SUPPLEMENTARY MATERIAL

Pages 1-47 Supplementary Tables S1-S4
Pages 48-57 Supplementary Figures S1-S6
Page 58 Supplementary References

SUPPLEMENTARY TABLES

Table S1. Genes that are significantly upregulated in *ΔbfmR* biofilms compared to *P. aeruginosa* PAO1 biofilms.

Significantly Up-Regulated Genes	Fold Change	*T*-test *P*-value
ig_1063544_1064555_at	3.25	0.125
ig_1117390_1118158_at	3.56	0.011
ig_1118158_1117390_at	2.93	0.029
ig_1204781_1205771_at	4.76	0
ig_1255042_1254309_at	2.38	0.157
ig_1428080_1427453_at	5.31	0.135
ig_1489095_1489815_at	5.03	0.013
ig_1802453_1803626_at	5.94	0.116
ig_189120_188448_at	4.76	0.006
ig_1947041_1948502_at	4.08	0.001
ig_1948502_1947041_at	4.72	0.082
ig_2068728_2069490_at	2.46	0.067
ig_2069490_2068728_at	4.08	0.015
ig_2116265_2117030_at	2.85	0.001
ig_2226144_2226879_at	4.89	0.091
ig_2226879_2226144_at	4.56	0.004
ig_2240302_2239267_at	3.18	0.105
ig_224101_223454_at	4.63	0.213
ig_2243603_2244492_at	4.56	0.021
ig_2244492_2243603_at	2.69	0.037
ig_2281578_2282480_at	5.74	0.039
ig_2282480_2281578_at	4.23	0.001
ig_2341640_2342493_at	5.17	0.021
ig_2342493_2341640_at	2.89	0.002
ig_2557964_2558918_s_at	2.83	0.035
ig_2558918_2557964_s_at	3.68	0.006
ig_2737193_2737881_at	3.29	0.013
ig_2894451_2893827_at	2.75	0.023
ig_2902217_2901558_at	6.11	0.027
ig_2906165_2905549_at	4.96	0.046
ig_2918966_2918211_at	3.89	0.121
ig_297561_299081_at	6.11	0.109
ig_299081_297561_at	4.92	0.001
ig_3051348_3051956_at	3.29	0.127
ig_3112150_3112877_at	5.03	0.017
ig_3112877_3112150_at	2.75	0.047
ig_3122585_3123598_at	8.17	0.12
ig_3123598_3122585_at	3.12	0.017
ig_3129728_3129070_at	2.43	0.036
ig_3206252_3206914_at	4.99	0.035

ig_3206914_3206252_at	6.59	0.144
ig_3265847_3265210_at	3.10	0.011
ig_3475169_3475955_at	4.99	0.043
ig_3475955_3475169_at	2.87	0.019
ig_3514564_3515415_at	8.22	0.082
ig_3527428_3526677_at	3.41	0.091
ig_3545073_3545880_at	3.03	0.087
ig_3546926_3547688_at	2.66	0.2
ig_3648915_3649704_at	3.81	0.038
ig_3649704_3648915_at	2.97	0.001
ig_3677080_3677719_at	3.32	0.002
ig_3677719_3677080_at	3.03	0.01
ig_3705160_3705889_at	5.50	0.029
ig_4240578_4241341_at	2.57	0.022
ig_4294604_4297249_at	6.50	0.065
ig_4297249_4294604_at	4.79	0.085
ig_4321433_4320819_at	4.86	0.042
ig_4326394_4327696_at	6.19	0.066
ig_4327696_4326394_at	2.68	0.011
ig_4448892_4448217_at	3.66	0.022
ig_4509996_4510970_at	3.01	0.025
ig_4584530_4585148_at	3.63	0.071
ig_4629184_4629943_at	5.06	0.001
ig_4705304_4705955_at	3.68	0.094
ig_4888194_4889111_at	3.84	0.028
ig_4956733_4956028_at	9.06	0.254
ig_5087407_5086695_at	6.19	0.013
ig_5131427_5130767_at	6.59	0
ig_5208463_5207621_at	4.47	0.007
ig_5242558_5243177_at	6.59	0.071
ig_5243177_5242558_at	2.99	0.005
ig_5309325_5308424_at	5.58	0.115
ig_53521_56546_at	3.36	0.035
ig_5458499_5457716_at	4.17	0.007
ig_5513111_5513731_at	13.18	0.227
ig_5542072_5541409_at	2.22	0.081
ig_5563964_5563286_at	3.58	0.007
ig_56546_53521_at	7.21	0.058
ig_5775619_5774806_at	3.07	0.008
ig_5820909_5820113_at	6.87	0.081
ig_5992382_5991130_at	3.46	0.006
ig_6090705_6092045_at	3.92	0.067
ig_64729_65339_at	3.68	0.055
ig_65339_64729_at	2.00	0.11
ig_69272_68616_at	2.55	0.006
ig_727608_721556_s_at	15.03	0.289
ig_785174_785969_at	8.22	0.193
ig_785969_785174_at	3.53	0.19
ig_789144_788253_at	2.27	0.028
ig_863300_864095_at	2.23	0.056
ig_864095_863300_at	6.92	0.065

ig_884172_884799_at	2.55	0.163
ig_884799_884172_at	5.50	0.019
ig_901046_901934_at	4.76	0.252
ig_991198_991830_at	2.69	0.025
PA0005_at	2.33	0.02
PA0028_at	2.30	0.034
PA0029_at	3.53	0.008
PA0030_at	4.59	0.014
PA0032_at	2.93	0.014
PA0033_at	2.60	0.042
PA0037_trpI_at	3.23	0.021
PA0042_at	2.33	0.081
PA0052_at	2.83	0.131
PA0053_at	2.30	0.002
PA0057_at	3.78	0.012
PA0061_at	2.99	0.031
PA0064_at	2.08	0.137
PA0069_at	3.23	0.008
PA0071_at	2.85	0.002
PA0073_at	2.17	0.187
PA0092_at	2.17	0.025
PA0097_at	2.28	0.171
PA0103_at	3.66	0.121
PA0104_at	3.81	0.053
PA0116_at	2.28	0.081
PA0118_at	3.92	0.042
PA0122_at	3.71	0.002
PA0123_at	2.66	0.05
PA0128_at	3.81	0.012
PA0129_gabP_at	2.10	0.185
PA0130_at	2.00	0.165
PA0132_at	2.23	0.049
PA0133_at	2.19	0.188
PA0135_at	4.38	0.017
PA0136_at	3.58	0.01
PA0137_at	4.47	0.105
PA0138_at	3.29	0.006
PA0144_at	2.28	0.022
PA0149_at	3.66	0.066
PA0150_at	4.38	0.007
PA0151_at	2.97	0.028
PA0152_pcaQ_at	3.03	0.011
PA0161_at	3.07	0.038
PA0162_at	2.93	0.015
PA0163_at	7.21	0.096
PA0164_at	3.48	0.003
PA0168_at	3.27	0.001
PA0174_at	2.30	0.021
PA0182_at	4.82	0.02
PA0183_atsA_at	3.78	0.051
PA0185_at	4.50	0.006

PA0186_at	3.27	0.05
PA0187_at	2.99	0.013
PA0188_at	3.56	0.016
PA0189_at	3.63	0.072
PA0191_at	3.73	0.12
PA0192_at	3.73	0.025
PA0194_at	3.92	0.046
PA0197_at	3.16	0.015
PA0198_exbB1_at	4.20	0.062
PA0199_exbD1_at	4.96	0.03
PA0200_i_at	2.00	0.142
PA0201_at	2.46	0.032
PA0202_at	3.39	0.008
PA0204_at	4.63	0.069
PA0206_at	2.39	0.017
PA0207_at	3.39	0.058
PA0209_at	2.60	0.086
PA0210_mdcC_at	2.85	0.139
PA0211_mdcD_at	2.75	0.008
PA0213_at	4.59	0.044
PA0215_at	2.10	0.049
PA0217_at	2.20	0.014
PA0219_at	3.07	0.038
PA0221_at	2.83	0.066
PA0223_at	3.25	0.002
PA0225_at	2.25	0.034
PA0226_at	2.55	0.031
PA0227_at	3.01	0.086
PA0228_pcaF_at	2.75	0.03
PA0232_pcaC_at	3.03	0.109
PA0235_pcaK_at	6.92	0.124
PA0236_at	2.53	0.003
PA0238_at	4.66	0.016
PA0239_at	3.81	0.002
PA0240_at	3.58	0.055
PA0241_at	4.06	0.038
PA0242_at	3.39	0.029
PA0245_aroQ2_at	2.55	0.011
PA0247_pobA_at	4.20	0.015
PA0248_at	3.14	0.002
PA0251_at	4.06	0.134
PA0254_at	2.58	0.012
PA0257_at	3.43	0.051
PA0258_at	2.55	0.043
PA0259_at	2.01	0.019
PA0260_at	2.62	0.152
PA0261_at	2.95	0.121
PA0264_at	4.82	0.051
PA0268_at	2.27	0.023
PA0270_at	2.28	0.003
PA0271_at	2.68	0.086

PA0275_at	2.51	0.009
PA0279_at	4.41	0.018
PA0288_speB1_at	5.35	0.091
PA0290_at	2.13	0.003
PA0306_at	4.92	0.028
PA0308_at	2.43	0.04
PA0310_at	2.35	0.016
PA0321_at	3.86	0.077
PA0325_at	4.41	0.029
PA0333_at	2.46	0.132
PA0334_at	4.06	0.014
PA0339_at	2.22	0.059
PA0343_at	2.38	0.062
PA0345_at	3.10	0.059
PA0347_glpQ_at	2.20	0.035
PA0348_at	2.89	0.011
PA0349_at	6.45	0.012
PA0351_at	2.25	0.02
PA0360_at	2.41	0.089
PA0368_at	3.01	0.05
PA0375_ftsX_at	2.10	0.026
PA0377_at	2.00	0.046
PA0378_at	3.53	0.053
PA0379_at	2.13	0.082
PA0383_at	4.53	0.015
PA0386_at	2.01	0.042
PA0397_at	3.16	0.064
PA0398_at	2.55	0.179
PA0417_at	4.03	0.024
PA0424_mexR_at	2.04	0.104
PA0434_at	5.13	0.073
PA0435_at	5.70	0.03
PA0444_at	3.20	0.112
PA0457_at	2.41	0.012
PA0460_at	2.17	0
PA0466_at	4.26	0.012
PA0470_at	3.01	0.079
PA0471_at	2.08	0.178
PA0472_at	2.07	0.009
PA0475_at	3.86	0.032
PA0479_at	2.41	0.04
PA0481_at	5.10	0
PA0486_at	2.08	0.084
PA0488_at	2.14	0.042
PA0494_at	3.12	0.04
PA0495_at	3.61	0.027
PA0499_at	4.69	0.009
PA0522_r_at	2.85	0.106
PA0531_at	2.33	0.082
PA0533_at	3.03	0.147
PA0539_at	6.06	0.068

PA0544_at	2.23	0.021
PA0549_at	2.48	0.003
PA0559_at	2.75	0.002
PA0560_at	3.05	0.005
PA0561_at	5.24	0.119
PA0564_at	3.14	0.064
PA0568_at	2.83	0.013
PA0569_at	2.35	0.012
PA0574_at	3.12	0.005
PA0580_gcp_at	3.25	0.09
PA0583_at	2.87	0.006
PA0584_cca_at	2.41	0.085
PA0585_at	2.14	0.168
PA0599_at	2.01	0.237
PA0610_prtN_at	3.14	0.038
PA0612_i_at	2.51	0.021
PA0613_at	3.32	0.075
PA0614_at	2.01	0.157
PA0632_at	2.69	0.029
PA0643_at	2.85	0.232
PA0669_at	5.24	0.057
PA0670_at	4.29	0.001
PA0672_at	2.33	0.033
PA0673_at	2.81	0.012
PA0675_at	4.50	0.163
PA0676_at	3.76	0.004
PA0677_at	4.86	0.003
PA0678_i_at	5.28	0.169
PA0679_at	5.86	0.101
PA0684_at	5.35	0.093
PA0689_at	3.43	0.067
PA0693_exbB2_at	3.34	0.036
PA0694_exbD2_at	2.43	0.061
PA0696_at	3.48	0.111
PA0697_at	5.28	0.004
PA0699_at	3.05	0.007
PA0700_at	3.32	0.082
PA0703_at	3.32	0.074
PA0708_at	3.71	0.089
PA0709_at	3.97	0.036
PA0710_gloA2_at	4.47	0.05
PA0711_at	3.66	0.029
PA0712_at	2.64	0.004
PA0724_at	8.94	0.289
PA0725_at	13.93	0.253
PA0726_at	11.96	0.35
PA0727_at	7.16	0.136
PA0751_at	4.53	0.119
PA0752_at	3.58	0.027
PA0755_at	2.07	0.013
PA0756_at	3.18	0.024

