

NheI Afl II

TTTGAAGACCCACCCGTAGGTGGCAAGCTAGCTTAAGTAACGCCACTTTGCAAGGCATGGAAAAATAC  
 AAACTTTCTGGGGTGGGCATCCACCGTTTCGATCGAATTCATTGCGGTGAAACGTTCCGTACCTTTTTATG

10                    20                    30                    40                    50                    60                    70

PvuII                    EcoRV

ATAACTGAGAATAGAAAAGTTCAGATCAAGGTCAGGAACAAAGAAACAGCTGAATACCAAACAGGATATC  
 TATTGACTCTTATCTTTTCAAGTCTAGTTCCAGTCCCTTGTTCCTTTGTCGACTTATGGTTTGTCTATAG

80                    90                    100                    110                    120                    130                    140

PvuII

TGTGGTAAGCGGTTCTGCCCCGGCTCAGGGCCAAGAACAGATGAGACAGCTGAGTGATGGGCCAAACAG  
 ACACCATTTCGCCAAGGACGGGGCCGAGTCCCGGTTCTTGTCTACTCTGTGCTGACTCACTACCCGGTTTGTCT

150                    160                    170                    180                    190                    200                    210

EcoRV                    AlwNI

GATATCTGTGGTAAGCAGTTCCTGCCCCGGCTCGGGGCCAAGAACAGATGGTCCCCAGATGCGGTCCAGC  
 CTATAGACACCATTTCGTCAAGGACGGGGCCGAGCCCCGGTTCTTGTCTACCAGGGTCTACGCCAGGTCTG

220                    230                    240                    250                    260                    270                    280

PpuMI

CCTCAGCAGTTTCTAGTGAATCATCAGATGTTTCCAGGGTGCCCCAAGGACCTGAAAATGACCCGTGTACC  
 GGAGTCGTCAAAGATCACTTAGTAGTCTACAAAGTCCACGGGGTTCTGACTTTTACTGGGACATGG

290                    300                    310                    320                    330                    340                    350

BssHII                    BsrBI                    SacI  
 Ecl136 II

TTATTTGAACTAACCAATCAGTTCGCTTCTCGTTCGTTCTGTTTCGCGCTTCCGCTCTCCGAGCTCAATAAA  
 AATAAACTTGATTGGTTAGTCAAGCGAAGAGCGAAGACAAGCGCGCAAGGCGAGAGGCTCGAGTTATTT

360                    370                    380                    390                    400                    410                    420

BbsI                    Asp718 I  
 BssHII                    XmaI  
 AscI                    Tth111 I                    SmaI                    KpnI

AGAGCCCACAACCCCTCACTCGGCGCGCCAGTCTTCCGATAGACTGCGTCGCCCGGGTACCCGTATTCCC  
 TCTCGGGTGTGGGGAGTGAGCCGCGCGGTGAGAAGGCTATCTGACGCAGCGGGCCCATGGGCATAAGGG

430                    440                    450                    460                    470                    480                    490

BcgI                    BsaI                    BseRI                    BsaI

AATAAAGCCTCTTGCTGTTTGCATCCGAATCGTGGTCTCGCTGTTTCCTTGGGAGGGTCTCCTCTGAGTGA  
 TTATTTTCGGAGAACGACAAACGTAGGCTTAGCACCAGAGCGACAAGGAACCTCCCAGAGGAGACTCACT

500                    510                    520                    530                    540                    550                    560

PshAI                    BsaI

TTGACTACCCACGACGGGGTCTTTTCATTTGGGGGCTCGTCCGGGATTTGGAGACCCCTGCCAGGGACC  
 AACTGATGGGTGCTGCCCCAGAAAGTAAACCCCGAGCAGGCCCTAAACCTCTGGGGACGGGTCCCTGG

570                    580                    590                    600                    610                    620                    630

MscI  
|  
ACCGACCCACCACCGGGAGGTAAGCTGGCCAGCAACTTATCTGTGTCTGTCCGATTGTCTAGTGTCTATG  
TGGCTGGGTGGTGGCCCTCCATTTCGACCGGTCGTTGAATAGACACAGACAGGCTAACAGATCACAGATA  
640 650 660 670 680 690 700

