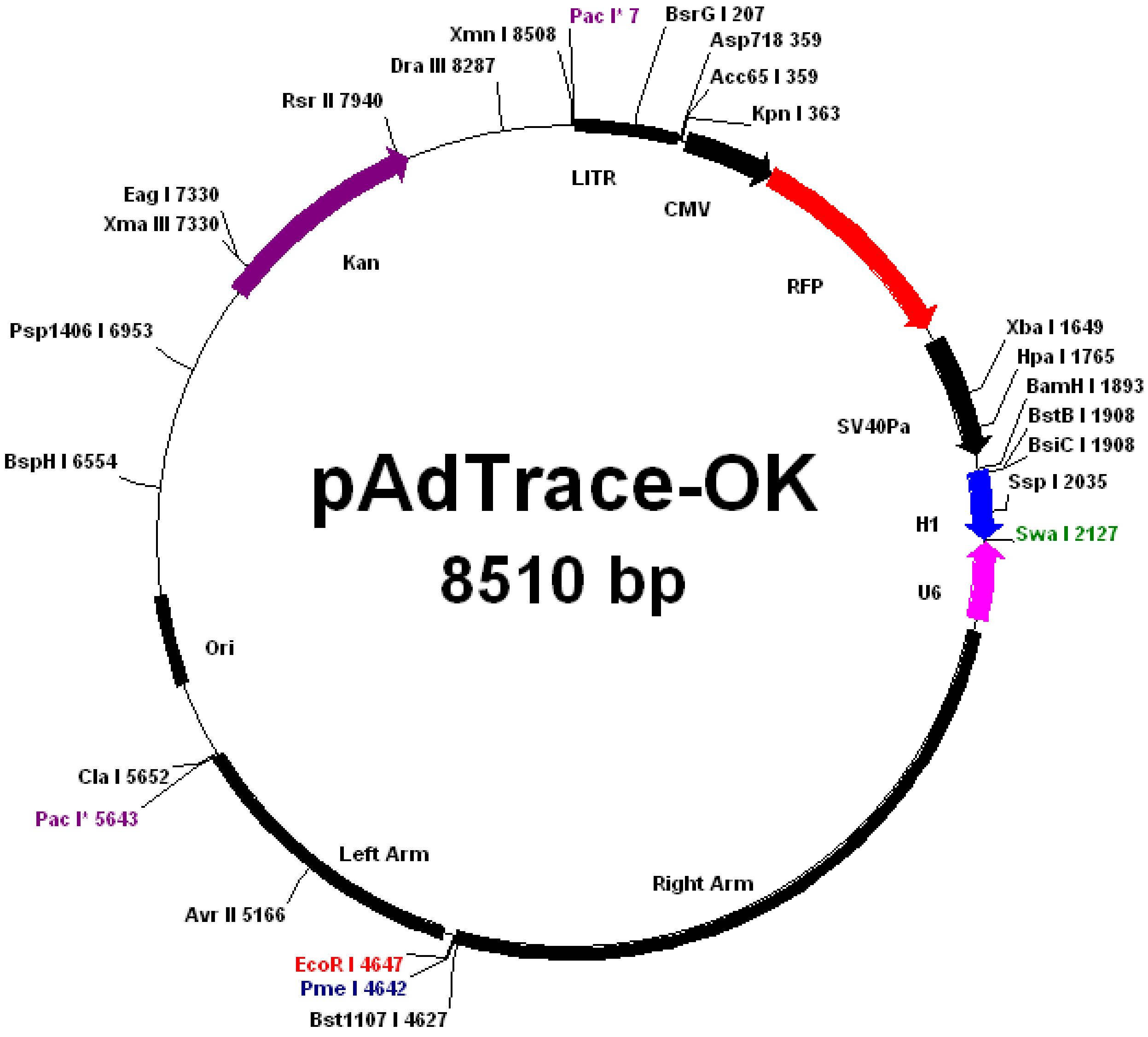
Vector: **pAdTrace-OK**

Antibiotic Selection: Kan

Creator(S): Fang Deng, Qiang Wei, Molecular Oncology Lab of The University of Chicago Medical Center

Date of Construction: August, 2014



pAdTrace-OK Full-Length Sequence

NNNTTAATTAANNNTCCCTTCCAGCTCTCTGCCCCTTTTGGATTGAAGCCAATATGATAATGAGGGGGTGGAGTTTGTGACGTGGCGCGGG
GCGTGGGAACGGGGCGGGTGACGTAGTAGTGTGGCGGAAGTGTGATGTTGCAAGTGTGGCGGAACACATGTAAGCGACGGATGTGGCAAAA
GTGACGTTTTTGGTGTGCGCCGGTGTACACAGGAAGTGACAATTTTCGCGCGGTTTTAGGCGGATGTTGTAGTAAATTTGGGCGTAACCGA
GTAAGATTTGGCCATTTTCGCGGGAAAACTGAATAAGAGGAAGTGAAATCTGAATAATTTTGTGTTACTCATAGCGCGTAANNN**ggtacc**T
AGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCCGCGTTACATAACTTACGGTAAATGGCCCGCCTG
GCTGACCGCCCAACGACCCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATG
GGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAA
TGGCCCGCCTGGCATTATGCCCAGTACATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGG
TGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAG
TTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGG
GAGGTCTATATAAGCAGAGCTGGTTTAGTGAACCGTCAGATCCGCTAGacc**ATG**gcctcctccgaggacgtcatcaaggagttcatgcgct
tcaaggtgcgcatggagggctccgtgaacggccacgagttcgagatcgagggcgagggcgagggccgcccctacgagggcacccagaccgc
caagctgaaggtgaccaagggcggccccctgcccttcgcctgggacatcctgtcccctcagttccagtacggctccaaggcctacgtgaag
caccccgccgacatccccgactacttgaagctgtccttccccgagggcttcaagtgggagcgcgtgatgaacttcgaggacggcggcgtgg
tgaccgtgacccaggactcctccctgcaggacggcgagttcatctacaaggtgaagctgcgcggcaccaacttcccctccgacggccccgt
aatgcagaagaagaccatgggctgggaggcctccaccgagcggatgtaccccgaggacggcgccctgaagggcgagatcaagatgaggctg
aagctgaaggacggcggccactacgacgccgaggtcaagaccacctacatggccaagaagcccgtgcagctgcccggcgcctacaagaccg
acatcaagctggacatcacctcccacaacgaggactacaccatcgtggaacagtacgagcgcgccgagggccgccactccaccggc**gcc**AA
TCCACCGGATCTAGATAACTGATCATAATCAGCCATACCACATTTGTAGAGGTTTTACTTGCTTTAAAAAACCTCCCACACCTCCCCCTGA
ACCTGAAACATAAAATGAATGCAATTGTTGTTGTTAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCATCACAAATTT
CACAAATAAAGCATTTTTTTCACTGCATTCTAGTTGTGGTTTGTCCAAACTCATCAATGTATCTTA**ACGCGGGATCCcagcttaattcgaa**
cgctgacgtcatcaacccgctccaaggaatcgcgggcccagtgtcactaggcgggaacacccagcgcgcgtgcgccctggcaggaagatgg
ctgtgagggacaggggagtggcgccctgcaatatttgcatgtcgctatgtgttctgggaaatcaccataaacgtgaaatgtctttggattt
gggaatcttataagttctgtatgagaccaATTTAAATtcctttccacaagatatataaagccaagaaatcgaaatactttcaagttacggt
aagcatatgatagtccattttaaaacataattttaaaactgcaaactacccaagaaattattactttctacgtcacgtattttgtactaat
atctttgtgtttacagtcaaattaattctaattatctctctaacagccttgtatcgtatatgcaaatatgaaggaatcatgggaaataggc
cctcttcctgcccgaccttgGATCTNNNTAAGGGTGGGAAAGAATATATAAGGTGGGGGTCTTATGTAGTTTTGTATCTGTTTTGCAGCAG
CCGCCGCCGCCATGAGCACCAACTCGTTTGATGGAAGCATTGTGAGCTCATATTTGACAACGCGCATGCCCCCATGGGCCGGGGTGCGTCA
GAATGTGATGGGCTCCAGCATTGATGGTCGCCCCGTCCTGCCCGCAAACTCTACTACCTTGACCTACGAGACCGTGTCTGGAACGCCGTTG
GAGACTGCAGCCTCCGCCGCCGCTTCAGCCGCTGCAGCCACCGCCCGCGGGATTGTGACTGACTTTGCTTTCCTGAGCCCGCTTGCAAGCA
GTGCAGCTTCCCGTTCATCCGCCCGCGATGACAAGTTGACGGCTCTTTTGGCACAATTGGATTCTTTGACCCGGGAACTTAATGTCGTTTC
TCAGCAGCTGTTGGATCTGCGCCAGCAGGTTTCTGCCCTGAAGGCTTCCTCCCCTCCCAATGCGGTTTAAAACATAAATAAAAAACCAGAC
TCTGTTTGGATTTGGATCAAGCAAGTGTCTTGCTGTCTTTATTTAGGGGTTTTGCGCGCGCGGTAGGCCCGGGACCAGCGGTCTCGGTCGT
TGAGGGTCCTGTGTATTTTTTCCAGGACGTGGTAAAGGTGACTCTGGATGTTCAGATACATGGGCATAAGCCCGTCTCTGGGGTGGAGGTA
GCACCACTGCAGAGCTTCATGCTGCGGGGTGGTGTTGTAGATGATCCAGTCGTAGCAGGAGCGCTGGGCGTGGTGCCTAAAAATGTCTTTC
AGTAGCAAGCTGATTGCCAGGGGCAGGCCCTTGGTGTAAGTGTTTACAAAGCGGTTAAGCTGGGATGGGTGCATACGTGGGGATATGAGAT
GCATCTTGGACTGTATTTTTAGGTTGGCTATGTTCCCAGCCATATCCCTCCGGGGATTCATGTTGTGCAGAACCACCAGCACAGTGTATCC
GGTGCACTTGGGAAATTTGTCATGTAGCTTAGAAGGAAATGCGTGGAAGAACTTGGAGACGCCCTTGTGACCTCCAAGATTTTCCATGCAT
TCGTCCATAATGATGGCAATGGGCCCACGGGCGGCGGCCTGGGCGAAGATATTTCTGGGATCACTAACGTCATAGTTGTGTTCCAGGATGA
GATCGTCATAGGCCATTTTTACAAAGCGCGGGCGGAGGGTGCCAGACTGCGGTATAATGGTTCCATCCGGCCCAGGGGCGTAGTTACCCTC
ACAGATTTGCATTTCCCACGCTTTGAGTTCAGATGGGGGGATCATGTCTACCTGCGGGGCGATGAAGAAAACGGTTTCCGGGGTAGGGGAG
ATCAGCTGGGAAGAAAGCAGGTTCCTGAGCAGCTGCGACTTACCGCAGCCGGTGGGCCCGTAAATCACACCTATTACCGGGTGCAACTGGT
AGTTAAGAGAGCTGCAGCTGCCGTCATCCCTGAGCAGGGGGGCCACTTCGTTAAGCATGTCCCTGACTCGCATGTTTTCCCTGACCAAATC
CGCCAGAAGGCGCTCGCCGCCCAGCGATAGCAGTTCTTGCAAGGAAGCAAAGTTTTTCAACGGTTTGAGACCGTCCGCCGTAGGCATGCTT
TTGAGCGTTTGACCAAGCAGTTCCAGGCGGTCCCACAGCTCGGTCACCTGCTCTACGGCATCTCGATCCAGCATATCTCCTCGTTTCGCGG
GTTGGGGCGGCTTTCGCTGTACGGCAGTAGTCGGTGCTCGTCCAGACGGGCCAGGGTCATGTCTTTCCACGGGCGCAGGGTCCTCGTCAGC
GTAGTCTGGGTCACGGTGAAGGGGTGCGCTCCGGGCTGCGCGCTGGCCAGGGTGCGCTTGAGGCTGGTCCTGCTGGTGCTGAAGCGCTGCC
GGTCTTCGCCCTGCGCGTCGGCCAGGTAGCATTTGACCATGGTGTCATAGTCCAGCCCCTCCGCGGCGTGGCCCTTGGCGCGCAGCTTGCC
CTTGGAGGAGGCGCCGCACGAGGGGCAGTGCAGACTTTTGAGGGCGTAGAGCTTGGGCGCGAGAAATACCGATTCCGGGGAGTAGGCATCC
GCGCCGCAGGCCCCGCAGACGGTCTCGCATTCCACGAGCCAGGTGAGCTCTGGCCGTTCGGGGTCAAAAACCAGGTTTCCCCCATGCTTTT
TGATGCGTTTCTTACCTCTGGTTTCCATGAGCCGGTGTCCACGCTCGGTGACGAAAAGGCTGTCCGTGTCCCCGTATACAGACTNNNGTTT
AAACGAATTCNNNTATAAAATGCAAGGTGCTGCTCAAAAAATCAGGCAAAGCCTCGCGCAAAAAAGAAAGCACATCGTAGTCATGCTCATG
CAGATAAAGGCAGGTAAGCTCCGGAACCACCACAGAAAAAGACACCATTTTTCTCTCAAACATGTCTGCGGGTTTCTGCATAAACACAAAA
TAAAATAACAAAAAAACATTTAAACATTAGAAGCCTGTCTTACAACAGGAAAAACAACCCTTATAAGCATAAGACGGACTACGGCCATGCC
GGCGTGACCGTAAAAAAACTGGTCACCGTGATTAAAAAGCACCACCGACAGCTCCTCGGTCATGTCCGGAGTCATAATGTAAGACTCGGTA
AACACATCAGGTTGATTCATCGGTCAGTGCTAAAAAGCGACCGAAATAGCCCGGGGGAATACATACCCGCAGGCGTAGAGACAACATTACA
GCCCCCATAGGAGGTATAACAAAATTAATAGGAGAGAAAAACACATAAACACCTGAAAAACCCTCCTGCCTAGGCAAAATAGCACCCTCCC

```
GCTCCAGAACAACATACAGCGCTTCACAGCGGCAGCCTAACAGTCAGCCTTACCAGTAAAAAAGAAAACCTATTAAAAAAACACCACTCGA
CACGGCACCAGCTCAATCAGTCACAGTGTAAAAAAGGGCCAAGTGCAGAGCGAGTATATATAGGACTAAAAAATGACGTAACGGTTAAAGT
CCACAAAAAACACCCAGAAAACCGCACGCGAACCTACGCCCAGAAACGAAAGCCAAAAAACCCACAACTTCCTCAAATCGTCACTTCCGTT
TTCCCACGTTACGTAACTTCCCATTTTAAGAAAACTACAATTCCCAACACATACAAGTTACTCCGCCCTAAAACCTACGTCACCCGCCCCG
TTCCCACGCCCCGCGCCACGTCACAAACTCCACCCCCTCATTATCATATTGGCTTCAATCCAAAATAAGGTATATTATTGATGATNNNTTA
ATTAAGgatcGATCCNNNCGGTGTGAAATACCGCACAGATGCGTAAGGAGAAAATACCGCATCAGGCGCTCTTCCGCTTCCTCGCTCACTG
ACTCGCTGCGCTCGGTCGTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGC
AGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCCT
GACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCC
TCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACG
CTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCGACCGCTGCGCCTTATCC
GGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATG
TAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGT
TACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTTTGCAAGCAGCAGATTACG
CGCAGAAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGG
TCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAAACTTG
GTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTCGTTCATCCATAGTTGCCTGACTCCCCGTCGTG
TAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAG
CAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGC
TAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGNNNNNNAAAAAGGATCTTCACCTAGATCCTTTTCACGTAGAAAGCCA
GTCCGCAGAAACGGTGCTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAAGGGAAAACGCAAGCGCAAAGAGAAAGCAGGTAGC
TTGCAGTGGGCTTACATGGCGATAGCTAGACTGGGCGGTTTTATGGACAGCAAGCGAACCGGAATTGCCAGCTGGGGCGCCCTCTGGTAAG
GTTGGGAAGCCCTGCAAAGTAAACTGGATGGCTTTCTCGCCGCCAAGGATCTGATGGCGCAGGGGATCAAGCTCTGATCAAGAGACAGGAT
GAGGATCGTTTCGCATGATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCGGCTATGACTGGGCACA
ACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCAGCGCAGGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCC
CTGAATGAACTGCAAGACGAGGCAGCGCGGCTATCGTGGCTGGCCACGACGGGCGTTCCTTGCGCAGCTGTGCTCGACGTTGTCACTGAAG
CGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCATCTCACCTTGCTCCTGCCGAGAAAGTATCCATCATGGC
TGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGAGCACGTACTCGG
ATGGAAGCCGGTCTTGTCGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACTGTTCGCCAGGCTCAAGGCGAGCA
TGCCCGACGGCGAGGATCTCGTCGTGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGA
CTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGAC
CGCTTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAATTTTGTTAA
AATTTTTGTTAAATCAGCTCATTTTTTAACCAATAGGCCGAAATCGGCAACATCCCTTATAAATCAAAAGAATAGACCGCGATAGGGTTGA
GTGTTGTTCCAGTTTGGAACAAGAGTCCACTATTAAAGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCC
ACTACGTGAACCATCACCCAAATCAAGTTTTTTGCGGTCGAGGTGCCGTAAAGCTCTAAATCGGAACCCTAAAGGGAGCCCCCGATTTAGA
GCTTGACGGGGAAAGCCGGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGCGAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTCA
CGCTGCGCGTAACCACCACACCCGCGCGCTTAATGCGCCGNNNNNNN
```

Unique enzymes in pAdTrace-OK

```
BsrG I      T`GTAC,A       207
Acc65 I     G`GTAC,C       359
Asp718      G`GTAC,C       359
Kpn I       G,GTAC`C       363
Xba I       T`CTAG,A       1649
Hpa I       GTT|AAC        1765
BamH I      G`GATC,C       1893
BsiC I      TT`CG,AA       1908
BstB I      TT`CG,AA       1908
Ssp I       AAT|ATT        2035
Swa I       ATTT|AAAT      2127
Bst1107 I   GTA|TAC        4627
Xca I       GTA|TAC        4627
Pme I       CTTT|AAAC      4642
EcoR I      G`AATT,C       4647
Avr II      C`CTAG,G       5166
Cla I       AT`CG,AT       5652
BspH I      T`CATG,A       6554
Psp1406 I   AA`CG,TT       6953
Eag I       C`GGCC,G       7330
Xma III     C`GGCC,G       7330
Rsr II      CG`GWC,CG      7940
Dra III     CAC,NNN`GTG    8287
Xmn I       GAANN|NNTTC    8508
Number of enzymes = 24
```

The following enzymes do not cut in pAdTrace-OK:

```
Afl II      Age I       Asc I       Bgl II      Blp I
BsiW I      Bsu36 I     Eco72 I     EcoN I      EcoR V
Esp I       Fse I       HinD III    Mlu I       Nhe I