PA0757_at	2.85	0.006
PA0760_at	2.30	0.007
PA0772_recO_at	2.91	0.122
PA0774_at	3.01	0.099
PA0776_at	2.16	0.055
PA0781_at	2.85	0.085
PA0785_at	4.26	0.162
PA0786_at	6.96	0.144
PA0787_at	2.77	0.005
PA0790_at	4.50	0.031
PA0791_at	3.05	0.029
PA0798_at	2.50	0.124
PA0800_at	2.93	0.002
PA0801_at	4.14	0.069
PA0802_i_at	3.92	0.012
PA0805_at	3.36	0.301
PA0806_i_at	3.20	0.096
PA0809_at	4.56	0.024
PA0812_at	2.10	0.055
PA0813_at	2.64	0.097
PA0816_at	4.66	0.002
PA0817_at	2.45	0.045
PA0818_at	2.35	0.14
PA0819_f_at	2.97	0.012
PA0823_at	5.13	0.035
PA0828_at	4.76	0.073
PA0829_at	3.20	0.039
PA0843_plcR_at	2.66	0.012
PA0845_at	5.03	0.26
PA0846_at	2.04	0.001
PA0849_trxB2_at	3.07	0.005
PA0859_at	2.17	0.145
PA0860_at	2.38	0.012
PA0864_at	3.10	0.028
PA0866_aroP2_at	2.51	0.021
PA0875_at	7.06	0.065
PA0881_at	3.86	0.013
PA0884_at	3.03	0.047
PA0907_at	2.87	0.039
PA0909_i_at	2.77	0.162
PA0912_at	5.28	0.005
PA0921_at	2.03	0.136
PA0922_at	2.48	0.201
PA0923_dinP_at	3.53	0.123
PA0929_at	4.59	0.065
PA0930_at	3.71	0.091
PA0931_at	3.66	0.076
PA0932_cysM_at	2.00	0.184
PA0933_ygcA_at	2.31	0.026
PA0935_at	2.14	0.042
PA0940_at	2.19	0.045

PA0942_at	3.07	0
PA0948_at	3.32	0.068
PA0975_at	2.60	0.006
PA0978_s_at	3.48	0.065
PA0979_s_at	2.87	0.005
PA0980_at	3.92	0.054
PA0987_at	5.66	0.01
PA0988_at	2.91	0.008
PA0989_at	3.14	0.045
PA0993_at	7.52	0.142
PA0994_at	4.35	0.124
PA0995_ogt_at	2.08	0.08
PA1001_phnA_at	2.30	0.076
PA1006_at	2.85	0.097
PA1014_at	2.13	0.047
PA1016_at	2.06	0.043
PA1017_pauA_at	4.63	0.087
PA1018_at	3.94	0.11
PA1021_at	2.08	0.027
PA1025_at	5.06	0
PA1026_at	2.11	0.022
PA1028_at	3.29	0.068
PA1029_at	2.23	0.06
PA1030_at	2.23	0.149
PA1038_at	2.50	0.089
PA1044_at	2.57	0.061
PA1045_at	2.01	0.071
PA1046_at	2.91	0.022
PA1051_at	2.87	0.002
PA1056_at	2.38	0.024
PA1058_at	2.27	0.159
PA1059_at	3.66	0.055
PA1075_at	2.60	0.104
PA1104_fliI_at	3.12	0.066
PA1105_fliJ_at	2.83	0.015
PA1107_at	2.75	0.154
PA1111_at	3.46	0.02
PA1112_at	2.07	0.015
PA1120_at	2.17	0.212
PA1122_at	2.35	0.112
PA1125_at	2.13	0.024
PA1127_at	3.03	0.033
PA1130_at	3.97	0.04
PA1131_at	6.41	0.016
PA1133_at	3.92	0.082
PA1134_at	2.69	0.046
PA1136_at	4.06	0.031
PA1137_at	3.81	0.044
PA1139_at	2.28	0.048
PA1143_at	4.20	0.067
PA1144_at	3.58	0.07

PA1145_at	2.17	0.245
PA1146_at	3.92	0.066
PA1147_at	6.96	0.031
PA1149_at	3.71	0.108
PA1150_pys2_at	2.16	0.038
PA1153_at	3.48	0.062
PA1163_at	3.61	0.038
PA1165_at	3.84	0.01
PA1167_at	2.30	0.06
PA1168_at	3.16	0.065
PA1181_at	2.08	0.002
PA1183_dctA_at	2.58	0.122
PA1184_at	3.78	0.004
PA1185_at	3.76	0.001
PA1188_at	2.53	0.023
PA1194_at	3.56	0.003
PA1197_at	2.00	0.133
PA1209_at	2.01	0.096
PA1212_at	5.54	0.004
PA1213_at	3.53	0.007
PA1217_at	5.10	0.017
PA1219_at	3.68	0.035
PA1220_at	4.32	0.001
PA1221_at	3.92	0.02
PA1222_at	2.57	0.025
PA1224_at	4.00	0.008
PA1226_at	2.60	0.008
PA1230_at	4.00	0.017
PA1231_at	5.24	0.011
PA1232_at	4.96	0.002
PA1233_at	3.71	0.017
PA1235_at	4.59	0.079
PA1237_at	3.46	0.03
PA1241_at	3.32	0.032
PA1242_at	3.61	0.097
PA1246_aprD_at	2.36	0.009
PA1247_aprE_at	2.13	0.02
PA1248_aprF_at	2.11	0.008
PA1251_at	3.51	0.011
PA1253_at	4.00	0.006
PA1254_at	2.45	0.121
PA1266_at	4.00	0.026
PA1281_cobV_at	3.86	0.012
PA1283_at	2.57	0.097
PA1285_at	2.51	0.073
PA1286_at	4.29	0.001
PA1291_at	4.69	0.117
PA1300_at	2.19	0.021
PA1301_at	2.87	0.031
PA1302_at	2.79	0.005
PA1309_at	3.51	0.062

PA1311_phnX_at	2.69	0.007
PA1313_at	7.41	0.043
PA1314_at	3.25	0.001
PA1315_at	2.43	0.083
PA1316_at	3.94	0.135
PA1321_cyoE_at	3.43	0.074
PA1328_at	2.43	0.026
PA1329_at	3.71	0.051
PA1330_at	2.66	0.007
PA1331_at	2.89	0.028
PA1332_at	3.12	0.003
PA1334_at	4.20	0.023
PA1347_at	3.25	0.058
PA1348_at	2.66	0.006
PA1351_at	3.23	0.028
PA1352_at	5.03	0.002
PA1356_at	2.06	0.071
PA1357_at	2.36	0.042
PA1359_at	3.68	0.035
PA1362_i_at	2.38	0.124
PA1363_at	2.20	0.154
PA1364_at	3.78	0.045
PA1365_at	3.63	0.013
PA1367_at	4.56	0.005
PA1368_at	3.73	0.001
PA1374_at	5.13	0.009
PA1378_at	2.07	0.006
PA1381_at	5.54	0.036
PA1382_at	2.73	0.024
PA1383_at	2.64	0.044
PA1384_galE_at	9.51	0.057
PA1386_at	6.96	0.032
PA1387_at	5.28	0.053
PA1388_at	4.17	0.017
PA1391_at	3.84	0.076
PA1392_at	5.54	0.01
PA1393_cysC_at	3.48	0.084
PA1394_at	3.94	0.01
PA1395_at	6.50	0.038
PA1396_at	2.99	0.046
PA1399_at	3.05	0.007
PA1400_at	4.44	0.023
PA1401_at	2.08	0.001
PA1403_at	3.97	0.01
PA1405_at	4.47	0.002
PA1407_at	2.87	0.073
PA1409_aphA_at	2.57	0.004
PA1410_at	3.43	0.046
PA1411_at	3.39	0.001
PA1412_at	4.56	0.003
PA1413_at	2.66	0.023

PA1415_at	3.10	0.014
PA1427_at	3.36	0.008
PA1429_at	2.50	0.122
PA1435_at	3.10	0.052
PA1438_at	3.76	0.064
PA1447_fliQ_at	2.39	0.01
PA1449_flhB_at	3.43	0.004
PA1451_at	2.39	0.055
PA1466_at	3.43	0.008
PA1467_at	4.47	0.032
PA1468_at	3.78	0.011
PA1469_at	2.99	0.019
PA1472_at	3.51	0.079
PA1475_ccmA_at	2.46	0
PA1483_cycH_at	2.06	0.111
PA1484_at	3.12	0.039
PA1486_at	3.94	0.065
PA1491_at	2.07	0.023
PA1497_at	5.35	0.064
PA1498_pykF_at	4.41	0.059
PA1502_gcl_at	2.60	0.014
PA1508_at	4.59	0.05
PA1511_at	2.77	0.019
PA1519_at	3.53	0.075
PA1529_lig_at	2.66	0.103
PA1535_at	4.56	0.017
PA1540_at	6.06	0.043
PA1542_at	2.97	0.06
PA1547_at	3.53	0.091
PA1558_at	2.46	0.005
PA1559_at	3.36	0.214
PA1560_at	3.58	0.005
PA1563_at	3.39	0.006
PA1566_at	3.16	0.1
PA1570_at	3.94	0.048
PA1576_at	2.04	0.1
PA1577_at	3.34	0.061
PA1578_at	4.38	0.023
PA1591_at	3.36	0.065
PA1594_at	2.38	0.065
PA1598_at	3.43	0.003
PA1599_at	3.23	0.003
PA1605_at	2.60	0.056
PA1606_at	3.58	0.012
PA1613_at	2.00	0.052
PA1622_at	6.41	0.032
PA1625_at	3.68	0.002
PA1630_at	2.22	0.031
PA1631_at	4.89	0.149
PA1632_kdpF_at	6.19	0.105
PA1633_kdpA_at	3.32	0.034

PA1634_kdpB_at	2.91	0.003
PA1635_kdpC_at	3.18	0.072
PA1636_kdpD_at	2.41	0.022
PA1645_at	2.10	0.05
PA1649_at	2.73	0.004
PA1650_at	2.17	0.158
PA1652_at	2.75	0.054
PA1653_at	3.41	0.016
PA1655_at	2.16	0.112
PA1656_at	3.73	0.046
PA1660_at	3.58	0.038
PA1661_at	3.66	0.003
PA1662_at	2.19	0.06
PA1663_at	2.81	0.002
PA1664_at	3.53	0.251
PA1667_at	2.00	0.094
PA1668_at	4.41	0.043
PA1669_at	2.89	0.009
PA1670_stp1_at	4.06	0.113
PA1675_at	2.28	0.093
PA1676_at	2.87	0.064
PA1685_masA_at	2.50	0.119
PA1692_at	3.10	0.01
PA1697_at	2.51	0.095
PA1702_i_at	6.54	0.057
PA1703_pcrD_at	3.05	0.066
PA1724_pscK_at	3.01	0.028
PA1725_pscL_at	4.41	0.09
PA1739_at	3.27	0.008
PA1740_at	5.78	0.082
PA1743_at	4.23	0.066
PA1755_at	2.31	0.007
PA1773_at	3.01	0.08
PA1780_nirD_at	6.73	0.061
PA1782_at	3.23	0.005
PA1783_nasA_at	5.21	0.138
PA1786_at	3.18	0.02
PA1788_at	2.66	0.028
PA1797_at	3.97	0.097
PA1798_at	2.00	0.134
PA1809_at	2.14	0.146
PA1819_at	2.30	0.112
PA1825_at	2.16	0.117
PA1827_at	3.14	0.054
PA1834_at	3.36	0.136
PA1844_at	3.27	0.045
PA1848_at	6.45	0.007
PA1851_at	3.27	0.011
PA1854_at	3.66	0.001
PA1856_at	6.28	0.083
PA1860_at	2.31	0.006

