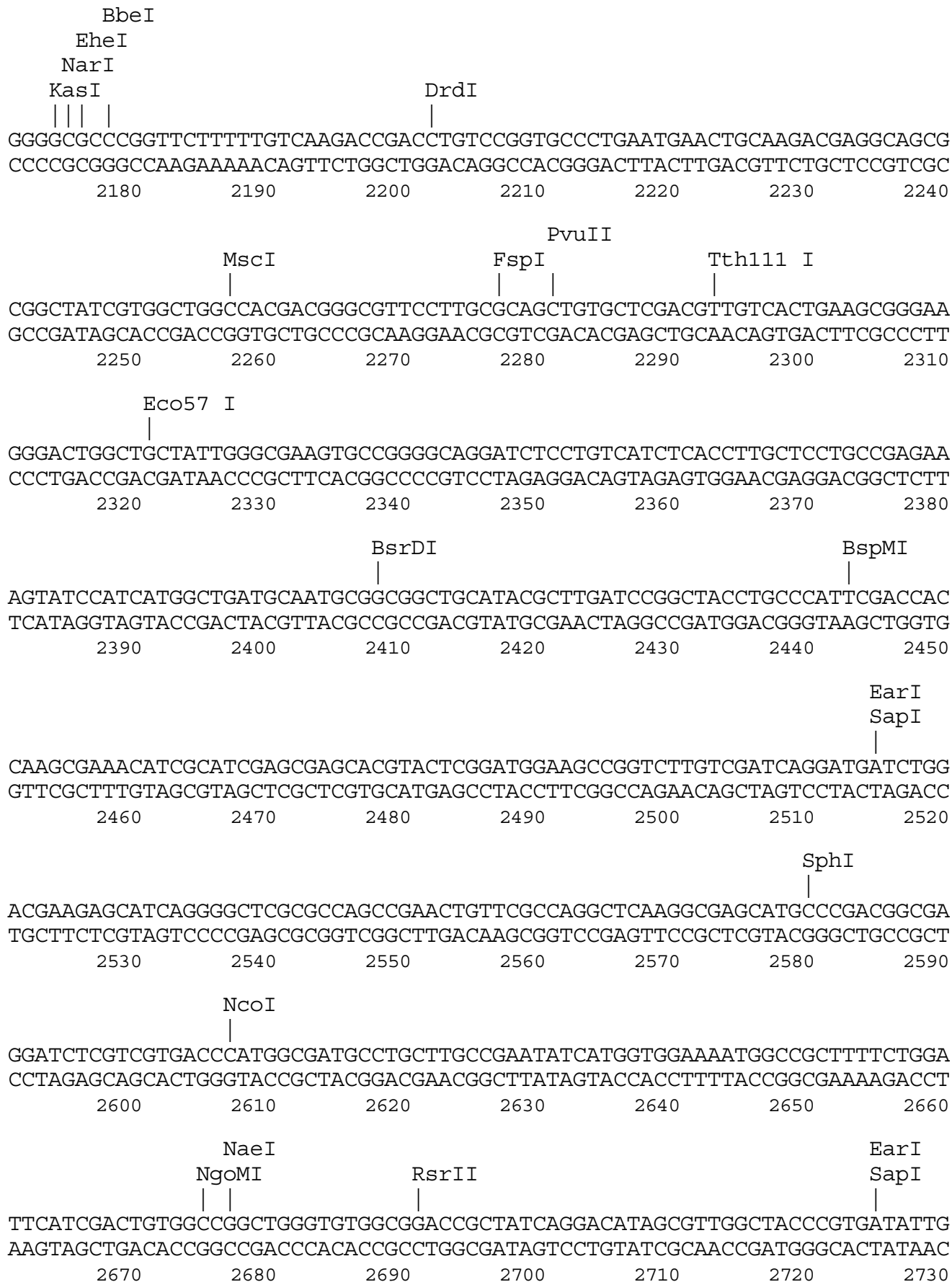
BsaBI            BspMI            EagI

TGAGGATCGTTTTCGCATGATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGC  
ACTCCTAGCAAAGCGTACTAACTTGTTCCTACCTAACGTGCGTCCAAGAGGCCGGCGAACCCACCTCTCCG

2040            2050            2060            2070            2080            2090            2100

TATTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCCGCTGTTCCGGCTGTCAGCGCA  
ATAAGCCGATACTGACCCGTGTTGTCTGTTAGCCGACGAGACTACGGCGGCACAAGCCGACAGTCGCGT