Not I       Nru I       PaeR7 I     Pml I       Pvu I
Sal I       Sca I       Sfi I       Spe I       Spl I
```

pAdTrace-OK: sites sorted by name:

```
Aat II     (6)   489     542     625     811
                 982     1921
Acc I      (2)   3688    4626
Acc65 I    (1)   359
Aci I      (112) 88      106     126     151
                 233     243     294     422
                 450     462     476     643
                 734     767     871     892
                 953     1067    1090    1114
                 1189    1267    1336    1406
                 1471    1619    1890    1929
                 1944    1963    2459    2462
                 2465    2591    2654    2657
                 2660    2669    2681    2685
                 2687    2719    2750    2754
                 2884    2973    2991    3119
                 3237    3490    3493    3578
                 3582    3599    3695    3775
                 3914    3931    3989    4032
                 4093    4103    4339    4341
                 4383    4459    4464    4473
                 4801    5073    5187    5217
                 5392    5524    5545    5563
                 5674    5700    5717    5760
                 5767    5788    5879    5907
                 6034    6053    6174    6284
                 6419    6428    6790    6881
                 7011    7134    7230    7333
                 7396    7490    7554    7655
                 7658    7898    7938    7943
                 7993    8009    8035    8177
                 8316    8431    8458    8486
Afl III    (3)   158     4793    5834
Aha II     (15)  486     539     622     808
                 979     1426    1483    1534
                 1633    1918    2024    3427
```

```
                4380    7176    7424
Ahd I      (3)  1142    2991    6727
Alu I      (44) 25      930     1097    1214
                1331    1460    1526    1556
                1781    1901    2504    2737
                2829    3109    3195    3245
                3395    3737    3764    3834
                3840    4043    4363    4420
                4507    4751    4966    5290
                5776    6002    6092    6138
                6395    6916    7045    7098
                7124    7170    7261    7530
                7988    8117    8335    8374
Alw I      (26) 945     1653    1889    1900
                2394    2842    2934    3133
                3524    3687    4065    5649
                5656    6396    6482    6482
                6579    6580    6980    6981
                7244    7261    7291    7602
                7669    7848
AlwN I     (6)  2671    2829    2914    4635
                6250    7048
Apa I      (3)  1950    3484    3790
ApaL I     (2)  3370    6148
Apo I      (7)  257     1816    2128    3381
                4647    8089    8100
Ase I      (6)  5       371     2298    5122
                5641    6899
Asp718     (1)  359
Ava I      (5)  1224    1416    2801    2981
                5056
Ava II     (7)  2985    3009    4034    4175
                4253    6865    7940
Avr II     (1)  5166
BamH I     (1)  1893
Ban I      (17) 359     829     1080    1338
                1425    1533    1632    2023
                3167    3588    4379    5283
                6675    7175    7423    7458
                8324
Ban II     (10) 1023    1950    2506    2563
                2719    3484    3790    4509
                7789    8362
Bbe I      (7)  1429    1537    1636    2027
                4383    7179    7427
Bbs I      (2)  1383    4273
Bbv I      (19) 1535    1790    2464    2467
                2659    2686    2746    2838
                3773    3789    3849    4372
                5232    6253    6256    6462
                7497    7539    8060
Bbv II     (2)  1382    4274
Bcl I      (2)  1659    7265
Bcn I      (18) 1532    2539    2803    2804
                2983    2984    3329    3721
                3811    4220    4446    5058
                5059    6215    6911    7032
                7429    7589
Bfa I      (12) 364     956     1650    1851
                1959    5167    6329    6582
                6917    6983    7125    8438
Bgl I      (7)  454     576     647     2863
                4914    6847    8507
Bpm I      (3)  2547    5175    6797
Bsa I      (6)  2111    2611    2999    3975
                4487    6788
BsaA I     (8)  704     1178    2261    3262
                5473    6997    7728    8287
BsaB I     (3)  1664    2926    7283
BsaH I     (15) 486     539     622     808
                979     1426    1483    1534
                1633    1918    2024    3427
                4380    7176    7424
BsaJ I     (45) 724     961     973     1108
                1132    1168    1225    1285
                1381    1417    1486    1612
                1934    1987    2383    2530
                2537    2685    2801    2981
                3203    3215    3327    3484
                3497    3621    3622    3719
                4147    4163    4234    4315
                4339    4351    4369    4444
                4969    5056    5057    5166
                5994    7029    7233    7587
                7856
BsaW I     (8)  1643    3366    4753    4980
                6040    6187    7157    7455
BseR I     (5)  959     1283    4073    4389
                4958
Bsg I      (5)  1542    2753    3363    4418
                5343
BsiC I     (1)  1908
BsiE I     (6)  3001    5047    5750    6174
                7333    8320
BsiHKA I   (8)  2476    2506    3374    4134
                4509    6152    7537    7727
Bsm I      (4)  1753    1846    3456    4487
BsmA I     (12) 797     2112    2612    2636
                2998    3082    3419    3976
                4486    5079    6789    7267
BsmB I     (2)  3083    3418
BsmF I     (11) 539     690     858     1130
                1149    2024    2998    3867
```

```
                4020    4604    7575
BsoF I     (69) 1067    1115    1268    1332
                1337    1472    1524    1527
                1619    1779    2453    2456
                2459    2462    2465    2648
                2657    2660    2669    2672
                2675    2735    2827    3117
                3491    3494    3762    3765
                3778    3835    3838    3841
                3931    4104    4223    4274
                4342    4361    4383    4464
                4672    5218    5221    5740
                5758    5761    5879    6034
                6177    6242    6245    6451
                6779    7230    7333    7385
                7396    7486    7491    7528
                7569    7656    7659    7662
                7898    7994    8035    8049
                8467
Bsp120 I   (3)  1946    3480    3786
Bsp1286 I  (2)  2476    7727
BspH I     (1)  6554
BspM I     (8)  2838    3700    3740    4060
                4734    7082    7311    7692
BspM II    (2)  4753    4980
Bsr I      (20) 660     1158    1951    3142
                3822    4937    5242    6241
                6254    6368    6774    6892
                6935    7007    7052    7133
                7217    7367    7568    8201
BsrB I     (6)  1406    1931    5189    5767
                8037    8431
BsrD I     (3)  3482    6788    7657
BsrG I     (1)  207
BssH II    (7)  1607    1976    2967    2969
                4225    4356    8488
BssS I     (5)  1035    4386    4493    6007
                8016
Bst1107 I  (1)  4627
BstB I     (1)  1908
BstE II    (4)  1103    1274    4047    4936
BstN I     (20) 454     647     1133    1287
                1989    3027    3204    3498
                3543    3623    4029    4148
                4235    4301    4500    4532
                5862    5983    5996    7811
BstU I     (39) 88      231     233     294
                350     424     1246    1336
                1609    1890    1944    1978
                1980    2520    2687    2756
                2969    2971    2973    3578
                4093    4227    4293    4341
                4358    4428    4461    4698
                5398    5565    5881    6462
                6792    7490    7791    8179
                8471    8488    8490
BstX I     (2)  1505    3471
BstY I     (14) 949     1646    1893    2387
                2835    6475    6486    6572
                6584    6973    6985    7237
                7595    7841
Cac8 I     (52) 450     643     1609    1946
                1978    1982    2524    2591
                2685    2719    2723    2727
                2754    2845    2969    2971
                3193    3211    3580    3928
                4000    4227    4231    4358
                4365    4468    4915    5077
                5396    5765    5851    5888
                6448    6839    7076    7100
                7151    7168    7318    7504
                7723    7789    7795    7823
                7827    7868    7872    7926
                8390    8433    8447    8490
Cfr10 I    (10) 202     1629    3780    4276
                4582    4913    6807    7743
                7924    8388
Cla I      (1)  5652
Csp6 I     (14) 208     360     582     607
                662     695     746     903
                1160    1412    1601    2269
                4115    7729
Dde I      (9)  1150    2713    2822    3396
                3757    3853    6109    6518
                6684
Dpn I      (35) 951     1047    1443    1648
                1661    1895    2389    2837
                2929    3139    3519    3552
                3682    3733    4071    5651