PA1864_at	3.18	0
PA1865_at	3.25	0.086
PA1866_at	2.22	0.043
PA1867_at	5.21	0.069
PA1869_at	3.05	0.021
PA1870_at	4.14	0.087
PA1873_at	2.77	0.035
PA1878_at	2.04	0.211
PA1879_at	2.93	0.039
PA1883_at	3.29	0.057
PA1885_at	3.07	0.103
PA1886_polB_at	2.64	0.1
PA1889_at	2.22	0.026
PA1901_s_at	3.68	0.051
PA1903_s_at	3.23	0.015
PA1905_s_at	3.71	0.056
PA1906_at	2.83	0.039
PA1907_at	3.41	0.03
PA1909_at	2.85	0.007
PA1910_at	2.55	0.001
PA1913_at	2.16	0.159
PA1916_at	3.94	0.045
PA1919_at	3.73	0.062
PA1922_at	3.76	0.051
PA1923_at	4.89	0.028
PA1932_at	2.51	0.06
PA1934_at	2.10	0.014
PA1936_at	5.82	0.087
PA1945_at	3.12	0.057
PA1954_at	2.06	0.007
PA1955_at	3.84	0.133
PA1956_at	4.03	0.072
PA1959_bacA_at	2.69	0.002
PA1965_at	3.68	0.054
PA1973_pqqF_at	2.51	0.099
PA1976_at	4.03	0.025
PA1977_at	3.92	0.022
PA1979_at	3.53	0.006
PA1998_at	2.69	0.019
PA2006_at	3.10	0.024
PA2017_at	2.30	0.004
PA2019_at	4.17	0.037
PA2022_at	4.63	0.1
PA2027_at	2.31	0.047
PA2034_at	2.73	0.037
PA2035_at	2.07	0.07
PA2037_at	2.91	0.096
PA2041_at	3.58	0.087
PA2048_at	2.99	0.021
PA2050_at	4.96	0.043
PA2051_at	5.03	0.007

PA2052_cynS_at	2.07	0.01
PA2055_at	3.73	0.016
PA2056_at	2.95	0.026
PA2059_at	2.95	0.027
PA2064_pcoB_at	2.06	0.183
PA2066_at	2.85	0.012
PA2068_at	6.45	0.062
PA2069_at	3.84	0.002
PA2074_at	4.23	0.041
PA2075_at	2.97	0.003
PA2077_at	3.56	0.004
PA2083_at	3.46	0.003
PA2084_at	4.08	0.045
PA2085_at	4.11	0.116
PA2086_at	3.73	0.025
PA2090_at	3.58	0.004
PA2091_at	5.74	0.006
PA2093_at	3.86	0.002
PA2094_at	4.23	0.012
PA2098_at	4.69	0.027
PA2099_at	5.54	0.005
PA2100_at	2.83	0.025
PA2103_at	2.08	0.073
PA2104_at	2.19	0.008
PA2105_at	2.79	0.015
PA2106_at	2.57	0.026
PA2107_at	4.20	0.154
PA2115_at	2.20	0.003
PA2120_at	2.55	0.061
PA2125_at	3.63	0.063
PA2129_at	4.26	0.032
PA2130_at	3.14	0.036
PA2131_at	5.46	0.001
PA2132_at	3.51	0.005
PA2135_at	4.72	0.011
PA2137_at	2.77	0.036
PA2138_at	4.17	0.012
PA2140_at	2.50	0.011
PA2141_at	2.73	0.014
PA2142_at	3.05	0
PA2145_at	2.89	0.032
PA2148_at	2.89	0.048
PA2151_at	3.18	0.034
PA2157_at	2.00	0.02
PA2163_at	2.00	0.033
PA2166_at	2.01	0.122
PA2168_at	2.39	0.002
PA2178_at	4.14	0
PA2180_at	2.00	0.041
PA2181_at	3.94	0.059
PA2184_at	2.33	0.116

PA2186_r_at	2.38	0.074
PA2187_at	3.43	0.035
PA2188_at	3.01	0.057
PA2194_hcnB_at	2.20	0.009
PA2195_hcnC_at	2.71	0.056
PA2199_at	3.12	0.064
PA2200_at	3.14	0.003
PA2201_at	3.39	0.109
PA2206_at	2.01	0.03
PA2207_at	4.03	0.016
PA2208_at	4.14	0.022
PA2210_at	4.23	0.009
PA2211_at	2.06	0.095
PA2216_at	3.46	0.007
PA2218_at	2.75	0.04
PA2224_at	3.32	0.172
PA2225_at	5.66	0.031
PA2226_at	3.07	0.107
PA2230_at	2.04	0.069
PA2241_at	4.44	0.084
PA2243_at	3.63	0.003
PA2244_at	2.95	0.014
PA2250_lpdV_at	2.25	0.079
PA2251_at	4.23	0.143
PA2252_at	2.41	0.016
PA2256_pvcC_at	3.41	0.001
PA2257_pvcD_at	4.59	0.039
PA2260_at	3.46	0.012
PA2263_at	2.20	0.075
PA2266_at	2.87	0.027
PA2267_at	2.60	0.226
PA2269_at	5.31	0.186
PA2271_i_at	2.06	0.126
PA2272_pbpC_at	3.56	0.09
PA2274_at	4.38	0.021
PA2275_at	3.71	0
PA2277_arsR_at	3.81	0.025
PA2278_arsB_at	5.10	0.098
PA2282_at	2.35	0.025
PA2284_at	5.31	0.005
PA2285_at	2.13	0.045
PA2286_at	4.03	0.005
PA2288_r_at	2.45	0.063
PA2289_at	2.81	0.003
PA2292_at	3.66	0.016
PA2295_at	3.97	0.026
PA2296_at	3.48	0.018
PA2297_at	2.10	0.063
PA2298_at	2.93	0.047
PA2299_at	2.04	0.052
PA2300_chiC_at	3.25	0.021

PA2307_at	6.15	0.034
PA2309_at	3.23	0.022
PA2311_r_at	2.19	0.123
PA2312_at	3.25	0.001
PA2314_at	3.66	0.099
PA2315_at	3.73	0.003
PA2322_at	2.99	0.181
PA2324_at	3.46	0.135
PA2325_at	3.16	0.012
PA2326_at	5.28	0.012
PA2327_at	5.39	0.045
PA2328_at	2.50	0.002
PA2329_at	2.62	0.028
PA2330_at	2.06	0.098
PA2332_at	2.81	0.041
PA2333_at	4.47	0.054
PA2334_at	4.89	0.001
PA2336_at	3.20	0.004
PA2339_at	2.04	0.021
PA2340_at	2.46	0.116
PA2342_mtlD_at	3.81	0.012
PA2343_mtlY_at	3.32	0.037
PA2344_mtlZ_at	2.66	0.01
PA2349_at	4.29	0.002
PA2353_at	2.57	0.141
PA2354_at	4.06	0.079
PA2355_at	3.12	0.016
PA2364_at	2.20	0.012
PA2374_at	2.38	0.069
PA2376_at	4.11	0.018
PA2416_treA_at	3.36	0.1
PA2418_at	2.66	0.013
PA2421_at	4.59	0.035
PA2422_at	3.41	0.012
PA2428_at	2.69	0.019
PA2429_at	3.36	0.008
PA2431_at	2.97	0.026
PA2435_at	2.99	0.029
PA2438_at	2.79	0.105
PA2440_at	2.36	0.032
PA2442_gcvT2_at	2.93	0.024
PA2447_at	3.71	0.002
PA2451_at	2.11	0.013
PA2458_at	4.20	0.126
PA2467_at	4.76	0.075
PA2473_at	2.71	0.045
PA2478_at	2.93	0.022
PA2487_i_at	4.03	0.024
PA2488_at	2.27	0.214
PA2496_at	3.14	0.017
PA2498_at	3.66	0.015

PA2502_at	3.61	0.025
PA2503_at	2.11	0.008
PA2505_at	3.51	0.001
PA2506_at	2.23	0.027
PA2507_catA_at	2.39	0.022
PA2510_catR_at	2.53	0.004
PA2513_antB_at	3.51	0.022
PA2514_antC_at	5.17	0.006
PA2517_xylY_at	3.51	0.05
PA2518_xylX_at	3.71	0.001
PA2523_at	3.05	0.004
PA2524_at	3.61	0.016
PA2525_at	2.39	0.054
PA2534_at	5.66	0.028
PA2535_at	2.55	0.13
PA2542_at	3.73	0.078
PA2549_at	2.27	0.03
PA2550_at	2.17	0.06
PA2558_at	2.14	0.11
PA2563_at	4.82	0.041
PA2565_at	2.87	0.025
PA2568_at	2.95	0.125
PA2569_at	4.11	0.044
PA2570_pa1L_at	10.85	0.01
PA2574_at	2.77	0.004
PA2576_at	4.14	0.106
PA2578_at	3.03	0.104
PA2580_at	2.77	0.019
PA2588_at	2.68	0.067
PA2589_at	4.44	0.064
PA2590_at	4.47	0.103
PA2591_at	2.57	0.021
PA2594_at	2.28	0.023
PA2597_at	2.73	0.018
PA2598_at	3.97	0.001
PA2599_at	3.41	0.003
PA2600_at	5.70	0.069
PA2610_at	2.66	0.018
PA2628_at	2.69	0.168
PA2635_at	2.79	0.029
PA2636_at	3.66	0.002
PA2662_at	3.39	0.095
PA2668_at	2.69	0.001
PA2671_at	4.66	0.05
PA2672_at	5.70	0.022
PA2673_at	5.94	0.042
PA2674_at	3.86	0.039
PA2675_at	6.54	0.022
PA2676_at	4.63	0.011
PA2678_at	4.44	0
PA2681_at	4.47	0.081

PA2685_at	3.12	0.011
PA2688_pfeA_at	3.36	0.013
PA2689_at	7.57	0.043
PA2691_at	3.18	0.027
PA2693_at	4.79	0.012
PA2694_at	5.50	0.069
PA2696_at	2.79	0.029
PA2697_at	3.39	0.084
PA2700_at	2.53	0.045
PA2705_at	2.08	0.053
PA2711_at	2.48	0.016
PA2712_at	4.26	0.032
PA2713_at	2.73	0.013
PA2714_at	3.56	0.027
PA2716_at	6.54	0.071
PA2748_at	3.10	0.086
PA2749_endA_at	3.51	0.057
PA2750_at	2.07	0.017
PA2752_at	2.93	0.038
PA2756_at	2.04	0.043
PA2757_at	4.03	0.044
PA2768_at	5.98	0.049
PA2772_at	5.74	0.068
PA2773_at	3.07	0.013
PA2774_at	4.00	0.001
PA2775_at	2.60	0.002
PA2777_at	2.30	0.014
PA2784_at	2.04	0.17
PA2785_at	2.19	0.051
PA2789_at	2.81	0.045
PA2791_at	6.28	0.068
PA2792_at	2.95	0.156
PA2795_at	2.89	0.149
PA2802_at	2.38	0.055
PA2803_at	5.78	0.093
PA2810_at	3.14	0.137
PA2819_at	5.17	0.118
PA2835_at	4.69	0.031
PA2836_at	2.50	0.009
PA2837_at	4.92	0.044
PA2839_at	2.36	0.06
PA2842_at	3.14	0.029
PA2844_at	4.79	0.103
PA2848_at	3.36	0.068
PA2855_at	2.79	0.001
PA2859_greB_at	2.39	0.038
PA2863_lipH_at	2.23	0.058
PA2871_at	2.93	0.039
PA2872_at	2.00	0.029
PA2874_at	2.38	0.07
PA2877_at	2.85	0.076