2110            2120            2130            2140            2150            2160            2170



Eco57 I                      BssSI                      BsrBI

|                                      |                                      |

CTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTTCGCA  
 GACTTCTCGAACCGCCGCTTACCCGACTGGCGAAGGAGCACGAAATGCCATAGCGGCGAGGGCTAAGCGT

2740                      2750                      2760                      2770                      2780                      2790                      2800

BsrBI                      BstBI

|                                      |

GCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGCGGGACTCTGGGGTTCGAAATGACCGACC  
 CGCGTAGCGGAAGATAGCGGAAGAACTGCTCAAGAAGACTCGCCCTGAGACCCCAAGCTTTACTGGCTGG

2810                      2820                      2830                      2840                      2850                      2860                      2870

BssSI  
 BspMI

|

AAGCGACGCCAACCTGCCATCACGAGATTTTCGATTCCACCGCCGCCTTCTATGAAAGGTTGGGCTTCGG  
 TTCGCTGCGGGTTGGACGGTAGTGCTCTAAAGCTAAGGTGGCGGCGGAAGATACTTTCCAACCCGAAGCC

2880                      2890                      2900                      2910                      2920                      2930                      2940

NaeI  
 BpmI  
 NgoMI

|                      |

AATCGTTTTCCGGGACGCGCGCTGGATGATCCTCCAGCGCGGGGATCTCATGCTGGAGTTCTTCGCCAC  
 TTAGCAAAGGCCCTGCGGCCGACCTACTAGGAGTTCGCGCCCTAGAGTACGACCTCAAGAAGCGGGTG

2950                      2960                      2970                      2980                      2990                      3000                      3010

BpmI  
 AvrII

|                      |

CCTAGGGGAGGCTAACTGAAACACGGAAGGAGACAATACCGGAAGGAACCCGCGCTATGACGGCAATAA  
 GGATCCCCCTCCGATTGACTTTGTGCCTTCCTCTGTTATGGCCTTCCTTGGGCGCGATACTGCCGTTATT

3020                      3030                      3040                      3050                      3060                      3070                      3080

AAAGACAGAATAAAACGCACGGTGTGGGTGTTTTGTTTCATAAACGCGGGGTTTCGGTCCCAGGGCTGGCA  
 TTTCTGTCTTATTTTGCCTGCCACAACCCAGCAAACAAGTATTTGCGCCCCAAGCCAGGGTCCCAGCCGT

3090                      3100                      3110                      3120                      3130                      3140                      3150

BsaI

|

CTCTGTGATACCCACCGAGACCCCATTTGGGGCCAATACGCCCGGTTTCTTCCTTTTCCCCACCCAC  
 GAGACAGCTATGGGGTGGCTCTGGGGTAACCCCGTTATGCGGGCGCAAAGAAGGAAAAGGGTGGGGTGG

3160                      3170                      3180                      3190                      3200                      3210                      3220

AlwNI                      Bsu36 I

|                                      |

CCCCAAGTTTCGGGTGAAGGCCAGGGCTCGCAGCCAACGTGCGGGCGGCAGGCCCTGCCATAGCCTCAG  
 GGGGTTCAAGCCACTTCCGGGTCCCGAGCGTTCGGTTGCAGCCCCGCGTCCGGGACGGTATCGGAGTC

3230                      3240                      3250                      3260                      3270                      3280                      3290



CGAGGGAGCTTCCAGGGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGA  
GCTCCCTCGAAGGTCCCCCTTTGCGGACCATAGAAATATCAGGACAGCCCAAAGCGGTGGAGACTGAACT  
3930 3940 3950 3960 3970 3980 3990

DrdI

|  
GCGTCGATTTTTGTGATGCTCGTCAGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTTTA  
CGCAGCTAAAAACACTACGAGCAGTCCCCCGCCTCGGATACCTTTTTTGCGGTCGTTGCGCCGGAAAAAT  
4000 4010 4020 4030 4040 4050 4060

BspLU11 I

|  
CGGTTCTGTCCTTTTGGCTGGCCTTTTGGCTCACATGTTCTTTCTGCGTTATCCCCTGATTCTGTGGATA  
GCCAAGGACCGGAAAACGACCGGAAAACGAGTGTACAAGAAAGGACGCAATAGGGGACTAAGACACCTAT  
4070 4080 4090 4100 4110 4120 4130

NsiI

Ppu10 I

| |  
ACCGTATTACCGCCATGCAT  
TGGCATAATGGCGGTACGTA  
4140 4150