                5655    6402    6477    6488
                6496    6574    6586    6691
                6975    6987    7239    7256
                7267    7286    7597    7675
                7756    7765    7843
DpnII      (35) 949     1045    1441    1646
                1659    1893    2387    2835
                2927    3137    3517    3550
                3680    3731    4069    5649
                5653    6400    6475    6486
                6494    6572    6584    6689
                6973    6985    7237    7254
                7265    7284    7595    7673
                7754    7763    7841
```

```
Dra I      (9)  1704    2127    2206    2219
                2890    4642    4845    6593
                6612
Dra III    (1)  8287
Drd I      (5)  1488    4319    5942    7451
                8242
Dsa I      (10) 724     961     1381    2530
                2685    3484    4163    4315
                4339    7856
Eae I      (12) 283     1031    1472    1507
                4231    4297    4511    4906
                7330    7504    7895    7922
Eag I      (1)  7330
Ear I      (4)  2375    5718    7768    7978
Eco47 III  (3)  3157    4272    5208
Eco57 I    (10) 1118    1451    1475    1481
                2649    2880    4286    6381
                7569    8001
EcoO109 I  (5)  2365    3009    3212    4175
                4469
EcoR I     (1)  4647
EcoR II    (20) 452     645     1131    1285
                1987    3025    3202    3496
                3541    3621    4027    4146
                4233    4299    4498    4530
                5860    5981    5994    7809
Ehe I      (7)  1427    1535    1634    2025
                4381    7177    7425
Fnu4H I    (69) 1067    1115    1268    1332
                1337    1472    1524    1527
                1619    1779    2453    2456
                2459    2462    2465    2648
                2657    2660    2669    2672
                2675    2735    2827    3117
                3491    3494    3762    3765
                3778    3835    3838    3841
                3931    4104    4223    4274
                4342    4361    4383    4464
                4672    5218    5221    5740
                5758    5761    5879    6034
                6177    6242    6245    6451
                6779    7230    7333    7385
                7396    7486    7491    7528
                7569    7656    7659    7662
                7898    7994    8035    8049
                8467
Fok I      (20) 184     258     1125    1182
                1421    2733    3063    3262
                3558    3600    3834    4442
                6693    6874    7046    7229
                7291    7748    7773    8137
Fsp I      (3)  1011    6949    7526
Gdi II     (9)  1032    1473    4298    4510
                4907    7329    7331    7894
                7921
Gsu I      (3)  2548    5176    6798
Hae I      (11) 285     966     1173    1395
                1509    3562    4233    5849
                5860    6312    7506
Hae II     (15) 1429    1537    1636    2027
                3159    3927    4274    4383
                5210    5712    6082    7179
                7427    8438    8446
Hae III    (44) 285     448     641     966
                1033    1066    1117    1173
                1360    1395    1474    1509
                1618    1948    2366    2536
                2980    3213    3482    3496
                3562    3620    3788    3865
                4146    4233    4299    4349
                4470    4513    4908    5317
                5849    5860    5878    6312
                6770    6850    7332    7506
                7897    7924    8137    8279
Hga I      (7)  889     1490    2534    3434
                4283    5944    6522
HgiA I     (8)  2476    2506    3374    4134
                4509    6152    7537    7727
HgiE II    (2)  3772    6413
Hha I      (64) 88      202     233     350
                1000    1012    1246    1336
                1428    1536    1609    1611
                1635    1978    1980    1986
                2026    2522    2843    2969
                2971    2973    3158    3578
                3926    4171    4215    4227
                4229    4243    4273    4293
                4358    4360    4382    4428
                4463    4700    5209    5567
                5711    5744    6014    6081
                6181    6355    6464    6857
                6950    7080    7178    7249
                7418    7426    7490    7527
                7793    8053    8437    8445
                8471    8490    8492    8501
HinC II    (2)  1765    2768
Hind II    (2)  1765    2768
Hinf I     (22) 774     1290    1939    2097
                2350    2791    2911    3044
                3332    3888    4440    4984
                4998    5020    5734    5809
                6205    6722    7909    8043
                8214    8236
HinI I     (15) 486     539     622     808
                979     1426    1483    1534
                1633    1918    2024    3427
                4380    7176    7424
HinP I     (64) 86      200     231     348
                998     1010    1244    1334
                1426    1534    1607    1609
                1633    1976    1978    1984
                2024    2520    2841    2967
                2969    2971    3156    3576
                3924    4169    4213    4225
                4227    4241    4271    4291
                4356    4358    4380    4426
                4461    4698    5207    5565
                5709    5742    6012    6079
                6179    6353    6462    6855
                6948    7078    7176    7247
                7416    7424    7488    7525
                7791    8051    8435    8443
                8469    8488    8490    8499
Hpa I      (1)  1765
Hpa II     (39) 203     1531    1630    1644
                2537    2802    2982    3327
                3367    3617    3719    3781
                3809    4218    4277    4444
                4583    4754    4914    4981
                5057    6041    6188    6214
                6404    6808    6842    6909
                7031    7158    7329    7406
                7428    7456    7587    7677
                7744    7925    8389
Hph I      (19) 120     739     1114    1285
                1336    1557    2058    3052
                4042    4213    4513    4609
                4931    5534    6571    6798
                6972    7603    8289
Kas I      (7)  1425    1533    1632    2023
                4379    7175    7423
Kpn I      (1)  363
Mae I      (12) 364     956     1650    1851
                1959    5167    6329    6582
                6917    6983    7125    8438
Mae II     (32) 81      113     187     486
                498     539     622     703
                808     979     1177    1918
                2074    2255    2260    3031
                3261    3526    5355    5467
                5472    5538    5570    6537
                6953    6996    7540    7727
                8231    8243    8286    8396
Mae III    (41) 77      109     183     218
                266     337     425     512
                861     1103    1274    1280
                1790    1954    2177    2256
                2694    3041    3434    3632
                4047    4196    4598    4918
                4936    5298    5356    5449
                5468    5473    5517    5539
                5571    6190    6253    6369
                6652    7544    7850    8460
                8472
Mbo I      (35) 949     1045    1441    1646
                1659    1893    2387    2835
                2927    3137    3517    3550
                3680    3731    4069    5649
                5653    6400    6475    6486
                6494    6572    6584    6689
                6973    6985    7237    7254
                7265    7284    7595    7673
                7754    7763    7841
Mbo II     (17) 1384    1387    2007    2363
                3425    3515    3716    3753
                4274    5706    6495    6568
                6969    7784    7994    8076
                8426
Mme I      (6)  1377    2619    2814    6048
                6232    8263
Mnl I      (68) 56      304     905     968
                976     979     1010    1043
                1049    1055    1070    1158
                1220    1253    1303    1360
                1385    1405    1412    1444
                1481    1571    1576    1607
                1681    1720    1729    2001
                2377    2660    2879    2884
                2999    3083    3333    3448
                3578    3647    4093    4187
                4240    4345    4367    4370
                4382    4402    4575    4703
                4978    5101    5168    5192
                5450    5597    5732    5942
                6015    6266    6666    6747
                6893    7189    7275    7339
                7475    7832    8024    8315
Msc I      (4)  285     1509    4233    7506
Mse I      (37) 5       9       371     1703
                1764    1885    1903    2126
                2205    2218    2298    2810
                2889    3241    3826    3874
                4641    4844    4947    5122
                5261    5364    5487    5641
                5645    6540    6592    6597
                6611    6664    6899    6938
```

```
                  8097    8109    8126    8224
                  8494
Msl I       (6)   729     2073    3469    3534
                  4728    7861