PA2878_at	3.51	0.04
PA2879_at	3.10	0.008
PA2880_at	3.84	0.079
PA2881_at	4.29	0.064
PA2883_at	2.08	0.05
PA2886_at	2.38	0.065
PA2890_at	2.79	0.067
PA2891_at	3.14	0.106
PA2892_at	2.38	0.062
PA2893_at	2.58	0.085
PA2898_at	3.12	0.003
PA2910_at	3.78	0.012
PA2919_at	3.92	0.012
PA2921_at	5.03	0.015
PA2922_at	4.29	0.002
PA2923_hisJ_at	3.41	0.037
PA2925_hisM_at	5.28	0.095
PA2926_hisP_at	3.01	0.004
PA2928_at	5.39	0.059
PA2929_at	3.41	0.005
PA2931_at	3.03	0.086
PA2932_morB_at	2.71	0.018
PA2933_at	3.18	0.024
PA2934_at	3.48	0.009
PA2936_at	7.41	0.002
PA2938_at	2.03	0.001
PA2940_at	3.84	0.002
PA2941_at	5.21	0.001
PA2942_at	3.18	0.017
PA2956_at	3.94	0.036
PA2958_at	2.22	0.054
PA2961_holB_at	2.53	0.004
PA2962_tmk_at	2.51	0.107
PA2964_pabC_at	2.08	0.144
PA2984_at	4.35	0.029
PA2985_at	2.00	0.024
PA2986_at	2.46	0.128
PA3023_at	2.13	0.019
PA3024_at	3.39	0.008
PA3025_at	2.91	0.002
PA3026_at	3.84	0.148
PA3028_moeA2_at	2.16	0.033
PA3033_at	2.04	0.185
PA3035_at	2.36	0.023
PA3044_at	2.75	0.033
PA3048_at	2.68	0.057
PA3056_at	2.68	0.04
PA3057_at	3.94	0.003
PA3058_at	3.41	0.083
PA3060_at	3.63	0.043
PA3061_at	2.43	0.046

PA3062_at	4.29	0.092
PA3065_at	4.23	0.163
PA3069_at	2.46	0.036
PA3072_at	3.56	0.017
PA3073_at	4.14	0.06
PA3074_at	2.23	0.013
PA3076_at	2.23	0.007
PA3086_at	3.34	0.025
PA3093_at	2.73	0.01
PA3097_xcpX_at	2.35	0.133
PA3099_xcpV_at	2.08	0.064
PA3106_at	2.04	0.103
PA3109_at	2.01	0.003
PA3116_at	2.03	0.001
PA3124_at	2.89	0.111
PA3125_at	4.32	0.054
PA3129_at	4.79	0.081
PA3132_at	4.79	0.011
PA3133_at	4.38	0.011
PA3136_at	2.85	0.04
PA3137_at	5.24	0.003
PA3142_i_at	2.53	0.013
PA3174_at	2.46	0.003
PA3175_at	2.79	0.009
PA3176_gltS_at	4.14	0.149
PA3178_at	3.12	0.063
PA3181_at	2.91	0.001
PA3185_at	2.06	0.002
PA3191_at	3.58	0.132
PA3206_at	2.20	0.051
PA3212_at	2.25	0.06
PA3218_at	3.16	0.007
PA3219_at	3.86	0.008
PA3223_acpD_at	3.48	0.016
PA3230_at	2.00	0.009
PA3231_at	4.08	0.147
PA3232_at	2.57	0.082
PA3237_at	6.68	0.001
PA3240_at	2.31	0.009
PA3246_rluA_at	2.16	0.059
PA3248_at	2.39	0.001
PA3252_at	2.33	0.131
PA3254_at	2.35	0.11
PA3258_at	3.29	0.051
PA3266_capB_at	4.59	0.048
PA3271_at	2.17	0.078
PA3273_at	3.18	0.018
PA3275_at	4.03	0.026
PA3277_at	2.66	0.015
PA3278_at	2.60	0.028
PA3279_oprP_at	4.44	0.003

PA3280_oprO_at	2.71	0.035
PA3281_at	3.89	0.033
PA3283_at	4.96	0.045
PA3284_at	2.89	0.019
PA3290_at	2.30	0.006
PA3291_at	2.00	0.04
PA3292_at	6.92	0.08
PA3293_at	3.18	0.013
PA3294_s_at	2.85	0.001
PA3296_phoA_at	2.60	0.018
PA3303_at	4.11	0.161
PA3305_at	3.03	0.075
PA3312_at	3.41	0.014
PA3315_at	4.76	0.052
PA3316_at	2.23	0.036
PA3317_at	2.60	0.114
PA3319_plcN_at	3.23	0.027
PA3321_at	3.66	0.1
PA3322_at	2.45	0.064
PA3327_at	3.58	0.129
PA3328_at	2.41	0.154
PA3332_at	2.50	0.076
PA3333_fabH2_at	2.33	0.127
PA3334_at	7.06	0.065
PA3335_at	5.17	0.035
PA3342_at	2.79	0.021
PA3345_at	2.19	0.008
PA3346_at	2.06	0.111
PA3354_at	2.13	0.037
PA3355_at	2.77	0.008
PA3361_at	12.91	0.033
PA3363_amiR_at	2.73	0.027
PA3366_amiE_at	3.56	0.022
PA3375_at	2.93	0.014
PA3377_at	4.03	0.001
PA3378_at	4.23	0.025
PA3381_at	3.41	0.005
PA3384_phnC_at	3.71	0.007
PA3386_at	2.89	0.016
PA3389_at	2.89	0.065
PA3398_at	2.53	0.007
PA3400_at	3.36	0.172
PA3401_at	3.36	0.017
PA3403_at	2.85	0.014
PA3405_hasE_at	4.23	0.043
PA3409_at	2.85	0.036
PA3412_at	8.63	0.083
PA3421_at	2.87	0.037
PA3422_at	4.08	0.047
PA3425_at	3.25	0.001
PA3429_at	3.56	0.091

PA3431_at	3.05	0.055
PA3432_i_at	6.36	0.009
PA3433_at	3.01	0.029
PA3436_at	3.89	0.015
PA3441_at	3.58	0.098
PA3442_at	3.05	0.01
PA3443_at	4.47	0.06
PA3445_at	2.48	0.087
PA3449_at	3.81	0.001
PA3470_i_at	2.13	0.205
PA3473_at	4.20	0.011
PA3474_at	3.73	0.122
PA3475_pheC_at	2.10	0
PA3478_rhlB_at	7.84	0.011
PA3479_rhlA_at	13.64	0.044
PA3485_r_at	2.45	0.022
PA3486_at	3.73	0.009
PA3492_at	3.76	0.045
PA3493_at	3.46	0.044
PA3497_at	4.00	0.029
PA3499_at	3.03	0.01
PA3505_at	2.77	0.011
PA3509_at	2.39	0.01
PA3511_at	2.10	0.078
PA3514_at	2.73	0.075
PA3530_at	2.99	0.047
PA3532_at	3.92	0.032
PA3534_at	2.39	0.18
PA3536_at	2.45	0.037
PA3540_algD_at	2.99	0.007
PA3542_at	2.17	0.032
PA3544_algE_at	3.89	0.091
PA3545_algG_at	3.20	0.009
PA3546_algX_at	2.20	0.131
PA3547_algL_at	3.43	0.011
PA3554_at	2.41	0.013
PA3555_at	5.43	0.01
PA3556_at	3.01	0.007
PA3557_at	5.58	0.033
PA3558_at	5.70	0.024
PA3560_fruA_at	3.89	0.009
PA3561_fruK_at	3.07	0.012
PA3562_at	2.77	0.057
PA3564_at	4.17	0.124
PA3565_at	4.00	0.046
PA3573_at	3.53	0.011
PA3578_at	2.16	0.166
PA3591_at	4.08	0.01
PA3592_at	5.58	0.006
PA3594_at	3.92	0.09
PA3595_at	4.14	0.002

PA3596_at	3.18	0.043
PA3601_at	2.75	0.03
PA3605_at	2.97	0.098
PA3616_at	2.50	0.143
PA3641_at	2.35	0.024
PA3642_rnhB_at	2.97	0.031
PA3643_lpxB_at	2.16	0.192
PA3660_at	2.79	0.127
PA3661_at	3.10	0.008
PA3663_at	2.89	0.076
PA3668_at	2.23	0.124
PA3670_at	2.95	0.055
PA3676_at	4.03	0.008
PA3679_at	3.53	0.043
PA3680_at	2.77	0.163
PA3682_at	2.41	0
PA3683_at	2.43	0.183
PA3689_at	3.10	0.006
PA3704_at	2.51	0.099
PA3711_at	3.41	0.006
PA3714_at	2.87	0.006
PA3715_at	2.51	0.014
PA3718_at	2.89	0.013
PA3724_lasB_at	2.16	0
PA3726_at	2.36	0.014
PA3741_at	2.51	0.144
PA3750_at	3.53	0.048
PA3751_purT_at	2.46	0.095
PA3765_at	2.75	0.014
PA3772_at	3.63	0.021
PA3783_at	2.93	0.01
PA3785_at	2.33	0.01
PA3791_at	2.11	0.01
PA3793_at	2.51	0.084
PA3794_at	2.91	0.081
PA3810_hscA_at	2.91	0.123
PA3817_at	2.73	0.176
PA3826_at	3.94	0.025
PA3827_at	2.41	0.014
PA3829_at	3.10	0.128
PA3830_at	3.36	0.196
PA3835_at	3.61	0.001
PA3845_at	4.63	0.059
PA3860_at	2.43	0.037
PA3862_at	2.85	0.054
PA3863_at	3.10	0.044
PA3867_at	3.66	0.139
PA3868_at	3.56	0.015
PA3872_narI_at	3.05	0.035
PA3873_narJ_at	2.75	0.016
PA3874_narH_at	2.75	0.028

PA3876_narK2_at	5.21	0.108
PA3877_narK1_at	2.11	0.006
PA3886_at	2.62	0.084
PA3887_nhaP_at	2.62	0.043
PA3894_at	3.53	0.112
PA3899_at	2.17	0.086
PA3902_at	2.39	0.101
PA3909_at	4.06	0.003
PA3910_at	3.63	0.014
PA3915_moaB1_at	2.66	0.155
PA3929_cioB_at	2.01	0.103
PA3932_at	2.66	0.044
PA3934_at	2.11	0.03
PA3935_tauD_at	2.85	0.005
PA3937_at	2.38	0.022
PA3938_at	2.93	0.007
PA3946_at	3.61	0.04
PA3947_at	3.66	0.009
PA3949_at	2.00	0.235
PA3953_at	2.51	0.111
PA3954_at	3.36	0.025
PA3961_at	2.60	0.013
PA3966_at	2.28	0.023
PA3968_at	3.05	0.081
PA3971_at	2.39	0.018
PA3985_at	2.73	0.014
PA3991_at	4.38	0.079
PA3994_at	4.92	0.002
PA4016_at	2.51	0.046
PA4018_r_at	3.97	0.114
PA4028_i_at	2.48	0.135
PA4034_aqpZ_at	3.92	0.076
PA4037_at	3.68	0.001
PA4038_at	6.28	0.038
PA4039_at	4.82	0.061
PA4041_at	2.77	0.091
PA4046_at	2.30	0.04
PA4048_at	2.46	0.016
PA4050_pgpA_at	3.12	0.03
PA4062_at	2.36	0.001
PA4064_at	2.28	0.051
PA4073_at	3.78	0.006
PA4075_at	2.13	0.105
PA4076_at	2.79	0.015
PA4077_at	3.25	0.099
PA4078_at	2.57	0.004
PA4080_at	3.71	0.04
PA4081_at	4.38	0.047
PA4082_at	3.12	0.098
PA4083_at	3.41	0.01
PA4087_at	5.35	0.035