SpeI  
|  
TTTGATGTTATGCGCCTGCGTCTGTACTAGTTAGCTAACTAGCTCTGTATCTGGCGGACCCGTGGTGGAA  
AAACTACAATACGCGGACGCAGACATGATCAATCGATTGATCGAGACATAGACCGCTGGGCACCACCTT  
710 720 730 740 750 760 770

EagI BsmBI AatII  
| | |  
CTGACGAGTTCTGAACACCCGGCCGCAACCCTGGGAGACGTCCCAGGGACTTTGGGGCCGTTTTTGTGG  
GACTGCTCAAGACTTGTGGGCCGGCGTTGGGACCCCTCTGCAGGGTCCCTGAAACCCCGGCAAAAACACC  
780 790 800 810 820 830 840

EcoNI Bsu36 I Tth111 I BsmBI  
| | | |  
CCCGACCTGAGGAAGGGAGTCGATGTGGAATCCGACCCCGTCAGGATATGTGGTTCTGGTAGGAGACGAG  
GGGCTGGACTCCTTCCCTCAGCTACACCTTAGGCTGGGGCAGTCTATACACCAAGACCATCCTCTGCTC  
850 860 870 880 890 900 910

AACCTAAAACAGTTCCTCGCCTCCGTCTGAATTTTTGCTTTTCGGTTTGGAAACCGAAGCCGCGCGTCTTGTC  
TTGGATTTTTGTCAAGGGCGGAGGCAGACTTAAAAACGAAAGCCAAACCTTGGCTTCGGCGCGCAGAACAG  
920 930 940 950 960 970 980

Eco47 III PstI PstI  
| | |  
TGCTGCAGCGCTGCAGCATCGTTCTGTGTTGTCTCTGTCTGACTGTGTTTCTGTATTTGTCTGAAAATTA  
ACGACGTCGCGACGTCGTAGCAAGACACAACAGAGACAGACTGACACAAAGACATAAACAGACTTTTAAAT  
990 1000 1010 1020 1030 1040 1050

AhdI Bsu36 I BsrBI  
| | |  
GGGCCAGACTGTTACCACTCCCTTAAGTTTACCTTAGGTCAGTGGAAAGATGTTCGAGCGGATCGCTCAC  
CCCGGTCTGACAATGGTGAGGGGAATTCAAACTGGAATCCAGTGACCTTTCTACAGCTCGCCTAGCGAGTG  
1060 1070 1080 1090 1100 1110 1120

BsmBI EarI BstEII PstI MscI  
| | | | |  
AACCAGTCGGTAGATGTCAAGAAGAGACGTTGGGTTACCTTCTGCTCTGCAGAATGGCCAACCTTTAACG  
TTGGTCAGCCATCTACAGTTCTTCTCTGCAACCCAATGGAAGACGAGACGTCCTTACCGGTTGGAAATTGC  
1130 1140 1150 1160 1170 1180 1190

BsmBI BsaI  
| |  
TCGGATGGCCGCGAGACGGCACCTTTAACCGAGACCTCATCACCAGGTTAAGATCAAGGTCTTTTACC  
AGCCTACCGGCGCTCTGCCGTGGAAATTGGCTCTGGAGTAGTGGGTCCAATTCTAGTTCCAGAAAAGTGG  
1200 1210 1220 1230 1240 1250 1260

PpuMI  
 Tth111 I  
 SexAI  
 | | |  
 TGGCCCGCATGGACACCCAGACCAGGTCCTACATCGTGACCTGGGAAGCCTTGGCTTTTGACCCCCCT  
 ACCGGGCGTACCTGTGGGTCTGGTCCAGGGGATGTAGCACTGGACCCTTCGGAACCGAAAACCTGGGGGA  
 1270 1280 1290 1300 1310 1320 1330