Msp I       (39)  203     1531    1630    1644
                  2537    2802    2982    3327
                  3367    3617    3719    3781
                  3809    4218    4277    4444
                  4583    4754    4914    4981
                  5057    6041    6188    6214
                  6404    6808    6842    6909
                  7031    7158    7329    7406
                  7428    7456    7587    7677
                  7744    7925    8389
MspA1 I     (14)  1526    2671    2687    2829
                  2991    3737    3764    3840
                  4341    5217    6176    6421
                  7170    7530
Mun I       (2)   1752    2785
Nae I       (3)   4915    7926    8390
Nar I       (7)   1426    1534    1633    2024
                  4380    7176    7424
Nci I       (18)  1531    2538    2802    2803
                  2982    2983    3328    3720
                  3810    4219    4445    5057
                  5058    6214    6910    7031
                  7428    7588
Nco I       (6)   724     961     1381    2530
                  4315    7856
Nde I       (2)   598     2190
NgoM I      (3)   4913    7924    8388
Nla III     (39)  162     668     728     965
                  998     1016    1385    1508
                  2044    2357    2472    2526
                  2534    3066    3116    3339
                  3392    3456    3687    3882
                  3897    4002    4157    4319
                  4546    4580    4727    4733
                  4797    4913    4979    5838
                  6558    7117    7298    7643
                  7829    7860    7886
Nla IV      (41)  361     831     1022    1082
                  1118    1166    1340    1361
                  1427    1535    1634    1895
                  1948    2025    2562    2986
                  3010    3169    3482    3590
                  3611    3754    3788    3864
                  4036    4176    4381    4471
                  4758    5285    5866    5905
                  6677    6771    6812    7177
                  7425    7460    8326    8347
                  8359
Nsi I       (2)   3280    3458
Nsp7524 I   (9)   158     2040    2522    3878
                  3893    3998    4793    5834
                  7825
NspB II     (14)  1526    2671    2687    2829
                  2991    3737    3764    3840
                  4341    5217    6176    6421
                  7170    7530
NspH I      (9)   162     2044    2526    3882
                  3897    4002    4797    5838
                  7829
Pac I       (2)   7       5643
Pal I       (44)  285     448     641     966
                  1033    1066    1117    1173
                  1360    1395    1474    1509
                  1618    1948    2366    2536
                  2980    3213    3482    3496
                  3562    3620    3788    3865
                  4146    4233    4299    4349
                  4470    4513    4908    5317
                  5849    5860    5878    6312
                  6770    6850    7332    7506
                  7897    7924    8137    8279
PflM I      (2)   1387    3032
Ple I       (3)   4992    6213    8222
Pme I       (1)   4642
PpuM I      (2)   3009    4175
Psp1406 I   (1)   6953
PspA I      (3)   2801    2981    5056
Pst I       (5)   1303    2649    2676    3106
                  3839
Pvu II      (7)   1526    2829    3737    3764
                  3840    7170    7530
Rsa I       (14)  209     361     583     608
                  663     696     747     904
                  1161    1413    1602    2270
                  4116    7730
Rsr II      (1)   7940
Sac I       (2)   2506    4509
Sac II      (2)   2688    4342
Sap I       (3)   5718    7768    7978
Sau3A I     (35)  949     1045    1441    1646
                  1659    1893    2387    2835
                  2927    3137    3517    3550
                  3680    3731    4069    5649
                  5653    6400    6475    6486
                  6494    6572    6584    6689
                  6973    6985    7237    7254
                  7265    7284    7595    7673
                  7754    7763    7841
Sau96 I     (32)  447     640     1064    1116
                  1359    1616    1946    1947
                  2365    2534    2979    2985
                  3009    3212    3480    3481
                  3619    3786    3787    3863
                  4034    4144    4175    4253
                  4348    4469    5315    6769
                  6848    6865    7940    8278
ScrF I      (38)  454     647     1133    1287
                  1531    1989    2538    2802
                  2803    2982    2983    3027
                  3204    3328    3498    3543
                  3623    3720    3810    4029
                  4148    4219    4235    4301
                  4445    4500    4532    5057
                  5058    5862    5983    5996
                  6214    6910    7031    7428
                  7588    7811
Sec I       (45)  724     961     973     1108
                  1132    1168    1225    1285
                  1381    1417    1486    1612
                  1934    1987    2383    2530
                  2537    2685    2801    2981
                  3203    3215    3327    3484
                  3497    3621    3622    3719
                  4147    4163    4234    4315
                  4339    4351    4369    4444
                  4969    5056    5057    5166
                  5994    7029    7233    7587
                  7856
SfaN I      (16)  722     1817    3266    3286
                  4071    4463    4544    5672
                  5710    5930    7383    7638
                  7722    7786    7854    8061
Sfc I       (7)   1299    2645    2672    3102
                  3835    6099    6290
Sma I       (3)   2803    2983    5058
SnaB I      (2)   704     5473
Sph I       (3)   2526    4002    7829
Ssp I       (1)   2035
Stu I       (2)   1173    1395
Sty I       (15)  724     961     1108    1168
                  1381    1934    2383    2530
                  3215    4315    4351    4369
                  5166    7233    7856
Swa I       (1)   2127
Taq I       (15)  1042    1048    1258    1908
                  2163    4068    5276    5652
                  5934    7537    7693    7717
                  7753    7915    8320
Tfi I       (10)  1939    2097    2350    2791
                  3332    4440    5020    5809
                  7909    8043
Tsp45 I     (24)  77      109     183     218
                  1103    1274    1280    1954
                  2256    2694    3041    3434
                  4047    4196    4598    4918
                  4936    5298    5449    5539
                  5571    7544    7850    8460
Tth111 I    (2)   2622    7542
Tth111 II   (9)   2741    2907    2946    4034
                  4805    6423    6432    6462
                  7860
Vsp I       (6)   5       371     2298    5122
                  5641    6899
Xba I       (1)   1649
Xca I       (1)   4627
Xcm I       (3)   2915    4506    7240
Xho II      (14)  949     1646    1893    2387
                  2835    6475    6486    6572
                  6584    6973    6985    7237
                  7595    7841
Xma I       (3)   2801    2981    5056
Xma III     (1)   7330
Xmn I       (1)   8508

Site usage in pAdTrace-OK:

Aat II    G,ACGT`C         6     Acc I      GT`MK,AC         2
Acc65 I   G`GTAC,C         1     Aci I      C`CG,C           112
Afl II    C`TTAA,G         -     Afl III    A`CRYG,T         3
Age I     A`CCGG,T         -     Aha II     GR`CG,YC         15
Ahd I     GACNN,N`NNGTC    3     Alu I      AG|CT            44
Alw I     GGATC 8/9        26    AlwN I     CAG,NNN`CTG      6
Apa I     G,GGCC`C         3     ApaL I     G`TGCA,C         2
Apo I     R`AATT,Y         7     Asc I      GG`CGCG,CC       -
Ase I     AT`TA,AT         6     Asp718     G`GTAC,C         1
Ava I     C`YCGR,G         5     Ava II     G`GWC,C          7
Avr II    C`CTAG,G         1     BamH I     G`GATC,C         1
Ban I     G`GYRC,C         17    Ban II     G,RGCY`C         10
Bbe I     G,GCGC`C         7     Bbs I      GAAGAC 8/12      2
Bbv I     GCAGC 13/17      19    Bbv II     GAAGAC 7/11      2
Bcl I     T`GATC,A         2     Bcn I      CC,S`GG          18
Bfa I     C`TA,G           12    Bgl I      GCCN,NNN`NGGC    7
Bgl II    A`GATC,T         -     Blp I      GC`TNA,GC        -
Bpm I     CTGGAG 22/20     3     Bsa I      GGTCTC 7/11      6
BsaA I    YAC|GTR          8     BsaB I     GATNN|NNATC      3
BsaH I    GR`CG,YC         15    BsaJ I     C`CNNG,G         45
BsaW I    W`CCGG,W         8     BseR I     GAGGAG 16/14     5
Bsg I     GTGCAG 22/20     5     BsiC I     TT`CG,AA         1
BsiE I    CG,RY`CG         6     BsiHKA I   G,WGCW`C         8
BsiW I    C`GTAC,G         -     Bsm I      GAATG,C 7        4
BsmA I    GTCTC`/9         12    BsmB I     CGTCTC 7/11      2
BsmF I    GGGAC 15/19      11    BsoF I     GC`N,GC          69
```

```
Bsp120 I   G`GGCC,C        3    Bsp1286 I  G,DGCH`C        2
BspH I     T`CATG,A        1    BspM I     ACCTGC 10/14    8
BspM II    T`CCGG,A        2    Bsr I      ACT,GG`        20
BsrB I     GAG|CGG         6    BsrD I     GCAATG, 8       3
BsrG I     T`GTAC,A        1    BssH II    G`CGCG,C        7
BssS I     C`TCGT,G        5    Bst1107 I  GTA|TAC         1
BstB I     TT`CG,AA        1    BstE II    G`GTNAC,C       4
BstN I     CC`W,GG        20    BstU I     CG|CG          39
BstX I     CCAN,NNNN`NTGG  2    BstY I     R`GATC,Y       14