PA4089_at	3.86	0.007
PA4095_at	3.05	0.078
PA4096_at	7.31	0.014
PA4097_at	2.77	0.015
PA4098_at	3.73	0.052
PA4099_at	3.48	0.028
PA4102_at	2.33	0.046
PA4103_at	4.76	0.002
PA4104_at	2.79	0.006
PA4106_at	4.08	0.006
PA4109_ampR_at	2.71	0.006
PA4113_at	4.56	0.009
PA4120_at	2.87	0.044
PA4121_at	2.58	0.053
PA4125_hpcD_at	2.50	0.06
PA4126_at	4.23	0.045
PA4134_i_at	2.39	0.121
PA4135_at	2.89	0.069
PA4136_at	4.96	0.001
PA4137_at	4.00	0.003
PA4138_tyrS_at	2.43	0.032
PA4141_at	5.66	0.129
PA4142_at	2.43	0.029
PA4146_at	2.89	0.068
PA4149_at	2.75	0.008
PA4152_at	3.84	0.042
PA4153_at	3.25	0.048
PA4154_at	2.79	0.001
PA4160_fepD_at	3.41	0.014
PA4161_fepG_at	3.51	0.006
PA4165_at	3.51	0.088
PA4172_at	2.35	0.081
PA4173_at	4.23	0.001
PA4174_at	2.79	0.008
PA4177_at	2.99	0.001
PA4178_at	2.87	0.002
PA4181_at	2.39	0.035
PA4182_at	2.04	0.022
PA4184_at	2.06	0.002
PA4186_at	3.14	0.029
PA4187_at	3.51	0.011
PA4188_at	4.20	0.002
PA4191_at	4.50	0.019
PA4192_at	2.58	0.02
PA4193_at	3.23	0.065
PA4196_at	2.77	0.151
PA4203_at	2.64	0.023
PA4205_at	3.23	0.027
PA4206_at	3.46	0.037
PA4207_at	4.29	0.061
PA4208_at	2.91	0.007

PA4210_s_at	6.32	0.095
PA4211_g_at	4.20	0.072
PA4217_at	2.57	0.015
PA4220_i_at	6.50	0.234
PA4222_at	4.32	0.024
PA4223_at	5.24	0.013
PA4224_at	3.16	0.001
PA4226_pchE_at	2.55	0.007
PA4231_pchA_at	2.83	0.079
PA4282_at	2.08	0.001
PA4283_recD_at	2.53	0.02
PA4284_recB_at	2.14	0.03
PA4289_at	4.03	0.102
PA4291_at	2.07	0.107
PA4293_at	2.07	0.133
PA4301_at	2.77	0.008
PA4308_at	3.34	0.086
PA4318_at	2.04	0.057
PA4319_at	2.30	0.02
PA4322_at	2.01	0.035
PA4323_at	3.01	0.007
PA4331_at	2.62	0.056
PA4334_at	3.29	0.139
PA4338_at	2.45	0.003
PA4341_at	3.34	0.018
PA4342_at	2.75	0.031
PA4344_at	2.23	0.16
PA4346_at	3.68	0.07
PA4349_at	4.06	0.01
PA4350_at	4.14	0.035
PA4351_at	6.96	0.046
PA4355_at	2.13	0.015
PA4357_r_at	2.83	0.043
PA4358_at	2.36	0.028
PA4364_at	3.81	0.035
PA4368_at	3.01	0.083
PA4371_at	2.03	0.043
PA4377_at	2.75	0.05
PA4382_at	6.02	0.143
PA4384_at	2.71	0.01
PA4388_at	2.23	0.173
PA4390_at	2.91	0.116
PA4391_at	3.58	0.003
PA4392_at	2.99	0.054
PA4394_at	2.33	0.064
PA4404_at	2.31	0.092
PA4419_ftsL_at	3.23	0.049
PA4422_at	2.48	0.006
PA4437_at	3.07	0.087
PA4438_at	2.07	0.128
PA4445_at	2.33	0

PA4452_at	2.77	0.15
PA4479_mreD_at	2.38	0.137
PA4485_at	4.08	0.073
PA4487_at	2.66	0.104
PA4507_at	6.06	0.062
PA4508_at	3.92	0.039
PA4510_at	3.16	0.03
PA4511_at	2.22	0.045
PA4513_at	2.89	0.005
PA4514_at	2.10	0.032
PA4516_at	2.27	0.033
PA4517_at	2.20	0.008
PA4518_at	3.68	0.057
PA4531_at	3.25	0.008
PA4532_at	3.36	0.001
PA4533_at	3.01	0.037
PA4539_at	3.53	0.009
PA4540_at	3.92	0.046
PA4541_at	2.51	0.001
PA4548_at	3.48	0.001
PA4562_at	3.36	0.004
PA4570_at	3.92	0.044
PA4580_at	3.66	0.039
PA4581_rtcR_at	2.73	0.208
PA4582_at	2.33	0.014
PA4584_at	6.54	0.017
PA4585_rtcA_at	3.61	0.003
PA4588_gdhA_at	2.20	0.095
PA4589_at	3.76	0.112
PA4591_at	2.20	0.007
PA4592_at	2.10	0.063
PA4598_mexD_at	4.35	0.001
PA4599_mexC_at	2.99	0.021
PA4601_at	2.85	0.043
PA4609_radA_at	3.01	0.086
PA4613_katB_at	3.29	0.004
PA4628_lysP_at	2.39	0.004
PA4631_at	2.06	0.107
PA4634_at	2.46	0.01
PA4635_at	5.13	0.04
PA4637_i_at	2.81	0.036
PA4638_at	4.59	0.057
PA4641_at	3.27	0.003
PA4650_at	2.23	0.177
PA4666_hemA_at	2.17	0.112
PA4669_ipk_at	2.04	0.136
PA4678_rimI_at	2.97	0.047
PA4680_at	2.48	0.101
PA4691_at	4.41	0.053
PA4692_at	2.77	0.03
PA4705_at	2.19	0.004

PA4706_at	2.95	0.051
PA4707_at	3.71	0.099
PA4709_at	2.06	0.127
PA4713_at	3.78	0.01
PA4714_at	2.81	0.05
PA4718_at	3.56	0.002
PA4721_at	3.01	0.095
PA4764_fur_at	2.06	0.15
PA4766_at	4.08	0.006
PA4767_at	2.00	0.045
PA4774_at	2.50	0.03
PA4775_at	2.57	0.064
PA4777_at	2.73	0.104
PA4783_at	3.46	0.001
PA4795_at	2.31	0.015
PA4796_at	2.45	0.003
PA4805_at	3.66	0.081
PA4810_fdnI_at	2.60	0.01
PA4814_fadH2_at	3.53	0.038
PA4815_at	3.05	0.066
PA4818_at	3.34	0.027
PA4819_at	4.35	0.018
PA4820_at	5.39	0.027
PA4821_at	3.12	0.003
PA4822_at	4.00	0.005
PA4823_at	4.47	0.007
PA4824_at	3.36	0.015
PA4825_mgtA_at	3.73	0.07
PA4826_at	2.60	0.232
PA4830_at	6.11	0.071
PA4832_at	3.73	0.002
PA4834_at	4.56	0.03
PA4835_at	5.54	0.029
PA4836_at	3.34	0.021
PA4838_at	4.47	0.001
PA4845_dipZ_at	3.03	0.02
PA4849_at	2.71	0.082
PA4859_at	3.18	0.015
PA4860_at	5.17	0.001
PA4861_at	3.89	0.121
PA4862_at	4.03	0.004
PA4879_at	2.16	0.026
PA4884_at	3.92	0.135
PA4885_irlR_at	2.64	0.106
PA4886_at	7.46	0.12
PA4887_at	4.50	0.093
PA4891_ureE_at	2.43	0.087
PA4892_ureF_at	2.69	0.043
PA4895_at	6.32	0.018
PA4896_at	3.34	0.006
PA4897_at	2.43	0.01

PA4898_at	3.03	0.036
PA4900_at	3.92	0.001
PA4904_vanA_at	3.73	0.081
PA4908_at	2.71	0.138
PA4917_at	3.71	0.08
PA4921_at	2.07	0.053
PA4926_at	2.46	0.084
PA4930_alr_at	3.20	0.022
PA4948_at	2.75	0.054
PA4950_at	3.10	0.015
PA4960_at	2.19	0.004
PA4962_at	5.70	0.074
PA4963_at	2.00	0.029
PA4965_at	2.51	0.076
PA4975_at	2.68	0.12
PA4977_at	2.45	0.13
PA4978_at	3.48	0.003
PA4980_at	4.72	0.003
PA4981_at	3.51	0.004
PA4982_at	4.59	0.045
PA4983_at	4.66	0
PA4986_at	3.81	0.002
PA4989_at	2.77	0.029
PA4990_at	2.64	0.006
PA4994_at	3.68	0.008
PA4999_at	3.05	0.125
PA5010_waaG_at	2.43	0.198
PA5020_at	4.14	0.029
PA5021_at	3.63	0.038
PA5030_at	3.58	0.021
PA5031_at	4.03	0.011
PA5032_at	3.78	0.06
PA5034_hemE_at	2.53	0.061
PA5062_at	2.10	0.069
PA5071_at	3.12	0.006
PA5081_at	2.99	0.02
PA5086_at	5.94	0.123
PA5088_at	3.07	0.006
PA5089_at	2.95	0.015
PA5090_at	2.46	0.022
PA5095_at	2.58	0.042
PA5097_at	3.07	0.02
PA5098_hutH_at	2.36	0.012
PA5104_at	3.16	0
PA5116_at	3.94	0.108
PA5121_at	3.12	0.156
PA5127_at	2.71	0.049
PA5132_at	2.19	0.059
PA5150_at	2.57	0.001
PA5151_at	3.73	0.151
PA5160_at	2.50	0.046

PA5175_cysQ_at	2.38	0.068
PA5183_at	2.68	0.101
PA5185_at	3.61	0.044
PA5186_at	2.33	0.111
PA5188_at	3.92	0.068
PA5189_at	2.87	0.055
PA5190_at	2.00	0.022
PA5195_at	2.07	0.002
PA5199_envZ_at	2.48	0.071
PA5207_at	3.46	0.097
PA5211_at	3.39	0.007
PA5216_at	3.84	0.061
PA5217_at	2.25	0.007
PA5219_at	3.12	0.021
PA5220_at	2.51	0.008
PA5228_at	2.81	0.038
PA5234_at	2.39	0.007
PA5235_glpT_at	2.50	0.012
PA5236_at	2.81	0.064
PA5248_at	2.20	0.088
PA5249_at	2.31	0.022
PA5252_at	2.60	0.075
PA5254_at	2.06	0.084
PA5258_at	2.06	0.054
PA5259_hemD_at	2.08	0.006
PA5262_algZ_at	2.73	0.052
PA5264_at	2.22	0.059
PA5266_at	3.43	0.007
PA5275_at	3.58	0.002
PA5280_sss_at	2.31	0.132
PA5282_at	3.71	0.006
PA5287_amtB_at	2.38	0.037
PA5302_dadX_at	2.95	0.032
PA5307_at	3.46	0.04
PA5310_at	4.99	0.068
PA5318_at	2.19	0.001
PA5326_at	4.11	0.082
PA5327_at	2.68	0.003
PA5341_at	5.28	0.001
PA5342_at	3.18	0
PA5343_at	2.03	0.009
PA5351_at	2.51	0.04
PA5352_at	2.20	0.016
PA5354_glcE_at	2.27	0.005
PA5367_pstA_at	3.12	0.035
PA5368_pstC_at	2.66	0.233
PA5370_at	2.50	0.106
PA5372_betA_at	4.72	0.15
PA5375_betT1_at	3.20	0.014
PA5379_sdaB_at	3.97	0.033
PA5382_at	3.23	0.073

PA5383_at	3.23	0.153
PA5384_at	6.59	0.078
PA5387_at	3.71	0.001
PA5389_at	2.33	0.023
PA5390_at	3.76	0.01
PA5391_at	3.46	0.008
PA5392_at	3.41	0.131
PA5393_at	4.06	0.005
PA5395_at	2.64	0.093
PA5396_at	2.11	0.111
PA5397_at	3.05	0.068
PA5399_at	4.26	0.05
PA5401_at	7.52	0.011
PA5403_at	4.11	0.066
PA5404_at	4.41	0.031
PA5406_at	2.45	0.047
PA5407_at	3.20	0.032
PA5408_at	2.27	0.022
PA5409_at	2.71	0.022
PA5411_at	2.57	0.007
PA5412_at	7.67	0.07
PA5418_soxA_at	2.46	0.066
PA5423_at	2.08	0.012
PA5428_at	2.97	0.082
PA5431_at	3.16	0.028
PA5433_at	2.55	0.01
PA5443_uvrD_at	2.10	0.118
PA5447_wbpZ_at	2.08	0.093
PA5448_wbpY_at	2.58	0.007
PA5449_wbpX_at	2.30	0.045
PA5457_at	2.81	0.013
PA5464_at	2.99	0.001
PA5465_at	2.87	0.064
PA5466_at	2.64	0
PA5467_at	2.55	0.022
PA5468_at	3.16	0.025
PA5471_at	3.84	0.002
PA5476_citA_at	2.89	0.045
PA5477_at	2.33	0.077
PA5478_at	3.36	0.001
PA5480_at	5.10	0.018
PA5482_at	2.64	0.002
PA5501_znuB_at	2.64	0.001
PA5512_at	2.81	0.192
PA5514_at	6.68	0.045
PA5517_at	3.84	0.001
PA5518_at	4.00	0.003
PA5520_at	3.10	0.042
PA5522_at	2.66	0.148
PA5525_at	3.12	0.042
PA5529_at	4.08	0.004

PA5535_at	5.43	0.091
PA5536_at	3.94	0.038
PA5537_at	3.12	0
PA5538_amiA_at	2.89	0.057
PA5539_at	7.78	0.074
PA5540_at	4.06	0.053
PA5541_at	3.46	0.006
PA5548_at	4.59	0.001
PA5551_at	2.11	0.028
PA5566_at	5.98	0.012
PA5567_at	2.75	0.02
Pae_M14850cds_at	3.36	0.338
Pae_tRNA_Cys_i_at	5.46	0.206
Pae_tRNA_Met_s_at	5.82	0.127
Pae_tRNA_Ser_f_at	3.66	0.116
Pae_tRNA_Thr_s_at	4.06	0.058

Table S2. Genes that are significantly downregulated in *ΔbfmR* biofilms compared to *P. aeruginosa* PAO1 biofilms.