BsrGI BseRI EarI BseRI BsmBI  
 | | | | |  
 CCCTGGGTCAAGCCCTTTGTACACCCTAAGCCTCCGCCTCCTCTTCCTCCATCCGCCCGTCTCTCCCC  
 GGGACCCAGTTCGGGAAACATGTGGGATTCGGAGGCGGAGGAGAAGGAGGTAGGCGGGGCAGAGAGGGGG  
 1340 1350 1360 1370 1380 1390 1400

BbeI  
 EheI  
 KasI  
 EcoNI NarI  
 | |  
 TTGAACCTCCTCGTTCGACCCCGCCTCGATCCTCCCTTTATCCAGCCCTCACTCCTTCTCTAGGCGCCGG  
 AACTTGGAGGAGCAAGCTGGGGCGGAGCTAGGAGGGAAATAGGTCGGGAGTGAGGAAGAGATCCGCGGCC  
 1410 1420 1430 1440 1450 1460 1470

EcoRI BspEI  
 | |  
 AATTCGATCTGATAGCTTGCCACAACCCGTACCAAAGATGGATAGATCCGGAAAGCCTGAACTCACCGC  
 TTAAGGCTAGACTATCGAACGGTGTGGGCATGGTTTCTACCTATCTAGGCCCTTCGGACTTGAGTGGCG  
 1480 1490 1500 1510 1520 1530 1540

AatII BsmBI  
 PshAI | Tth111 I  
 | |  
 GACGTCTGTCGAGAAGTTTCTGATCGAAAAGTTCGACAGCGTCTCCGACCTGATGCAGCTCTCGGAGGGC  
 CTGCAGACAGCTCTTCAAAGACTAGCTTTTTCAAGCTGTCGCAGAGGCTGGACTACGTCGAGAGCCTCCCC  
 1550 1560 1570 1580 1590 1600 1610

BssSI  
 |  
 GAAGAATCTCGTGCTTTCAGCTTCGATGTAGGAGGGCGTGGATATGTCCTGCGGGTAAATAGCTGCGCCG  
 CTTCTTAGAGCACGAAAGTCAAGCTACATCCTCCCGCACCTATAACAGGACGCCATTTATCGACGCGGC  
 1620 1630 1640 1650 1660 1670 1680

EagI BspEI  
 | |  
 ATGGTTTCTACAAAGATCGTTATGTTTATCGGCACCTTGCATCGGCCGCGCTCCCGATTCCGGAAGTGCT  
 TACCAAAGATGTTTCTAGCAATACAAATAGCCGTGAAACGTAGCCGGCGCGAGGGGCTAAGGCCTTCACGA  
 1690 1700 1710 1720 1730 1740 1750

EcoRI ApaLI DraIII  
 | | |  
 TGACATTGGGGAATTCAGCGAGAGCCTGACCTATTGCATCTCCCGCCGTGCACAGGGTGTACGTTGCAA  
 ACTGTAACCCCTTAAGTCGCTCTCGGACTGGATAACGTAGAGGGCGGCACGTGTCCACAGTGAACGTT  
 1760 1770 1780 1790 1800 1810 1820

EagI  
PvuI  
SgfI

BspMI

PstI

NcoI

```

GACCTGCCTGAAACCGAACTGCCCCGCTGTTCTGCAGCCGGTCGCGGAGGCCATGGATGCGATCGCTGCGG
CTGGACGGACTTTGGCTTGACGGGCGACAAGACGTTCGGCCAGCGCCTCCGGTACCTACGCTAGCGACGCC
1830      1840      1850      1860      1870      1880      1890

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BsrBI

RsrII

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CCGATCTTAGCCAGACGAGCGGGTTCGGCCCATTCGGACCGCAAGGAATCGGTCAATACACTACATGGCG
GGCTAGAATCGGTCTGCTCGCCAAGCCGGGTAAGCCTGGCGTTCCTTAGCCAGTTATGTGATGTACCGC
1900      1910      1920      1930      1940      1950      1960

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NdeI

Tth111 I  
DrdI

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TGATTTTCATATGCGCGATTGCTGATCCCCATGTGTATCACTGGCAAACCTGTGATGGACGACACCGTCAGT
ACTAAAGTATACGCGCTAACGACTAGGGGTACACATAGTGACCGTTTGACACTACCTGCTGTGGCAGTCA
1970      1980      1990      2000      2010      2020      2030

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DraIII  
BssSI