Bsu36 I    CC`TNA,GG       -    Cac8 I     GCN|NGC        52
Cfr10 I    R`CCGG,Y       10    Cla I      AT`CG,AT        1
Csp6 I     G`TA,C         14    Dde I      C`TNA,G         9
Dpn I      GA|TC          35    DpnII      `GATC,         35
Dra I      TTT|AAA         9    Dra III    CAC,NNN`GTG     1
Drd I      GACNN,NN`NNGTC  5    Dsa I      C`CRYG,G       10
Eae I      Y`GGCC,R       12    Eag I      C`GGCC,G        1
Ear I      CTCTTC 7/10     4    Eco47 III  AGC|GCT         3
Eco57 I    CTGAAG 21/19   10    Eco72 I    CAC|GTG         -
EcoN I     CCTNN`N,NNAGG   -    EcoO109 I  RG`GNC,CY       5
EcoR I     G`AATT,C        1    EcoR II    `CCWGG,        20
EcoR V     GAT|ATC         -    Ehe I      GGC|GCC         7
Esp I      GC`TNA,GC       -    Fnu4H I    GC`N,GC        69
Fok I      GGATG 14/18    20    Fse I      GG,CCGG`CC      -
Fsp I      TGC|GCA         3    Gdi II     `YGGC,CG        9
Gsu I      CTGGAG 21/19    3    Hae I      WGG|CCW        11
Hae II     R,GCGC`Y       15    Hae III    GG|CC          44
Hga I      GACGC 9/14      7    HgiA I     G,WGCW`C        8
HgiE II    ACCNNNNNNGGT -1/132    Hha I      G,CG`C         64
HinC II    GTY|RAC         2    Hind II    GTY|RAC         2
HinD III   A`AGCT,T        -    Hinf I     G`ANT,C        22
HinI I     GR`CG,YC       15    HinP I     G`CG,C         64
Hpa I      GTT|AAC         1    Hpa II     C`CG,G         39
Hph I      GGTGA 12/11    19    Kas I      G`GCGC,C        7
Kpn I      G,GTAC`C        1    Mae I      C`TA,G         12
Mae II     A`CG,T         32    Mae III    `GTNAC,        41
Mbo I      `GATC,         35    Mbo II     GAAGA 12/11    17
Mlu I      A`CGCG,T        -    Mme I      TCCRAC 25/23    6
Mnl I      CCTC 10/10     68    Msc I      TGG|CCA         4
Mse I      T`TA,A         37    Msl I      CAYNN|NNRTG     6
Msp I      C`CG,G         39    MspA1 I    CMG|CKG        14
Mun I      C`AATT,G        2    Nae I      GCC|GGC         3
Nar I      GG`CG,CC        7    Nci I      CC`S,GG        18
Nco I      C`CATG,G        6    Nde I      CA`TA,TG        2
NgoM I     G`CCGG,C        3    Nhe I      G`CTAG,C        -
Nla III    ,CATG`         39    Nla IV     GGN|NCC        41
Not I      GC`GGCC,GC      -    Nru I      TCG|CGA         -
Nsi I      A,TGCA`T        2    Nsp7524 I  R`CATG,Y        9
NspB II    CMG|CKG        14    NspH I     R,CATG`Y        9
Pac I      TTA`AT,TAA      2    PaeR7 I    C`TCGA,G        -
Pal I      GG|CC          44    PflM I     CCAN,NNN`NTGG   2
Ple I      GAGTC 9/10      3    Pme I      CTTT|AAAC       1
Pml I      CAC|GTG         -    PpuM I     RG`GWC,CY       2
Psp1406 I  AA`CG,TT        1    PspA I     C`CCGG,G        3
Pst I      C,TGCA`G        5    Pvu I      CG,AT`CG        -
Pvu II     CAG|CTG         7    Rsa I      GT|AC          14
Rsr II     CG`GWC,CG       1    Sac I      G,AGCT`C        2
Sac II     CC,GC`GG        2    Sal I      G`TCGA,C        -
Sap I      GCTCTTC 8/11    3    Sau3A I    `GATC,         35
Sau96 I    G`GNC,C        32    Sca I      AGT|ACT         -
ScrF I     CC`N,GG        38    Sec I      C`CNNG,G       45
SfaN I     GCATC 9/13     16    Sfc I      C`TRYA,G        7
Sfi I      GGCCN,NNN`NGGCC -    Sma I      CCC|GGG         3
SnaB I     TAC|GTA         2    Spe I      A`CTAG,T        -
Sph I      G,CATG`C        3    Spl I      C`GTAC,G        -
Srf I      GCCC|GGGC       -    Ssp I      AAT|ATT         1
Stu I      AGG|CCT         2    Sty I      C`CWWG,G       15
Swa I      ATTT|AAAT       1    Taq I      T`CG,A         15
Tfi I      G`AWT,C        10    Tsp45 I    `GTSAC,        24
Tth111 I   GACN`N,NGTC     2    Tth111 II  CAARCA 16/14    9
Vsp I      AT`TA,AT        6    Xba I      T`CTAG,A        1
Xca I      GTA|TAC         1    Xcm I      CCANNNN,N`NNNNTGG3
Xho I      C`TCGA,G        -    Xho II     R`GATC,Y       14
Xma  I       C`CCGG,G          3      Xma  III        C`GGCC,G
1
```

```
BsrG I      T`GTAC,A       207
Acc65 I     G`GTAC,C       359
Asp718      G`GTAC,C       359
Kpn I       G,GTAC`C       363
Hpa I       GTT|AAC       1765
Mlu I       A`CGCG,T      1888
BsiC I      TT`CG,AA      1933
BstB I      TT`CG,AA      1933
Ssp I       AAT|ATT       2060
SwaI        ATTT|AAAT     2152
Bst1107 I   GTA|TAC       4652
Xca I       GTA|TAC       4652
Pme I       CTTT|AAAC     4667
Avr II      C`CTAG,G      5191
Cla I       AT`CG,AT      5677
BspH I      T`CATG,A      6579
Psp1406 I   AA`CG,TT      6978
Eag I       C`GGCC,G      7355
Xma III     C`GGCC,G      7355
Rsr II      CG`GWC,CG     7965
Dra III     CAC,NNN`GTG   8312
Xmn I       GAANN|NNTTC   8533
Number of enzymes = 22
```

```
The following enzymes do not cut in pAdTrace-OK:

Afl II     Age I      Asc I      BamH I     Bgl II
Blp I      BsiW I     Bsu36 I    Eco72 I    EcoN I
EcoR V     Esp I      Fse I      HinD III   Nhe I
Not I      Nru I      PaeR7 I    Pml I      Pvu I
Sal I      Sca I      Sfi I      Spe I      Spl I

pAdTrace-OK: sites sorted by name:

Aat II     (6)   489     542     625     811
                982     1946
Acc I      (2)   3713    4651
Acc65 I    (1)   359
Aci I      (111) 88      106     126     151
                233     243     294     422
                450     462     476     643
                734     767     871     892
                953     1067    1090    1114
                1189    1267    1336    1406
                1471    1619    1954    1969
                1988    2484    2487    2490
                2616    2679    2682    2685
                2694    2706    2710    2712
                2744    2775    2779    2909
                2998    3016    3144    3262
                3515    3518    3603    3607
                3624    3720    3800    3939
                3956    4014    4057    4118
                4128    4364    4366    4408
                4484    4489    4498    4826
                5098    5212    5242    5417
                5549    5570    5588    5699
                5725    5742    5785    5792
                5813    5904    5932    6059
                6078    6199    6309    6444
                6453    6815    6906    7036
                7159    7255    7358    7421
                7515    7579    7680    7683
                7923    7963    7968    8018
                8034    8060    8202    8341
                8456    8483    8511
Afl III    (4)   158     1888    4818    5859
Aha II     (15)  486     539     622     808
                979     1426    1483    1534
                1633    1943    2049    3452
                4405    7201    7449
Ahd I      (3)   1142    3016    6752
Alu I      (45)  25      930     1097    1214
                1331    1460    1526    1556
                1781    1917    1926    2529
                2762    2854    3134    3220
                3270    3420    3762    3789
                3859    3865    4068    4388
                4445    4532    4776    4991
                5315    5801    6027    6117
                6163    6420    6941    7070
                7123    7149    7195    7286
                7555    8013    8142    8360
                8399
Alw I      (24)  945     1653    2419    2867
                2959    3158    3549    3712
                4090    5674    5681    6421
                6507    6507    6604    6605
                7005    7006    7269    7286
                7316    7627    7694    7873
AlwN I     (6)   2696    2854    2939    4660
                6275    7073
Apa I      (3)   1975    3509    3815
ApaL I     (2)   3395    6173
Apo I      (8)   257     1816    1909    2153
                3406    4672    8114    8125
Ase I      (6)   5       371     2323    5147
                5666    6924
Asp718     (1)   359
Ava I      (5)   1224    1416    2826    3006
                5081
Ava II     (7)   3010    3034    4059    4200
                4278    6890    7965
Avr II     (1)   5191
Ban I      (17)  359     829     1080    1338
                1425    1533    1632    2048
                3192    3613    4404    5308
                6700    7200    7448    7483
                8349
Ban II     (10)  1023    1975    2531    2588
                2744    3509    3815    4534
                7814    8387
Bbe I      (7)   1429    1537    1636    2052
                4408    7204    7452
Bbs I      (2)   1383    4298
Bbv I      (19)  1535    1790    2489    2492
                2684    2711    2771    2863
                3798    3814    3874    4397
                5257    6278    6281    6487
                7522    7564    8085
Bbv II     (2)   1382    4299
Bcl I      (2)   1659    7290
Bcn I      (18)  1532    2564    2828    2829
                3008    3009    3354    3746
                3836    4245    4471    5083
                5084    6240    6936    7057
```

```
                 7454    7614
Bfa I       (13)  364     956     1650    1851
                 1898    1984    5192    6354
                 6607    6942    7008    7150
                 8463
Bgl I       (7)   454     576     647     2888
                 4939    6872    8532
Bpm I       (3)   2572    5200    6822
Bsa I       (6)   2136    2636    3024    4000
                 4512    6813
BsaA I      (8)   704     1178    2286    3287
                 5498    7022    7753    8312
BsaB I      (3)   1664    2951    7308
BsaH I      (15)  486     539     622     808
                 979     1426    1483    1534
                 1633    1943    2049    3452
                 4405    7201    7449