Significantly Down-regulated Genes	Fold Change	*T*-test *P*value
ig_5207621_5208463_at	-3.92	0.001
ig_5563286_5563964_at	-2.43	0.007
PA0002_dnaN_at	-3.56	0.047
PA0019_def_at	-2.08	0.009
PA0020_at	-3.05	0.007
PA0036_trpB_at	-2.48	0.001
PA0049_at	-2.57	0.006
PA0055_at	-2.79	0.015
PA0083_at	-2.27	0.001
PA0105_coxB_at	-3.07	0.005
PA0106_coxA_at	-4.56	0
PA0107_at	-3.43	0.001
PA0108_coIII_at	-3.29	0.017
PA0113_at	-2.43	0.011
PA0114_at	-3.78	0.016
PA0139_ahpC_at	-2.45	0.024
PA0141_at	-2.45	0.019
PA0176_at	-3.16	0.07
PA0179_at	-3.12	0.011
PA0265_gabD_at	-2.85	0.007
PA0284_at	-2.87	0.038
PA0291_oprE_at	-3.68	0.02
PA0300_potF2_at	-5.54	0.007
PA0301_potF3_at	-2.33	0.015
PA0302_potG_at	-2.38	0.074
PA0303_potH_at	-2.17	0.099
PA0316_serA_at	-3.76	0.002
PA0353_ilvD_at	-2.62	0.035
PA0359_at	-2.79	0.039
PA0388_at	-2.08	0.001
PA0395_pilT_at	-3.32	0.006
PA0399_at	-3.61	0.045
PA0401_at	-2.01	0.018
PA0407_gshB_at	-2.48	0.016
PA0408_pilG_at	-3.05	0.001
PA0409_pilH_at	-3.61	0.003
PA0411_pilJ_at	-2.51	0.003
PA0414_at	-2.85	0.094
PA0430_metF_at	-2.03	0.02
PA0431_at	-3.12	0
PA0432_sahH_at	-4.50	0.001
PA0482_glcB_at	-2.41	0.011
PA0505_at	-3.61	0.014
PA0516_nirF_at	-5.62	0.061
PA0517_nirC_at	-3.46	0.05

PA0518_nirM_at	-4.44	0.001
PA0519_nirS_at	-8.11	0.001
PA0523_norC_at	-2.79	0.047
PA0532_at	-6.11	0.079
PA0537_at	-2.51	0.005
PA0546_metK_at	-2.68	0.017
PA0555_fda_at	-2.73	0.008
PA0572_at	-2.20	0.001
PA0576_rpoD_at	-2.16	0.027
PA0579_rpsU_at	-3.23	0.004
PA0586_at	-3.89	0.004
PA0587_at	-3.43	0
PA0588_at	-3.16	0.001
PA0594_surA_at	-2.31	0.001
PA0595_ostA_at	-2.73	0.001
PA0652_vfr_at	-2.01	0.047
PA0667_at	-2.06	0.006
PA0691_at	-2.14	0.005
PA0730_at	-4.47	0.026
PA0731_at	-2.10	0.004
PA0745_at	-2.30	0.003
PA0758_at	-2.58	0.041
PA0795_prpC_at	-4.41	0.005
PA0796_prpB_at	-2.75	0.025
PA0826_at	-2.43	0.032
PA0833_at	-2.10	0.015
PA0836_at	-2.55	0.001
PA0852_cpbD_at	-3.41	0.103
PA0854_fumC2_at	-2.08	0.006
PA0856_at	-4.32	0
PA0857_bolA_at	-2.03	0.064
PA0862_at	-2.58	0.008
PA0865_hpd_at	-3.61	0.011
PA0887_acsA_at	-2.91	0.001
PA0888_aotJ_at	-2.89	0.001
PA0900_at	-3.05	0.002
PA0904_lysC_at	-2.03	0.027
PA0943_at	-3.48	0.002
PA0958_oprD_at	-4.69	0.004
PA0960_at	-3.07	0.012
PA0962_at	-2.95	0.011
PA0969_tolQ_at	-2.62	0
PA0972_tolB_at	-2.73	0.035
PA1008_bcp_at	-3.36	0.001
PA1009_at	-3.97	0.011
PA1010_dapA_at	-2.66	0.004
PA1013_purC_at	-2.51	0.058
PA1048_at	-3.56	0.002
PA1049_pdxH_at	-2.00	0.043
PA1053_at	-4.29	0.091
PA1074_braC_at	-5.13	0.001

PA1077_flgB_at	-3.32	0.025
PA1078_flgC_at	-2.27	0.003
PA1079_flgD_at	-2.28	0.107
PA1080_flgE_at	-3.46	0.018
PA1082_flgG_at	-3.76	0
PA1087_flgL_at	-2.04	0.117
PA1092_fliC_at	-3.20	0.015
PA1093_at	-4.66	0.004
PA1094_fliD_at	-3.89	0.001
PA1096_at	-2.48	0.027
PA1155_nrdB_at	-2.22	0.051
PA1156_nrdA_at	-5.82	0.018
PA1173_napB_at	-3.58	0.014
PA1174_napA_at	-2.41	0.001
PA1176_napF_at	-2.45	0.03
PA1178_oprH_at	-23.43	0.019
PA1179_phoP_at	-6.15	0.002
PA1244_at	-3.32	0.012
PA1288_at	-3.68	0
PA1289_at	-2.58	0
PA1292_at	-2.50	0.007
PA1293_at	-2.57	0.031
PA1333_r_at	-2.79	0.002
PA1337_ansB_at	-3.71	0.001
PA1338_ggt_at	-9.45	0
PA1339_at	-4.26	0.01
PA1340_at	-5.31	0
PA1341_at	-5.46	0.026
PA1342_at	-5.66	0.005
PA1343_at	-3.25	0.052
PA1354_at	-3.53	0
PA1376_aceK_at	-2.28	0.039
PA1431_rsaL_at	-2.13	0.046
PA1440_at	-2.95	0.011
PA1445_fliO_at	-4.14	0.06
PA1456_cheY_at	-2.22	0.018
PA1462_at	-2.35	0.01
PA1493_cysP_at	-5.35	0.017
PA1505_moaA2_at	-2.20	0.005
PA1528_zipA_at	-2.33	0.002
PA1544_anr_at	-2.93	0.035
PA1546_hemN_at	-6.32	0.001
PA1551_at	-2.36	0.023
PA1552_at	-4.17	0
PA1553_at	-4.63	0.005
PA1554_at	-4.79	0.002
PA1555_at	-5.43	0.025
PA1556_at	-6.96	0.002
PA1557_at	-6.41	0.001
PA1561_aer_at	-2.16	0.01
PA1562_acnA_at	-5.39	0

PA1580_gltA_at	-9.13	0.002
PA1581_sdhC_at	-3.76	0.033
PA1582_sdhD_at	-5.35	0.01
PA1583_sdhA_at	-5.13	0.002
PA1584_sdhB_at	-3.84	0
PA1585_sucA_at	-5.13	0
PA1586_sucB_at	-4.26	0.001
PA1587_lpdG_at	-3.07	0.001
PA1588_sucC_at	-5.35	0
PA1589_sucD_at	-3.14	0
PA1609_fabB_at	-4.03	0.007
PA1610_fabA_at	-8.22	0.004
PA1677_at	-2.77	0.003
PA1708_popB_at	-2.81	0.005
PA1750_at	-2.35	0.004
PA1754_cysB_at	-5.46	0
PA1757_thrH_at	-2.11	0.006
PA1770_ppsA_at	-2.01	0.08
PA1777_oprF_at	-2.10	0.125
PA1787_acnB_at	-3.14	0.003
PA1789_at	-4.72	0.003
PA1793_ppiB_at	-2.89	0.011
PA1800_tig_at	-3.36	0.034
PA1802_clpX_at	-2.01	0.178
PA1837_at	-2.53	0.011
PA1838_cysI_at	-2.99	0.004
PA1847_at	-3.32	0.005
PA1852_at	-2.58	0.022
PA1874_at	-2.58	0.002
PA1881_at	-2.11	0.001
PA1888_at	-2.33	0.017
PA1894_at	-4.59	0.007
PA1895_at	-10.85	0.021
PA1896_at	-5.13	0.024
PA1897_at	-12.21	0.004
PA1927_metE_at	-3.20	0.066
PA1930_at	-4.26	0.001
PA1941_at	-2.11	0.066
PA1970_at	-2.51	0.012
PA1984_s_at	-3.36	0.023
PA1985_pqqA_at	-2.45	0.01
PA2081_at	-3.81	0.007
PA2119_at	-3.10	0
PA2174_at	-4.47	0.032
PA2233_at	-2.60	0.001
PA2234_at	-2.39	0.013
PA2247_bkdA1_at	-2.06	0.001
PA2290_gcd_at	-3.05	0.014
PA2303_at	-2.08	0.03
PA2304_at	-3.05	0.022
PA2306_at	-2.58	0.052

PA2365_at	-8.69	0.016
PA2366_at	-6.73	0.017
PA2367_at	-3.29	0.067
PA2368_i_at	-2.55	0.013
PA2372_at	-3.43	0.009
PA2393_at	-3.16	0.016
PA2394_at	-2.48	0.019
PA2397_pvdE_at	-3.56	0
PA2398_fpvA_at	-4.47	0
PA2445_gcvP2_at	-2.36	0.006
PA2446_gcvH2_at	-5.39	0.092
PA2485_at	-2.71	0.017
PA2486_at	-8.28	0.001
PA2491_at	-6.15	0
PA2493_mexE_at	-25.46	0.001
PA2494_mexF_at	-15.89	0.001
PA2495_oprN_at	-10.78	0.014
PA2501_at	-3.34	0.014
PA2604_at	-2.60	0.026
PA2606_at	-2.11	0.101
PA2612_serS_at	-2.64	0.001
PA2616_trxB1_at	-2.30	0.003
PA2618_at	-5.74	0.007
PA2619_infA_at	-2.22	0.008
PA2620_clpA_at	-3.12	0.003
PA2621_at	-2.30	0.008
PA2623_icd_at	-2.51	0.038
PA2624_idh_at	-2.20	0.009
PA2629_purB_at	-3.10	0.002
PA2634_at	-6.19	0.001
PA2638_nuoB_at	-3.07	0
PA2639_nuoD_at	-3.14	0
PA2640_nuoE_at	-2.31	0.005
PA2642_nuoG_at	-2.39	0.014
PA2644_nuoI_at	-2.23	0.003
PA2648_nuoM_at	-2.97	0.003
PA2649_nuoN_at	-2.89	0.05
PA2659_at	-2.22	0.163
PA2707_at	-2.28	0.037
PA2709_cysK_at	-2.43	0.004
PA2740_pheS_at	-2.06	0.038
PA2753_at	-3.05	0.047
PA2759_at	-2.83	0.047
PA2760_at	-4.76	0
PA2779_at	-2.62	0.011
PA2782_at	-5.70	0.003
PA2783_at	-2.85	0.001
PA2796_tal_at	-2.00	0.064
PA2800_at	-3.07	0.003
PA2812_at	-2.97	0.012
PA2813_at	-2.53	0.002