```

GCGTCCGTCGCGCAGGCTCTCGATGAGCTGATGCTTTGGGCCGAGGACTGCCCCGAAGTCCGGCACCTCG
CGCAGGCAGCGCGTCCGAGAGCTACTCGACTACGAAACCCGGCTCCTGACGGGGCTTCAGGCCGTGGAGC
2040      2050      2060      2070      2080      2090      2100

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ApaLI

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TGCACGCGGATTTTCGGCTCCAACAATGTCCTGACGGACAATGGCCGCATAACAGCGGTTCATTGACTGGAG
ACGTGCGCCTAAAGCCGAGGTTGTTACAGGACTGCCTGTTACCGGCGTATTGTGCGCCAGTAACTGACCTC
2110      2120      2130      2140      2150      2160      2170

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BpmI

```

CGAGGCGATGTTTCGGGGATTCCCAATACGAGGTCGCCAACATCTTCTTCTGGAGGCCGTGGTTGGCTTGT
GCTCCGCTACAAGCCCCTAAGGGTTATGCTCCAGCGTTGTAGAAGAAGACCTCCGGCACCAACCGAACA
2180      2190      2200      2210      2220      2230      2240

```

BpmI

BsrBI

BspEI

SacII

```

ATGGAGCAGCAGACGCGCTACTTTCGAGCGGAGGCATCCGGAGCTTGCAGGATCGCCGCGGCTCCGGGCGT
TACCTCGTCTGTCGCGATGAAGCTCGCCTCCGTAGGCCCTCGAACGTCTAGCGGCGCCGAGGCCCGCA
2250      2260      2270      2280      2290      2300      2310

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ATATGCTCCGCATTGGTCTTGACCAACTCTATCAGAGCTTGGTTGACGGCAATTTTCGATGATGCAGCTTG
TATACGAGGCGTAACCAGAACTGGTTGAGATAGTCTCGAACCAACTGCCGTTAAAGCTACTACGTCGAAC
2320      2330      2340      2350      2360      2370      2380