BsaJ I      (45)  724     961     973     1108
                 1132    1168    1225    1285
                 1381    1417    1486    1612
                 1959    2012    2408    2555
                 2562    2710    2826    3006
                 3228    3240    3352    3509
                 3522    3646    3647    3744
                 4172    4188    4259    4340
                 4364    4376    4394    4469
                 4994    5081    5082    5191
                 6019    7054    7258    7612
                 7881
BsaW I      (8)   1643    3391    4778    5005
                 6065    6212    7182    7480
BseR I      (5)   959     1283    4098    4414
                 4983
Bsg I       (5)   1542    2778    3388    4443
                 5368
BsiC I      (1)   1933
BsiE I      (6)   3026    5072    5775    6199
                 7358    8345
BsiHKA I    (8)   2501    2531    3399    4159
                 4534    6177    7562    7752
Bsm I       (4)   1753    1846    3481    4512
BsmA I      (12)  797     2137    2637    2661
                 3023    3107    3444    4001
                 4511    5104    6814    7292
BsmB I      (2)   3108    3443
BsmF I      (11)  539     690     858     1130
                 1149    2049    3023    3892
                 4045    4629    7600
BsoF I      (69)  1067    1115    1268    1332
                 1337    1472    1524    1527
                 1619    1779    2478    2481
                 2484    2487    2490    2673
                 2682    2685    2694    2697
                 2700    2760    2852    3142
                 3516    3519    3787    3790
                 3803    3860    3863    3866
                 3956    4129    4248    4299
                 4367    4386    4408    4489
                 4697    5243    5246    5765
                 5783    5786    5904    6059
                 6202    6267    6270    6476
                 6804    7255    7358    7410
                 7421    7511    7516    7553
                 7594    7681    7684    7687
                 7923    8019    8060    8074
                 8492
Bsp120 I    (3)   1971    3505    3811
Bsp1286 I   (2)   2501    7752
BspH I      (1)   6579
BspM I      (8)   2863    3725    3765    4085
                 4759    7107    7336    7717
BspM II     (2)   4778    5005
Bsr I       (20)  660     1158    1976    3167
                 3847    4962    5267    6266
                 6279    6393    6799    6917
                 6960    7032    7077    7158
                 7242    7392    7593    8226
BsrB I      (6)   1406    1956    5214    5792
                 8062    8456
BsrD I      (3)   3507    6813    7682
BsrG I      (1)   207
BssH II     (7)   1607    2001    2992    2994
                 4250    4381    8513
BssS I      (5)   1035    4411    4518    6032
                 8041
Bst1107 I   (1)   4652
BstB I      (1)   1933
BstE II     (4)   1103    1274    4072    4961
BstN I      (20)  454     647     1133    1287
                 2014    3052    3229    3523
                 3568    3648    4054    4173
                 4260    4326    4525    4557
                 5887    6008    6021    7836
BstU I      (39)  88      231     233     294
                 350     424     1246    1336
                 1609    1890    1969    2003
                 2005    2545    2712    2781
                 2994    2996    2998    3603
                 4118    4252    4318    4366
                 4383    4453    4486    4723
                 5423    5590    5906    6487
                 6817    7515    7816    8204
                 8496    8513    8515
```

```
BstX I      (2)   1505    3496
BstY I      (13)  949     1646    2412    2860
                 6500    6511    6597    6609
                 6998    7010    7262    7620
                 7866
Cac8 I      (52)  450     643     1609    1971
                 2003    2007    2549    2616
                 2710    2744    2748    2752
                 2779    2870    2994    2996
                 3218    3236    3605    3953
                 4025    4252    4256    4383
                 4390    4493    4940    5102
                 5421    5790    5876    5913
                 6473    6864    7101    7125
                 7176    7193    7343    7529
                 7748    7814    7820    7848
                 7852    7893    7897    7951
                 8415    8458    8472    8515
Cfr10 I     (10)  202     1629    3805    4301
                 4607    4938    6832    7768
                 7949    8413
Cla I       (1)   5677
Csp6 I      (14)  208     360     582     607
                 662     695     746     903
                 1160    1412    1601    2294
                 4140    7754
Dde I       (9)   1150    2738    2847    3421
                 3782    3878    6134    6543
                 6709
Dpn I       (34)  951     1047    1443    1648
                 1661    2414    2862    2954
                 3164    3544    3577    3707
                 3758    4096    5676    5680
                 6427    6502    6513    6521
                 6599    6611    6716    7000
                 7012    7264    7281    7292
                 7311    7622    7700    7781
                 7790    7868
DpnII       (34)  949     1045    1441    1646
                 1659    2412    2860    2952
                 3162    3542    3575    3705
                 3756    4094    5674    5678
                 6425    6500    6511    6519
                 6597    6609    6714    6998
                 7010    7262    7279    7290
                 7309    7620    7698    7779
                 7788    7866
Dra I       (9)   1704    2152    2231    2244
                 2915    4667    4870    6618
                 6637
Dra III     (1)   8312
Drd I       (5)   1488    4344    5967    7476
                 8267
Dsa I       (10)  724     961     1381    2555
                 2710    3509    4188    4340
                 4364    7881
Eae I       (12)  283     1031    1472    1507
                 4256    4322    4536    4931
                 7355    7529    7920    7947
Eag I       (1)   7355
Ear I       (4)   2400    5743    7793    8003
Eco47 III   (3)   3182    4297    5233
Eco57 I     (10)  1118    1451    1475    1481
                 2674    2905    4311    6406
                 7594    8026
EcoO109 I   (5)   2390    3034    3237    4200
                 4494
EcoR I      (2)   1909    4672
EcoR II     (20)  452     645     1131    1285
                 2012    3050    3227    3521
                 3566    3646    4052    4171
                 4258    4324    4523    4555
                 5885    6006    6019    7834
Ehe I       (7)   1427    1535    1634    2050
                 4406    7202    7450
Fnu4H I     (69)  1067    1115    1268    1332
                 1337    1472    1524    1527
                 1619    1779    2478    2481
                 2484    2487    2490    2673
                 2682    2685    2694    2697
                 2700    2760    2852    3142
                 3516    3519    3787    3790
                 3803    3860    3863    3866
                 3956    4129    4248    4299
                 4367    4386    4408    4489
                 4697    5243    5246    5765
                 5783    5786    5904    6059
                 6202    6267    6270    6476
                 6804    7255    7358    7410
                 7421    7511    7516    7553
                 7594    7681    7684    7687
                 7923    8019    8060    8074
                 8492
Fok I       (20)  184     258     1125    1182
                 1421    2758    3088    3287
                 3583    3625    3859    4467
                 6718    6899    7071    7254
                 7316    7773    7798    8162
Fsp I       (3)   1011    6974    7551
Gdi II      (9)   1032    1473    4323    4535
                 4932    7354    7356    7919
                 7946
Gsu I       (3)   2573    5201    6823
```

```
Hae I      (11)  285     966     1173    1395
                 1509    3587    4258    5874
                 5885    6337    7531
Hae II     (15)  1429    1537    1636    2052
                 3184    3952    4299    4408
                 5235    5737    6107    7204
                 7452    8463    8471
Hae III    (44)  285     448     641     966
                 1033    1066    1117    1173
                 1360    1395    1474    1509
                 1618    1973    2391    2561
                 3005    3238    3507    3521
                 3587    3645    3813    3890
                 4171    4258    4324    4374
                 4495    4538    4933    5342
                 5874    5885    5903    6337
                 6795    6875    7357    7531
                 7922    7949    8162    8304
Hga I      (7)   889     1490    2559    3459
                 4308    5969    6547
HgiA I     (8)   2501    2531    3399    4159
                 4534    6177    7562    7752
HgiE II    (2)   3797    6438
Hha I      (64)  88      202     233     350
                 1000    1012    1246    1336
                 1428    1536    1609    1611
                 1635    2003    2005    2011
                 2051    2547    2868    2994
                 2996    2998    3183    3603
                 3951    4196    4240    4252
                 4254    4268    4298    4318
                 4383    4385    4407    4453
                 4488    4725    5234    5592
                 5736    5769    6039    6106