PA2816_i_at	-3.10	0.002
PA2828_at	-2.03	0.014
PA2850_ohr_at	-6.77	0
PA2862_lipA_at	-6.96	0
PA2939_at	-4.76	0.009
PA2945_at	-2.30	0.038
PA2946_at	-4.99	0.022
PA2951_etfA_at	-3.20	0.004
PA2952_etfB_at	-3.97	0.001
PA2953_at	-3.27	0
PA2967_fabG_at	-2.31	0.042
PA2968_fabD_at	-2.55	0.011
PA2976_rne_at	-4.72	0.024
PA2980_at	-2.79	0.099
PA3001_at	-4.44	0
PA3014_faoA_at	-3.51	0.002
PA3021_at	-2.25	0.006
PA3038_at	-9.71	0
PA3083_pepN_at	-2.41	0.002
PA3104_xcpP_at	-4.06	0.003
PA3108_purF_at	-2.06	0.011
PA3139_at	-3.48	0.044
PA3150_wbpG_at	-4.47	0.103
PA3156_wbpD_at	-2.01	0.104
PA3159_wbpA_at	-2.53	0.011
PA3162_rpsA_at	-3.05	0
PA3170_at	-2.79	0.05
PA3171_ubiG_at	-2.01	0.041
PA3172_at	-2.64	0.059
PA3227_ppiA_at	-3.01	0
PA3229_at	-11.55	0.026
PA3234_at	-3.71	0.004
PA3235_at	-5.74	0.004
PA3250_at	-2.73	0.001
PA3257_prc_at	-2.38	0.017
PA3262_at	-3.76	0.045
PA3286_at	-2.10	0.047
PA3299_fadD1_at	-2.03	0.012
PA3313_at	-3.46	0.001
PA3337_rfaD_at	-2.22	0.011
PA3347_at	-2.77	0.031
PA3351_at	-4.86	0.001
PA3352_at	-3.16	0.007
PA3385_at	-3.81	0.001
PA3392_nosZ_at	-2.81	0.036
PA3439_folX_at	-2.14	0.025
PA3440_at	-5.90	0.044
PA3496_at	-5.06	0.117
PA3515_at	-2.75	0.005
PA3516_at	-9.00	0.022
PA3517_at	-4.47	0.06

PA3518_at	-8.22	0.055
PA3519_at	-16.56	0.013
PA3523_at	-2.68	0.074
PA3525_argG_at	-2.73	0.001
PA3527_pyrC_at	-2.35	0.015
PA3531_bfrB_at	-4.14	0.005
PA3535_at	-2.77	0.036
PA3552_at	-3.14	0.019
PA3584_glpD_at	-2.48	0.002
PA3614_at	-2.20	0
PA3622_rpoS_at	-3.34	0.004
PA3637_pyrG_at	-2.53	0
PA3645_fabZ_at	-2.64	0.011
PA3646_lpxD_at	-2.35	0.008
PA3655_tsf_at	-2.81	0.121
PA3656_rpsB_at	-5.03	0.001
PA3691_at	-2.10	0.007
PA3700_lysS_at	-3.56	0.001
PA3701_prfB_at	-2.71	0.008
PA3723_at	-2.03	0
PA3745_rpsP_at	-2.50	0.037
PA3769_guaA_at	-2.46	0.053
PA3770_guaB_at	-2.91	0
PA3792_leuA_at	-3.20	0.013
PA3806_at	-2.68	0.054
PA3807_ndk_at	-2.83	0.007
PA3814_iscS_at	-2.97	0.001
PA3815_at	-2.20	0.084
PA3833_at	-3.32	0.002
PA3834_valS_at	-2.01	0.015
PA3836_at	-3.53	0.01
PA3842_at	-2.25	0.004
PA3857_at	-3.25	0.013
PA3858_at	-2.91	0.004
PA3919_at	-6.54	0
PA3920_at	-4.17	0.004
PA3922_at	-4.76	0.073
PA3923_at	-7.26	0.001
PA3962_at	-3.48	0.006
PA3976_thiE_at	-2.95	0.003
PA3977_hemL_at	-2.66	0
PA3981_at	-2.13	0.007
PA3988_at	-3.68	0.008
PA3999_dacC_at	-2.99	0.001
PA4015_at	-3.23	0.001
PA4024_eutB_at	-2.93	0.042
PA4026_at	-2.01	0.006
PA4033_at	-2.66	0.104
PA4053_ribE_at	-2.46	0.03
PA4054_ribB_at	-4.99	0.001
PA4055_ribC_at	-3.71	0.03

PA4063_at	-2.16	0.075
PA4067_oprG_at	-2.30	0.028
PA4090_at	-2.08	0.022
PA4139_at	-3.48	0.12
PA4175_at	-2.73	0
PA4232_ssb_at	-3.68	0.003
PA4235_bfrA_at	-4.14	0.006
PA4236_katA_at	-4.56	0.008
PA4238_rpoA_at	-5.90	0.001
PA4239_rpsD_at	-5.62	0.002
PA4240_rpsK_at	-6.96	0
PA4241_rpsM_at	-9.38	0.01
PA4242_rpmJ_at	-9.19	0.021
PA4243_secY_at	-4.00	0.007
PA4244_rplO_at	-3.84	0.012
PA4245_rpmD_at	-3.73	0.032
PA4246_rpsE_at	-3.73	0.029
PA4247_rplR_at	-5.50	0.004
PA4248_rplF_at	-4.89	0.002
PA4249_rpsH_at	-4.56	0.011
PA4251_rplE_at	-2.95	0.013
PA4252_rplX_at	-8.00	0.008
PA4253_rplN_at	-5.74	0.006
PA4254_rpsQ_at	-5.98	0.006
PA4255_rpmC_at	-5.06	0.001
PA4256_rplP_at	-5.03	0.01
PA4257_rpsC_at	-4.44	0
PA4258_rplV_at	-6.02	0.005
PA4259_rpsS_at	-5.13	0.01
PA4260_rplB_at	-4.72	0.026
PA4261_rplW_at	-4.53	0.008
PA4262_rplD_at	-5.82	0
PA4263_rplC_at	-4.20	0
PA4264_rpsJ_at	-3.25	0.008
PA4266_fusA1_at	-6.92	0
PA4267_rpsG_at	-7.11	0.001
PA4268_rpsL_at	-9.13	0.001
PA4269_rpoC_at	-2.45	0.004
PA4270_rpoB_at	-3.63	0.004
PA4271_rplL_at	-3.41	0.011
PA4272_rplJ_at	-5.10	0.026
PA4273_rplA_at	-5.21	0.006
PA4274_rplK_at	-5.58	0.002
PA4296_at	-3.10	0.008
PA4309_pctA_at	-2.83	0.006
PA4310_pctB_at	-3.12	0.005
PA4315_mvaT_at	-2.53	0.04
PA4328_at	-3.73	0.01
PA4329_pykA_at	-2.93	0.025
PA4333_at	-3.43	0.02
PA4356_xenB_at	-2.11	0.008

PA4366_sodB_at	-2.46	0.024
PA4370_at	-5.17	0.001
PA4385_groEL_at	-2.91	0.028
PA4386_groES_at	-3.46	0.003
PA4395_at	-2.79	0.068
PA4403_secA_at	-2.69	0.007
PA4407_ftsZ_at	-4.11	0.005
PA4423_at	-2.89	0.004
PA4424_at	-2.45	0.006
PA4425_at	-4.79	0.003
PA4426_at	-2.04	0.001
PA4430_at	-2.53	0.094
PA4431_at	-4.29	0.005
PA4433_rplM_at	-4.03	0.086
PA4441_at	-3.53	0.003
PA4442_cysN_at	-2.14	0.046
PA4450_murA_at	-2.25	0.023
PA4459_at	-2.64	0.024
PA4460_at	-3.73	0
PA4461_at	-3.43	0.003
PA4462_rpoN_at	-2.38	0.041
PA4463_at	-4.29	0.002
PA4464_ptsN_at	-2.97	0.014
PA4465_at	-2.28	0.021
PA4469_at	-3.18	0
PA4471_at	-2.27	0.052
PA4483_gatA_at	-2.53	0.019
PA4496_at	-5.86	0.011
PA4497_at	-3.43	0.018
PA4526_pilB_at	-2.14	0.029
PA4527_pilC_at	-2.36	0.041
PA4550_fimU_at	-2.91	0.012
PA4552_pilW_at	-2.35	0
PA4554_pilY1_at	-2.36	0.008
PA4555_pilY2_at	-3.34	0.028
PA4556_pilE_at	-2.41	0.002
PA4568_rplU_at	-3.27	0.031
PA4578_at	-2.66	0.016
PA4587_ccpR_at	-4.11	0.002
PA4602_glyA3_at	-5.10	0.001
PA4606_at	-2.48	0.017
PA4611_at	-2.14	0.061
PA4623_r_at	-2.43	0.053
PA4646_upp_at	-2.16	0.045
PA4648_at	-3.94	0
PA4671_at	-3.16	0.101
PA4672_at	-2.14	0.073
PA4694_ilvC_at	-2.22	0.073
PA4695_ilvH_at	-2.06	0.039
PA4696_ilvI_at	-2.36	0.05
PA4701_at	-2.06	0.003

PA4703_at	-3.92	0.003
PA4726_at	-3.14	0.002
PA4731_panD_at	-2.08	0.003
PA4733_acsB_at	-2.10	0.082
PA4740_pnp_at	-4.76	0.016
PA4741_rpsO_at	-3.76	0.014
PA4745_nusA_at	-2.50	0.002
PA4751_ftsH_at	-2.19	0.007
PA4757_at	-2.23	0.037
PA4758_carA_at	-2.39	0.024
PA4761_dnaK_at	-2.31	0.042
PA4762_grpE_at	-2.10	0.034
PA4793_at	-3.27	0.036
PA4798_at	-2.23	0.005
PA4842_at	-2.51	0.011
PA4846_aroQ1_at	-3.03	0.003
PA4847_accB_at	-3.25	0.004
PA4848_accC_at	-3.43	0.001
PA4853_fis_at	-2.81	0.019
PA4878_at	-2.60	0.005
PA4880_at	-4.59	0.004
PA4881_at	-6.50	0.055
PA4907_at	-4.00	0.003
PA4911_at	-2.41	0.016
PA4912_at	-2.50	0.004
PA4913_at	-4.08	0.004
PA4919_pncB1_at	-4.32	0.011
PA4920_nadE_at	-4.82	0.042
PA4922_azu_at	-3.16	0.02
PA4935_rpsF_at	-3.20	0.025
PA4938_purA_at	-2.06	0
PA4941_hflC_at	-2.04	0.037
PA4944_at	-2.41	0.253
PA4971_at	-2.23	0.037
PA4974_at	-2.85	0.004
PA5013_ilvE_at	-3.39	0.01
PA5015_aceE_at	-5.24	0.007
PA5016_aceF_at	-2.48	0.005
PA5018_msrA_at	-2.20	0.052
PA5040_pilQ_at	-3.07	0.015
PA5041_pilP_at	-2.27	0.028
PA5043_pilN_at	-2.53	0.05
PA5044_pilM_at	-2.06	0.021
PA5046_at	-3.71	0.004
PA5051_argS_at	-3.07	0.002
PA5053_hslV_at	-2.17	0.048
PA5054_hslU_at	-2.48	0.056
PA5056_phaC1_at	-3.53	0.021
PA5063_ubiE_at	-2.43	0
PA5066_hisI_at	-2.45	0.066
PA5067_hisE_at	-2.68	0.039