```

DrdI

BspEI

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GGCGCAGGGTCGATGCGACGCAATCGTCCGATCCGGAGCCGGGACTGTCTGGGCGTACACAAATCGCCCGC
CCGCGTCCCAGCTACGCTGCGTTAGCAGGCTAGGCCTCGGCCCTGACAGCCCGCATGTGTTTAGCGGGCG
2390      2400      2410      2420      2430      2440      2450

```

EagI ScaI  
AGAAGCGCGGCCGTCTGGACCGATGGCTGTGTAGAAGTACTCGCCGATAGTGGAAACCGACGCCCCAGCA  
TCTTCGCGCCGGCAGACCTGGCTACCGACACATCTTCATGAGCGGCTATCACCTTTGGCTGCGGGGTCGT  
2460 2470 2480 2490 2500 2510 2520

CTCGTCCGAGGGCAAAGGAATAGAGTAGATGCCGACCGAACAAGAGCTGATTTTCGAGAACGCCTCAGCCA  
GAGCAGGCTCCCCTTTCCTTATCTCATCTACGGCTGGCTTGTTCGACTAAAGCTCTTGCGGAGTCGGT  
2530 2540 2550 2560 2570 2580 2590

BcgI  
GCAACTCGCGCGAGCCTAGCAAGGCAAATGCGAGAGAACGGCCTTACGCTTGGTGGCACAGTTCTCGTCC  
CGTTGAGCGCGCTCGGATCGTTCCGTTTACGCTCTCTTGCCGGAATGCGAACCACCGTGTCAAGAGCAGG  
2600 2610 2620 2630 2640 2650 2660

BlpI  
BcgI  
ACAGTTCGCTAAGCTCGCTCGGCTGGGTGCGGGGAGGGCCGGTCGCAGTGATTCAGGCCCTTCTGGATTG  
TGTCAAGCGATTGAGCGAGCCGACCCAGCGCCCTCCCGGCCAGCGTCACTAAGTCCGGGAAGACCTAAC  
2670 2680 2690 2700 2710 2720 2730

BcgI BcgI  
TGTTGGTCCCCAGGGCACGATTGTCATGCCACGCACTCGGGTGATCTGACTGATCCCGCAGATTGGAGA  
ACAACCAGGGGTCCCGTGCTAACAGTACGGGTGCGTGAGCCCACTAGACTGACTAGGGCGTCTAACCTCT  
2740 2750 2760 2770 2780 2790 2800

XhoI  
Bgl II BsgI  
TCGCCGCCCGTGCCTGCCGATTGGGTGCAGATCTCGAGTTTACCACTCCCTATCAGTGATAGAGAAAAGT  
AGCGGCGGGCACGGACGGCTAACCCACGTCTAGAGCTCAAATGGTGAGGGATAGTCACTATCTCTTTTCA  
2810 2820 2830 2840 2850 2860 2870

GAAAGTCGAGTTTACCACTCCCTATCAGTGATAGAGAAAAGTGAAAGTCGAGTTTACCACTCCCTATCAG  
CTTTCAGCTCAAATGGTGAGGGATAGTCACTATCTCTTTTCACTTTCAGCTCAAATGGTGAGGGATAGT  
2880 2890 2900 2910 2920 2930 2940

TGATAGAGAAAAGTGAAAGTCGAGTTTACCACTCCCTATCAGTGATAGAGAAAAGTGAAAGTCGAGTTTA  
ACTATCTCTTTTCACTTTCAGCTCAAATGGTGAGGGATAGTCACTATCTCTTTTCACTTTCAGCTCAAAT  
2950 2960 2970 2980 2990 3000 3010

CCACTCCCTATCAGTGATAGAGAAAAGTGAAAGTCGAGTTTACCACTCCCTATCAGTGATAGAGAAAAGT  
GGTGAGGGATAGTCACTATCTCTTTTCACTTTCAGCTCAAATGGTGAGGGATAGTCACTATCTCTTTTCA  
3020 3030 3040 3050 3060 3070 3080

XmaI  
Asp718 I  
SacI KpnI  
Ecl1136 II SmaI

GAAAGTCGAGTTTACCACTCCCTATCAGTGATAGAGAAAAGTGAAAGTCGAGCTCGGTACCCGGGTTCGAG  
CTTTCAGCTCAAATGGTGAGGGATAGTCACTATCTCTTTTCACTTTCAGCTCGAGCCATGGGCCAGCTC  
3090 3100 3110 3120 3130 3140 3150

SacI  
StuI Ecl1136 II BsmBI

TAGGCGTGTACGGTGGGAGGCCTATATAAGCAGAGCTCGTTTTAGTGAACCGTCAGATCGCCTGGAGACGC  
ATCCGCACATGCCACCCTCCGGATATATTCGTCTCGAGCAAATCACTTGGCAGTCTAGCGGACCTCTGCG  
3160 3170 3180 3190 3200 3210 3220

SacII Ecl1136 II  
BpmI BbsI Bgl I EcoRI