                 6206    6380    6489    6882
                 6975    7105    7203    7274
                 7443    7451    7515    7552
                 7818    8078    8462    8470
                 8496    8515    8517    8526
HinC II    (2)   1765    2793
Hind II    (2)   1765    2793
Hinf I     (22)  774     1290    1964    2122
                 2375    2816    2936    3069
                 3357    3913    4465    5009
                 5023    5045    5759    5834
                 6230    6747    7934    8068
                 8239    8261
HinI I     (15)  486     539     622     808
                 979     1426    1483    1534
                 1633    1943    2049    3452
                 4405    7201    7449
HinP I     (64)  86      200     231     348
                 998     1010    1244    1334
                 1426    1534    1607    1609
                 1633    2001    2003    2009
                 2049    2545    2866    2992
                 2994    2996    3181    3601
                 3949    4194    4238    4250
                 4252    4266    4296    4316
                 4381    4383    4405    4451
                 4486    4723    5232    5590
                 5734    5767    6037    6104
                 6204    6378    6487    6880
                 6973    7103    7201    7272
                 7441    7449    7513    7550
                 7816    8076    8460    8468
                 8494    8513    8515    8524
Hpa I      (1)   1765
Hpa II     (39)  203     1531    1630    1644
                 2562    2827    3007    3352
                 3392    3642    3744    3806
                 3834    4243    4302    4469
                 4608    4779    4939    5006
                 5082    6066    6213    6239
                 6429    6833    6867    6934
                 7056    7183    7354    7431
                 7453    7481    7612    7702
                 7769    7950    8414
Hph I      (19)  120     739     1114    1285
                 1336    1557    2083    3077
                 4067    4238    4538    4634
                 4956    5559    6596    6823
                 6997    7628    8314
Kas I      (7)   1425    1533    1632    2048
                 4404    7200    7448
Kpn I      (1)   363
Mae I      (13)  364     956     1650    1851
                 1898    1984    5192    6354
                 6607    6942    7008    7150
                 8463
Mae II     (33)  81      113     187     486
                 498     539     622     703
                 808     979     1177    1902
                 1943    2099    2280    2285
                 3056    3286    3551    5380
                 5492    5497    5563    5595
                 6562    6978    7021    7565
                 7752    8256    8268    8311
                 8421
Mae III    (41)  77      109     183     218
                 266     337     425     512
                 861     1103    1274    1280
                 1790    1979    2202    2281
```

```
                 2719    3066    3459    3657
                 4072    4221    4623    4943
                 4961    5323    5381    5474
                 5493    5498    5542    5564
                 5596    6215    6278    6394
                 6677    7569    7875    8485
                 8497
Mbo I      (34)  949     1045    1441    1646
                 1659    2412    2860    2952
                 3162    3542    3575    3705
                 3756    4094    5674    5678
                 6425    6500    6511    6519
                 6597    6609    6714    6998
                 7010    7262    7279    7290
                 7309    7620    7698    7779
                 7788    7866
Mbo II     (17)  1384    1387    2032    2388
                 3450    3540    3741    3778
                 4299    5731    6520    6593
                 6994    7809    8019    8101
                 8451
Mlu I      (1)   1888
Mme I      (6)   1377    2644    2839    6073
                 6257    8288
Mnl I      (68)  56      304     905     968
                 976     979     1010    1043
                 1049    1055    1070    1158
                 1220    1253    1303    1360
                 1385    1405    1412    1444
                 1481    1571    1576    1607
                 1681    1720    1729    2026
                 2402    2685    2904    2909
                 3024    3108    3358    3473
                 3603    3672    4118    4212
                 4265    4370    4392    4395
                 4407    4427    4600    4728
                 5003    5126    5193    5217
                 5475    5622    5757    5967
                 6040    6291    6691    6772
                 6918    7214    7300    7364
                 7500    7857    8049    8340
Msc I      (4)   285     1509    4258    7531
Mse I      (37)  5       9       371     1703
                 1764    1885    1928    2151
                 2230    2243    2323    2835
                 2914    3266    3851    3899
                 4666    4869    4972    5147
                 5286    5389    5512    5666
                 5670    6565    6617    6622
                 6636    6689    6924    6963
                 8122    8134    8151    8249
                 8519
Msl I      (6)   729     2098    3494    3559
                 4753    7886
Msp I      (39)  203     1531    1630    1644
                 2562    2827    3007    3352
                 3392    3642    3744    3806
                 3834    4243    4302    4469
                 4608    4779    4939    5006
                 5082    6066    6213    6239
                 6429    6833    6867    6934
                 7056    7183    7354    7431
                 7453    7481    7612    7702
                 7769    7950    8414
MspA1 I    (14)  1526    2696    2712    2854
                 3016    3762    3789    3865
                 4366    5242    6201    6446
                 7195    7555
Mun I      (2)   1752    2810
Nae I      (3)   4940    7951    8415
Nar I      (7)   1426    1534    1633    2049
                 4405    7201    7449
Nci I      (18)  1531    2563    2827    2828
                 3007    3008    3353    3745
                 3835    4244    4470    5082
                 5083    6239    6935    7056
                 7453    7613
Nco I      (6)   724     961     1381    2555
                 4340    7881
Nde I      (2)   598     2215
NgoM I     (3)   4938    7949    8413
Nla III    (39)  162     668     728     965
                 998     1016    1385    1508
                 2069    2382    2497    2551
                 2559    3091    3141    3364
                 3417    3481    3712    3907
                 3922    4027    4182    4344
                 4571    4605    4752    4758
                 4822    4938    5004    5863
                 6583    7142    7323    7668
                 7854    7885    7911
Nla IV     (40)  361     831     1022    1082
                 1118    1166    1340    1361
                 1427    1535    1634    1973
                 2050    2587    3011    3035
                 3194    3507    3615    3636
                 3779    3813    3889    4061
                 4201    4406    4496    4783
                 5310    5891    5930    6702
                 6796    6837    7202    7450
                 7485    8351    8372    8384
Nsi I      (2)   3305    3483
Nsp7524 I  (9)   158     2065    2547    3903
```

```
                  3918     4023     4818     5859
                  7850
NspB II     (14)  1526     2696     2712     2854
                  3016     3762     3789     3865
                  4366     5242     6201     6446
                  7195     7555
NspH I      (9)   162      2069     2551     3907
                  3922     4027     4822     5863
                  7854
PacI        (2)   7        5668
Pal I       (44)  285      448      641      966
                  1033     1066     1117     1173
                  1360     1395     1474     1509
                  1618     1973     2391     2561
                  3005     3238     3507     3521
                  3587     3645     3813     3890
                  4171     4258     4324     4374
                  4495     4538     4933     5342
                  5874     5885     5903     6337
                  6795     6875     7357     7531
                  7922     7949     8162     8304
PflM I      (2)   1387     3057
Ple I       (3)   5017     6238     8247
Pme I       (1)   4667
PpuM I      (2)   3034     4200
Psp1406 I   (1)   6978
PspA I      (3)   2826     3006     5081
Pst I       (5)   1303     2674     2701     3131
                  3864
Pvu II      (7)   1526     2854     3762     3789
                  3865     7195     7555
Rsa I       (14)  209      361      583      608
                  663      696      747      904
                  1161     1413     1602     2295
                  4141     7755
Rsr II      (1)   7965
Sac I       (2)   2531     4534
Sac II      (2)   2713     4367
Sap I       (3)   5743     7793     8003
Sau3A I     (34)  949      1045     1441     1646
                  1659     2412     2860     2952
                  3162     3542     3575     3705
                  3756     4094     5674     5678
                  6425     6500     6511     6519
                  6597     6609     6714     6998
                  7010     7262     7279     7290
                  7309     7620     7698     7779
                  7788     7866
Sau96 I     (32)  447      640      1064     1116