CATCCACGCTGTTTTGACCTCCATAGAAGACACCGGGACCGATCCAGCCTCCGCGGCCCGAATTCGAGC  
GTAGGTGCGACAAAACCTGGAGGTATCTTCTGTGGCCCTGGCTAGGTCGGAGGCGCCGGGGCTTAAGCTCG  
3230 3240 3250 3260 3270 3280 3290

SmaI HindIII  
KpnI BspMI  
Asp718 I PstI SphI  
SacI XmaI BamHI XbaI Sal I Sse8387 I HpaI ClaI BpmI

TCGGTACCCGGGGATCCTCTAGAGTCGACCTGCAGGCATGCAAGCTTGTTAACATCGATAAAAATAAAAAGA  
AGCCATGGGCCCTAGGAGATCTCAGCTGGACGTCGGTACGTTTCGAACAATTGTAGCTATTTTATTTTCT  
3300 3310 3320 3330 3340 3350 3360

NheI Afl II

TTTTATTTAGTCTCCAGAAAAAGGGGGGAATGAAAGACCCACCTGTAGGTTTGGCAAGCTAGCTTAAGT  
AAAATAAATCAGAGGTCTTTTTTCCCCCTTACTTTCTGGGGTGGACATCCAAACCGTTCGATCGAATTCA  
3370 3380 3390 3400 3410 3420 3430

AACGCCATTTTGCAAGGCATGGAAAAATACATAACTGAGAATAGAGAAGTTCAGATCAAGGTCAGGAACA  
TTGCGGTAAAACGTTCCGTACCTTTTTATGTATTGACTCTTATCTCTTCAAGTCTAGTTCAGTCCTTGT  
3440 3450 3460 3470 3480 3490 3500

PvuII EcoRV AlwNI

GATGGAACAGCTGAATATGGGCCAAACAGGATATCTGTGGTAAGCAGTTCCTGCCCCGGCTCAGGGCCAA  
CTACCTTGTCGACTTATAACCCGGTTTGTCTATAGACACCATTTCGTCAAGGACGGGGCCGAGTCCCGGTT  
3510 3520 3530 3540 3550 3560 3570

PvuII EcoRV AlwNI

GAACAGATGGAACAGCTGAATATGGGCCAAACAGGATATCTGTGGTAAGCAGTTCCTGCCCCGGCTCAGG  
CTTGTCTACCTTGTCGACTTATAACCCGGTTTGTCTATAGACACCATTTCGTCAAGGACGGGGCCGAGTCC  
3580 3590 3600 3610 3620 3630 3640

XbaI  
|  
GCCAAGAACAGATGGTCCCCAGATGCGGTCCAGCCCTCAGCAGTTTCTAGAGAACCATCAGATGTTTCCA  
CGTTTCTTGTCTACCAGGGGTCTACGCCAGGTCGGGAGTCGTCAAAGATCTCTTGGTAGTCTACAAAGGT  
3650 3660 3670 3680 3690 3700 3710

PpuMI  
|  
GGGTGCCCAAGGACCTGAAATGACCCTGTGCCTTATTTGAACTAACCAATCAGTTCGCTTCTCGCTTCT  
CCCACGGGGTTCCTGGACTTTACTGGGACACGGAATAAACTTGATTGGTTAGTCAAGCGAAGAGCGAAGA  
3720 3730 3740 3750 3760 3770 3780

BssHII  
|  
GTTTCGCGCGCTTCTGCTCCCCGAGCTCAATAAAAGAGCCCACAACCCCTCACTCGGGGCGCCAGTCCCTCC  
CAAGCGCGCGAAGACGAGGGGCTCGAGTTATTTTCTCGGGTGTGGGGAGTGAGCCCCGCGGTCAGGAGG  
3790 3800 3810 3820 3830 3840 3850  
SacI  
| |  
Ecl136 II  
| |  
BbeI  
|  
EheI  
|  
NarI  
|  
KasI  
| | | |

Asp718 I  
|  
Tth111 I  
|  
XmaI  
|  
SmaI  
| |  
KpnI  
|  
AhdI  
|  
GATTGACTGAGTCGCCCCGGGTACCCGTGTATCCAATAAACCCCTCTTGCAGTTGCATCCGACTTGTGGTCT  
CTAACTGACTCAGCGGGCCCATGGGCACATAGGTTATTTGGGAGAACGTCAACGTAGGCTGAACACCAGA  
3860 3870 3880 3890 3900 3910 3920

BsaI  
|  
BseRI  
|  
BsaI  
|  
AhdI  
|  
CGCTGTTCTTGGGAGGGTCTCCTCTGAGTGATTGACTACCCGTCAGCGGGGGTCTTTTCATTTGGGGGCT  
GCGACAAGGAACCCCTCCAGAGGAGACTCACTAACTGATGGGCAGTCGCCCCAGAAAGTAAACCCCCGA  
3930 3940 3950 3960 3970 3980 3990

BsaI  
|  
CGTCCGGGATCGGGAGACCCCTGCCCAGGGACCACCGACCCACCACCGGGAGGTAAGCTGGCTGCCTCGC  
GCAGGCCCTAGCCCTCTGGGGACGGGTCCCTGGTGGCTGGGTGGTGGCCCTCATTTCGACCGACGGAGCG  
4000 4010 4020 4030 4040 4050 4060

BsmBI  
|  
GCGTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTACAGCTTGTCTGTAA  
CGCAAAGCCACTACTGCCACTTTTGGAGACTGTGTACGTCGAGGGCCTCTGCCAGTGTGCAACAGACATT  
4070 4080 4090 4100 4110 4120 4130

DrdI  
|  
GCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTGGCGGGTGTGGGGGCGCAGCCA  
CGCTACGGCCCTCGTCTGTTCGGGCAGTCCCGCGCAGTCGCCCACAACCGCCCACAGCCCCGCGTCCGT  
4140 4150 4160 4170 4180 4190 4200

Tth111 I  
|  
Bst1107 I  
|  
TGACCCAGTCACGTAGCGATAGCGGAGTGTATACTGGCTTAACTATGCGGCATCAGAGCAGATTGTACTG  
ACTGGGTCAAGTGCATCGCTATCGCCTCACATATGACCGAATTGATACGCCGTAGTCTCGTCTAACATGAC  
4210 4220 4230 4240 4250 4260 4270

ApaLI NdeI  
AGAGTGCACCATATGCGGTGTGAAATACCGCACAGATGCGTAAGGAGAAAATACCGCATCAGGCGCTCTT  
TCTCACGTGGTATACGCCACACTTTATGGCGTGTCTACGCATTCTCTTTTATGGCGTAGTCCGCGAGAA  
4280 4290 4300 4310 4320 4330 4340

EarI SapI BsrBI  
CCGCTTCTCGCTCACTGACTCGCTGCGCTCGGTCGTTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAA  
GGCGAAGGAGCGAGTGACTGAGCGACGCGAGCCAGCAAGCCGACGCCGCTCGCCATAGTCGAGTGAGTTT  
4350 4360 4370 4380 4390 4400 4410

BspLU11 I  
GGCGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAA  
CCGCCATTATGCCAATAGGTGTCTTAGTCCCCTATTGCGTCCTTTCTTTGTACACTCGTTTTCCGGTTCGTT  
4420 4430 4440 4450 4460 4470 4480

AAGGCCAGGAACCGTAAAAAGGCCGCGTTGTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATC  
TTCCGGTCTTTGGCATTTTTTCCGGCGCAACGACCGCAAAAAGGTATCCGAGGCGGGGGACTGCTCGTAG  
4490 4500 4510 4520 4530 4540 4550

DrdI  
ACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATAACCAGGCGTTTTCCCC  
TGTTTTTAGCTGCGAGTTTCACTCTCCACCGCTTTGGGCTGTCTTGATATTTCTATGGTCCGCAAAGGGGG  
4560 4570 4580 4590 4600 4610 4620

BssSI  
TGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCT  
ACCTTCGAGGGAGCACGCGAGAGGACAAGGCTGGGACGGCGAATGGCCTATGGACAGGCGAAAGAGGGA  
4630 4640 4650 4660 4670 4680 4690

TCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCGGTGTAGGTGCTTCGCTCCA  
AGCCCTTCGCACCGCGAAAGAGTATCGAGTGCAGACATCCATAGAGTCAAGCCACATCCAGCAAGCGAGGT  
4700 4710 4720 4730 4740 4750 4760

ApaLI  
AGCTGGGCTGTGTGCACGAACCCCCGTTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGA  
TCGACCCGACACACGTGCTTGGGGGGCAAGTCGGGCTGGCGACGCGAATAGGCCATTGATAGCAGAACT  
4770 4780 4790 4800 4810 4820 4830

AlwNI  
GTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGG  
CAGGTTGGGCCATTCTGTGCTGAATAGCGGTGACCGTCGTTGCGGTGACCATTGTCTTAATCGTCTCGCTCC  
4840 4850 4860 4870 4880 4890 4900

TATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTG  
ATACATCCGCCACGATGTCTCAAGAACTTCACCACCGGATTGATGCCGATGTGATCTTCTGTCATAAAC  
4910 4920 4930 4940 4950 4960 4970





PvuI  
 |  
 ATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTCAGAAGTAAGTTG  
 TACTAGGGGGTACAACACGTTTTTTTCGCCAATCGAGGAAGCCAGGAGGCTAGCAACAGTCTTCATTCAAC  
 5680 5690 5700 5710 5720 5730 5740

GCCGCAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGAT  
 CGGCGTCACAATAGTGAGTACCAATACCGTTCGTGACGTATTAAGAGAATGACAGTACGGTAGGCATTCTA  
 5750 5760 5770 5780 5790 5800 5810

ScaI BcgI  
 | |  
 GCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGGCACCAGTTGCTC  
 CGAAAAGACACTGACCACTCATGAGTTGGTTTCAGTAAGACTCTTATCACATACGCCGCTGGCTCAACGAG  
 5820 5830 5840 5850 5860 5870 5880

BcgI DraI  
 | |  
 TTGCCCGGCGTCAACACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAA  
 AACGGGCCGAGTTGTGCCCTATTATGGCGCGGTGTATCGTCTTGAAATTTTCACGAGTAGTAACCTTTT  
 5890 5900 5910 5920 5930 5940 5950

XmnI Psp1406 I XmnI  
 | | |  
 CGTTCTTCGGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTG  
 GCAAGAAGCCCCGCTTTTGGAGAGTTCCCTAGAATGGCGACAACCTCTAGGTCAAGCTACATTGGGTGAGCAC  
 5960 5970 5980 5990 6000 6010 6020  
 ApaLI  
 |  
 Eco57 I  
 |  
 BssSI  
 |

CACCCAAGTATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA  
 GTGGGTTGACTAGAAGTCGTAGAAAATGAAAGTGGTCGCAAAGACCCACTCGTTTTTGTCTTCCGTTTT  
 6030 6040 6050 6060 6070 6080 6090

EarI SspI  
 | |  
 TGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCCTTTTTCAATATTAT  
 ACGGCGTTTTTTCCCTTATTCCCGCTGTGCCTTTACAACCTTATGAGTATGAGAAGGAAAAAGTTATAATA  
 6100 6110 6120 6130 6140 6150 6160

BspHI BsrBI  
 | |  
 TGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAA  
 ACTTCGTAAATAGTCCCAATAACAGAGTACTCGCCTATGTATAAACTTACATAAATCTTTTTATTTGTTT  
 6170 6180 6190 6200 6210 6220 6230

AatII BspHI  
 | |  
 TAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATT  
 ATCCCCAAGGCGGTGTAAAGGGGCTTTTACGGTGGACTGCAGATTCTTTGGTAATAATAGTACTGTAA  
 6240 6250 6260 6270 6280 6290 6300

BssSI BbsI EcoRI  
 | | |  
 AACCTATAAAAATAGGCGTATCACGAGGCCCTTTCGTCTTCAAGAATTCATACCAGATCACCGAAAACCTG  
 TTGGATATTTTTATCCGCATAGTGCTCCGGGAAAGCAGAAGTTCTTAAGTATGGTCTAGTGGCTTTTTGAC  
 6310 6320 6330 6340 6350 6360 6370

TCCTCCAAATGTGTCCCCCTCACACTCCCAAATTCGCGGGCTTCTGCCTCTTAGACCACTCTACCCTATT  
AGGAGGTTTACACAGGGGGAGTGTGAGGGTTTAAGCGCCC GAAGACGGAGAATCTGGTGAGATGGGATAA  
6380 6390 6400 6410 6420 6430 6440

SacII

CCCCACACTCACCGGAGCCAAAGCCGCGGCCCTTCCGTTTCTTTGCT  
GGGTGTGAGTGGCCTCGGTTTCGGCGCCGGAAGGCAAAGAAACGA  
6450 6460 6470 6480 6490