                  1359     1616     1971     1972
                  2390     2559     3004     3010
                  3034     3237     3505     3506
                  3644     3811     3812     3888
                  4059     4169     4200     4278
                  4373     4494     5340     6794
                  6873     6890     7965     8303
ScrF I      (38)  454      647      1133     1287
                  1531     2014     2563     2827
                  2828     3007     3008     3052
                  3229     3353     3523     3568
                  3648     3745     3835     4054
                  4173     4244     4260     4326
                  4470     4525     4557     5082
                  5083     5887     6008     6021
                  6239     6935     7056     7453
                  7613     7836
Sec I       (45)  724      961      973      1108
                  1132     1168     1225     1285
                  1381     1417     1486     1612
                  1959     2012     2408     2555
                  2562     2710     2826     3006
                  3228     3240     3352     3509
                  3522     3646     3647     3744
                  4172     4188     4259     4340
                  4364     4376     4394     4469
                  4994     5081     5082     5191
                  6019     7054     7258     7612
                  7881
SfaN I      (16)  722      1817     3291     3311
                  4096     4488     4569     5697
                  5735     5955     7408     7663
                  7747     7811     7879     8086
Sfc I       (7)   1299     2670     2697     3127
                  3860     6124     6315
Sma I       (3)   2828     3008     5083
SnaB I      (2)   704      5498
Sph I       (3)   2551     4027     7854
Ssp I       (1)   2060
Stu I       (2)   1173     1395
Sty I       (15)  724      961      1108     1168
                  1381     1959     2408     2555
                  3240     4340     4376     4394
                  5191     7258     7881
SwaI        (1)   2152
Taq I       (16)  1042     1048     1258     1907
                  1933     2188     4093     5301
                  5677     5959     7562     7718
                  7742     7778     7940     8345
Tfi I       (10)  1964     2122     2375     2816
                  3357     4465     5045     5834
                  7934     8068
Tsp45 I     (24)  77       109      183      218
                  1103     1274     1280     1979
```

```
                  2281     2719     3066     3459
                  4072     4221     4623     4943
                  4961     5323     5474     5564
                  5596     7569     7875     8485
Tth111 I    (2)   2647     7567
Tth111 II   (9)   2766     2932     2971     4059
                  4830     6448     6457     6487
                  7885
Vsp I       (6)   5        371      2323     5147
                  5666     6924
Xba I       (2)   1649     1897
Xca I       (1)   4652
Xcm I       (3)   2940     4531     7265
Xho II      (13)  949      1646     2412     2860
                  6500     6511     6597     6609
                  6998     7010     7262     7620
                  7866
Xma I       (3)   2826     3006     5081
Xma III     (1)   7355
Xmn I       (1)   8533

Site usage in pAdTrace-OK:

Aat II      G,ACGT`C          6     Acc I       GT`MK,AC          2
Acc65 I     G`GTAC,C          1     Aci I       C`CG,C            111
Afl II      C`TTAA,G          -     Afl III     A`CRYG,T          4
Age I       A`CCGG,T          -     Aha II      GR`CG,YC          15
Ahd I       GACNN,N`NNGTC     3     Alu I       AG|CT             45
Alw I       GGATC 8/9         24    AlwN I      CAG,NNN`CTG       6
Apa I       G,GGCC`C          3     ApaL I      G`TGCA,C          2
Apo I       R`AATT,Y          8     Asc I       GG`CGCG,CC        -
Ase I       AT`TA,AT          6     Asp718      G`GTAC,C          1
Ava I       C`YCGR,G          5     Ava II      G`GWC,C           7
Avr II      C`CTAG,G          1     BamH I      G`GATC,C          -
Ban I       G`GYRC,C          17    Ban II      G,RGCY`C          10
Bbe I       G,GCGC`C          7     Bbs I       GAAGAC 8/12       2
Bbv I       GCAGC 13/17       19    Bbv II      GAAGAC 7/11       2
Bcl I       T`GATC,A          2     Bcn I       CC,S`GG           18
Bfa I       C`TA,G            13    Bgl I       GCCN,NNN`NGGC     7
Bgl II      A`GATC,T          -     Blp I       GC`TNA,GC         -
Bpm I       CTGGAG 22/20      3     Bsa I       GGTCTC 7/11       6
BsaA I      YAC|GTR           8     BsaB I      GATNN|NNATC       3
BsaH I      GR`CG,YC          15    BsaJ I      C`CNNG,G          45
BsaW I      W`CCGG,W          8     BseR I      GAGGAG 16/14      5
Bsg I       GTGCAG 22/20      5     BsiC I      TT`CG,AA          1
BsiE I      CG,RY`CG          6     BsiHKA I    G,WGCW`C          8
BsiW I      C`GTAC,G          -     Bsm I       GAATG,C 7         4
BsmA I      GTCTC`/9          12    BsmB I      CGTCTC 7/11       2
BsmF I      GGGAC 15/19       11    BsoF I      GC`N,GC           69
Bsp120 I    G`GGCC,C          3     Bsp1286 I   G,DGCH`C          2
BspH I      T`CATG,A          1     BspM I      ACCTGC 10/14      8
BspM II     T`CCGG,A          2     Bsr I       ACT,GG`           20
BsrB I      GAG|CGG           6     BsrD I      GCAATG, 8         3
BsrG I      T`GTAC,A          1     BssH II     G`CGCG,C          7
BssS I      C`TCGT,G          5     Bst1107 I   GTA|TAC           1
BstB I      TT`CG,AA          1     BstE II     G`GTNAC,C         4
BstN I      CC`W,GG           20    BstU I      CG|CG             39
BstX I      CCAN,NNNN`NTGG    2     BstY I      R`GATC,Y          13
Bsu36 I     CC`TNA,GG         -     Cac8 I      GCN|NGC           52
Cfr10 I     R`CCGG,Y          10    Cla I       AT`CG,AT          1
Csp6 I      G`TA,C            14    Dde I       C`TNA,G           9
Dpn I       GA|TC             34    DpnII       `GATC,            34
Dra I       TTT|AAA           9     Dra III     CAC,NNN`GTG       1
Drd I       GACNN,NN`NNGTC    5     Dsa I       C`CRYG,G          10
Eae I       Y`GGCC,R          12    Eag I       C`GGCC,G          1
Ear I       CTCTTC 7/10       4     Eco47 III   AGC|GCT           3
Eco57 I     CTGAAG 21/19      10    Eco72 I     CAC|GTG           -
EcoN I      CCTNN`N,NNAGG     -     EcoO109 I   RG`GNC,CY         5
EcoR I      G`AATT,C          2     EcoR II     `CCWGG,           20
EcoR V      GAT|ATC           -     Ehe I       GGC|GCC           7
Esp I       GC`TNA,GC         -     Fnu4H I     GC`N,GC           69
Fok I       GGATG 14/18       20    Fse I       GG,CCGG`CC        -
Fsp I       TGC|GCA           3     Gdi II      `YGGC,CG          9
Gsu I       CTGGAG 21/19      3     Hae I       WGG|CCW           11
Hae II      R,GCGC`Y          15    Hae III     GG|CC             44
Hga I       GACGC 9/14        7     HgiA I      G,WGCW`C          8
HgiE II     ACCNNNNNNGGT -1/132     Hha I       G,CG`C            64
HinC II     GTY|RAC           2     Hind II     GTY|RAC           2
HinD III    A`AGCT,T          -     Hinf I      G`ANT,C           22
HinI I      GR`CG,YC          15    HinP I      G`CG,C            64
Hpa I       GTT|AAC           1     Hpa II      C`CG,G            39
Hph I       GGTGA 12/11       19    Kas I       G`GCGC,C          7
Kpn I       G,GTAC`C          1     Mae I       C`TA,G            13
Mae II      A`CG,T            33    Mae III     `GTNAC,           41
Mbo I       `GATC,            34    Mbo II      GAAGA 12/11       17
Mlu I       A`CGCG,T          1     Mme I       TCCRAC 25/23      6
Mnl I       CCTC 10/10        68    Msc I       TGG|CCA           4
Mse I       T`TA,A            37    Msl I       CAYNN|NNRTG       6
Msp I       C`CG,G            39    MspA1 I     CMG|CKG           14
Mun I       C`AATT,G          2     Nae I       GCC|GGC           3
Nar I       GG`CG,CC          7     Nci I       CC`S,GG           18
Nco I       C`CATG,G          6     Nde I       CA`TA,TG          2
NgoM I      G`CCGG,C          3     Nhe I       G`CTAG,C          -
Nla III     ,CATG`            39    Nla IV      GGN|NCC           40
Not I       GC`GGCC,GC        -     Nru I       TCG|CGA           -
Nsi I       A,TGCA`T          2     Nsp7524 I   R`CATG,Y          9
NspB II     CMG|CKG           14    NspH I      R,CATG`Y          9
PacI        TTA`AT,TAA        2     PaeR7 I     C`TCGA,G          -
Pal I       GG|CC             44    PflM I      CCAN,NNN`NTGG     2
Ple I       GAGTC 9/10        3     Pme I       CTTT|AAAC         1
Pml I       CAC|GTG           -     PpuM I      RG`GWC,CY         2
Psp1406 I   AA`CG,TT          1     PspA I      C`CCGG,G          3
Pst I       C,TGCA`G          5     Pvu I       CG,AT`CG          -
```

Pvu II	CAG|CTG	7	Rsa I	GT|AC	14
Rsr II	CG`GWC,CG	1	Sac I	G,AGCT`C	2
Sac II	CC,GC`GG	2	Sal I	G`TCGA,C	-
Sap I	GCTCTTC 8/11	3	Sau3A I	`GATC,	34
Sau96 I	G`GNC,C	32	Sca I	AGT|ACT	-
ScrF I	CC`N,GG	38	Sec I	C`CNNG,G	45
SfaN I	GCATC 9/13	16	Sfc I	C`TRYA,G	7
Sfi I	GGCCN,NNN`NGGCC	-	Sma I	CCC|GGG	3
SnaB I	TAC|GTA	2	Spe I	A`CTAG,T	-
Sph I	G,CATG`C	3	Spl I	C`GTAC,G	-
Srf I	GCCC|GGGC	-	Ssp I	AAT|ATT	1
Stu I	AGG|CCT	2	Sty I	C`CWWG,G	15
SwaI	ATTT|AAAT	1	Taq I	T`CG,A	16
Tfi I	G`AWT,C	10	Tsp45 I	`GTSAC,	24
Tth111 I	GACN`N,NGTC	2	Tth111 II	CAARCA 16/14	9
Vsp I	AT`TA,AT	6	Xba I	T`CTAG,A	2
Xca I	GTA|TAC	1	Xcm I	CCANNNN,N`NNNNTGG	3
Xho I	C`TCGA,G	-	Xho II	R`GATC,Y	13
Xma I	C`CCGG,G	3	Xma III	C`GGCC,G	1