PA5068_tatA_at	-2.43	0.003
PA5069_tatB_at	-2.77	0.008
PA5076_at	-2.58	0.049
PA5078_at	-2.41	0.001
PA5110_fbp_at	-2.51	0.001
PA5112_estA_at	-3.36	0.004
PA5119_glnA_at	-3.34	0
PA5128_secB_at	-3.14	0.028
PA5129_grx_at	-3.12	0.001
PA5134_at	-2.31	0
PA5148_at	-4.99	0.066
PA5152_at	-3.03	0.034
PA5153_at	-3.63	0.086
PA5167_at	-3.05	0.015
PA5170_arcD_at	-5.39	0.01
PA5171_arcA_at	-3.41	0.024
PA5172_arcB_at	-3.73	0.024
PA5173_arcC_at	-4.26	0
PA5192_pckA_at	-2.45	0.003
PA5210_at	-2.08	0.018
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PA5320_dfp_at	-2.07	0.006
PA5322_algC_at	-2.75	0.017
PA5344_at	-2.14	0.047
PA5348_at	-4.96	0.001
PA5380_at	-2.99	0.001
PA5427_adhA_at	-2.60	0.013
PA5429_aspA_at	-5.06	0.011
PA5436_at	-3.07	0.025
PA5438_at	-2.91	0
PA5446_i_at	-2.43	0.071
PA5461_at	-3.07	0.004
PA5475_at	-2.35	0.019
PA5490_cc4_at	-3.84	0.001
PA5494_at	-2.41	0.018
PA5497_at	-2.43	0.02
PA5505_at	-2.97	0.006
PA5546_at	-2.08	0.015
PA5554_atpD_at	-2.45	0.081
PA5555_atpG_at	-4.00	0.007
PA5556_atpA_at	-2.85	0.001

PA5557_atpH_at	-3.36	0.003
PA5569_rnpA_at	-2.46	0.013
PA5570_rpmH_at	-2.97	0.006
Pae_tRNA_Gly_s_at	-2.83	0.031

Table S3. Strains and plasmids

Strains/Plasmids	Relevant genotype or description	Source
Strains		
Escherichia coli		
DH5α	*F⁻ φ80lacZΔM15 Δ(lacZYA-argF)U169 recA1 endA1 hsdR17(rk⁻, mk⁺) phoA supE44 thi-1 gyrA96 relA1 tonA*	Invitrogen Corp.
P. aeruginosa		
PAO1	Wild type	B.H. Holloway
ΔbfmR	PAO1; *PA4101*::IS*lacZ*; Tet^R	(Petrova & Sauer, 2009)
ΔbfmR-Tet^S	*ΔbfmR* with a 63-bp insertion in *PA4101*, derived from *ΔbfmR* using the *cre*-mediated recombination	This study
PAO1-*gfp*	PAO1 containing pUC18T-mini-Tn7T-Gm-*gfpmut3a*; Gm^R	This study
PAO1/pJN105	PAO1 bearing empty pJN105 vector; Gm^R	(Petrova & Sauer, 2009)
ΔbfmR/pJN-*bfmR*	Complementation of *ΔbfmR*; Tet^R; Gm^R, arabinose-inducible	(Petrova & Sauer, 2009)
PAO1/pJN-*bfmR*	Arabinose-inducible expression of *bfmR*-V5/6XHis in PAO1; Gm^R	(Petrova & Sauer, 2009)
PAO1/pJN-*phdA*	Arabinose-inducible expression of *phdA* in PAO1; Gm^R	This study
ΔbfmR/pJN-*phdA*	Arabinose-inducible expression of *phdA* in *ΔbfmR*; Gm^R	This study
PAO1/ P_{bfmR}-*lacZ*	LacZ reporter strain	This study
PAO1/P_{bfmR}-*gfp*	GFP reporter strain	This study
ΔbfmR- Tet^S/P_{bfmR}-*gfp*	GFP reporter strain	This study
PA14	Wild type	
ΔphdA	PA14 *PA0691*::MAR2xT7; Gm^R	(Liberati *et al.*, 2006)
Plasmids		
pRK2013	Helper plasmid for triparental mating; *mob; tra*; Km^R	(Figurski & Helinski, 1979)
pJN105	Arabinose-inducible gene expression vector; pBRR-1 MCS; *araC*-P_{BAD}; Gm^R	(Newman & Fuqua, 1999)
mini-CTX-*lacZ*	Integration vector for single-copy, chromosomal *lacZ* fusions; Ω-*FRT-attP*-MCS, *ori, int,* and *oriT*; Tet^R	(Becher & Schweizer, 2000)
mini-CTX-*gfp*	Integration vector for single-copy, chromosomal *gfp* fusions; Ω-*FRT-attP*-MCS, *ori, int,* and *oriT*; Tet^R	(Hoang *et al.*, 2000)
pCre1	Vector bearing the *cre* recombinase system; Amp^R	(Bailey & Manoil, 2002, Banin *et al.*, 2005)
pJN-*bfmR*	*bfmR*-V5/6XHis cloned into pJN105 at *Eco*RI/*Spe*I	(Petrova & Sauer, 2009)
pJN-*phdA*	*phdA* cloned into pJN105 at *Eco*RI/*Sac*I	This study
pCTX-P_{bfmR}-*lacZ*	-500bp relative to translational start site of *bfmR* cloned into mini-CTX-*lacZ*; Tet^R	This study

pCTX-P_{bfmR}-*gfp*	-500bp relative to translational start site of *bfmR* cloned into mini-CTX-*gfp*; Tet^R	This study

Table S4. Oligonucleotides

Oligonucleotide	Sequence
	RT-PCR/ PCR
mreBf	CTGTCGATCGACCTGGG
mreBr	CAGCCATCGGCTCTTCG
rhlAf	GCGCGATGGCGACCAC
rhlAr	CACCACCGAGCTGCGG
lasBf	GCCGCCGACCTGATCG
lasBr	CAGCACCTGCTCGGCG
PA0691f	GCAGGAACTTGATCAGCG
PA0691r	GGACACTTCCTTGAGCGC
pqsAf	CATTCTCTCCCAGGCCAG
pqsAr	CAGTCGGCAGCGATATCG
pqsLf	GTGGTGGTAGTGGAACAGG
pqsLr	GCGTCGACGCTGGAATAG
coaBf	CAATGAAGCAACGCATCGC
coaBr	CGATGTAGCCGCCAATGG
PA0636f	GGCAGGATCAACGATCAG
PA0636r	CAGGCTTCTTGGCCTGAC
	Cloning*
PbfmR	GCGCGCgaattcTGCCTGGCTCCCGTGG
PbfmF1	GCGCGCaagcttCGTCAGCCGCTGTATCG
PbfmF2	GCGCGCaagcttGTTCCTGGGTCGCCAC
PbfmF3	GCGCGCaagcttGCTGATCACCGGCAATAC
PA0691_EcoRI_for	GCGCGCgaattcATGGAAAGTTACTCGAAAGTCGG
PA0691_SacI_rev	GCGCGCgagctcCTAGATATTCAGCCGTCGC
	DNA binding assays
PphdA_for**	CATGACAAAAGTTCGGTGGTG
PphdA_rev	CAATACTCACCGTCCTTCGC

* Restriction sites are indicated by nucleotides in lower case

** Primer used as biotinylated form for DNA binding assays for probe amplification, and non-biotinylated for the generation of specific competitor DNA

SUPPLEMENTARY FIGURES

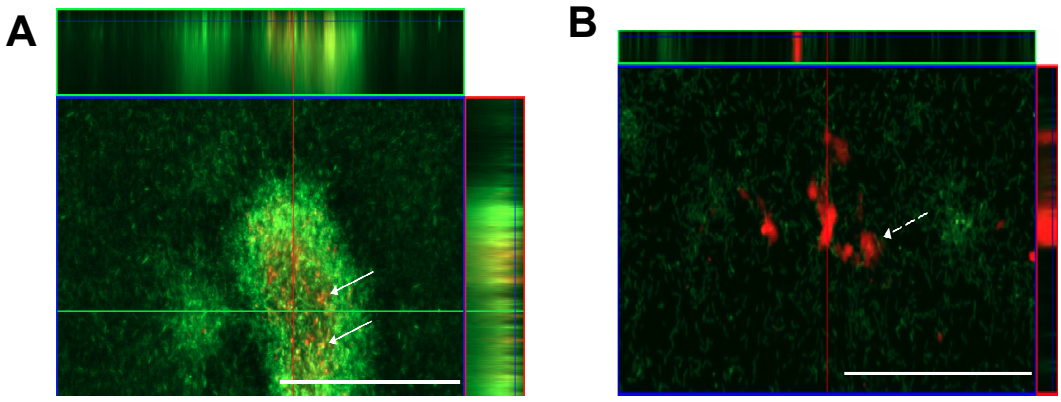
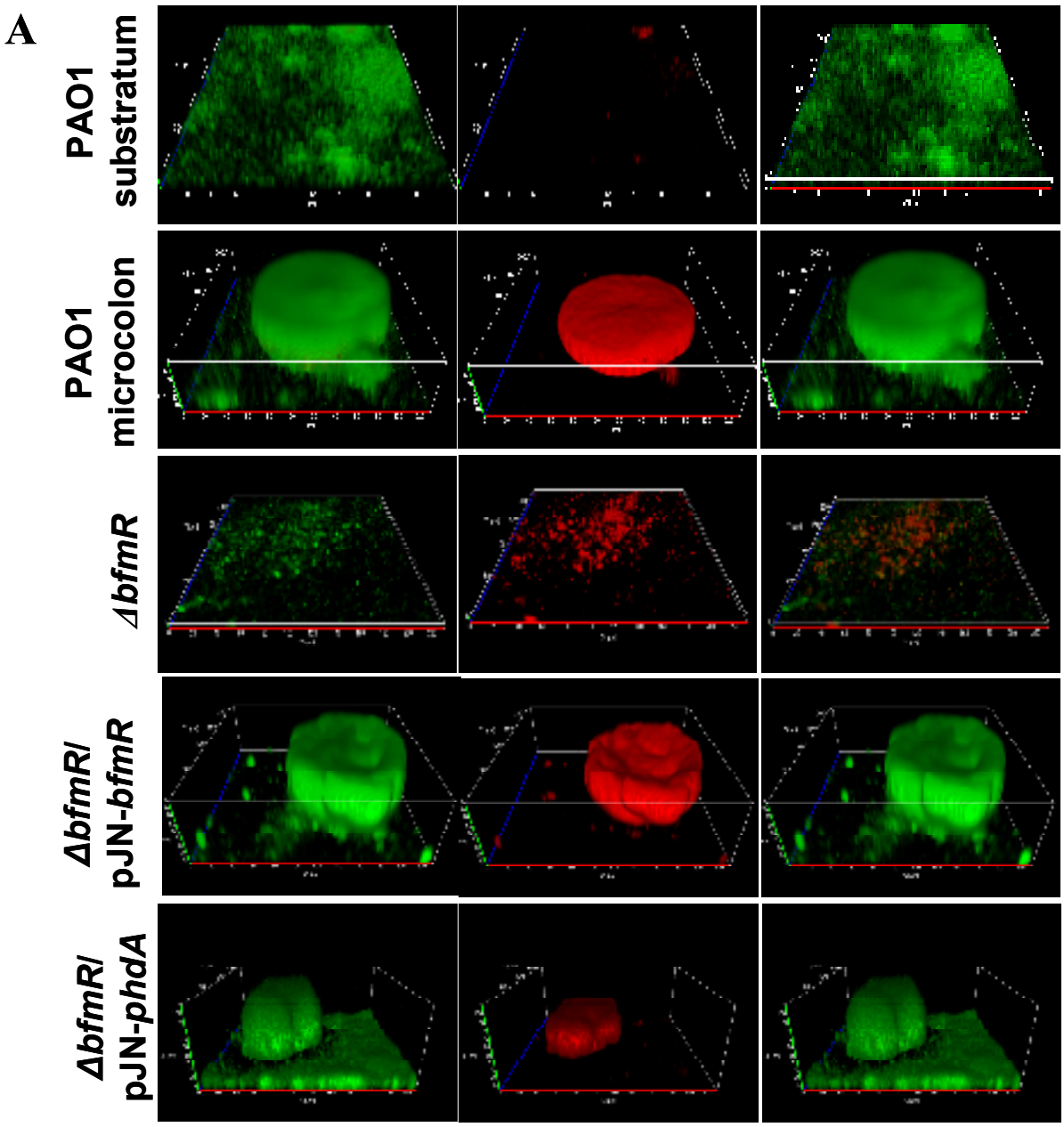
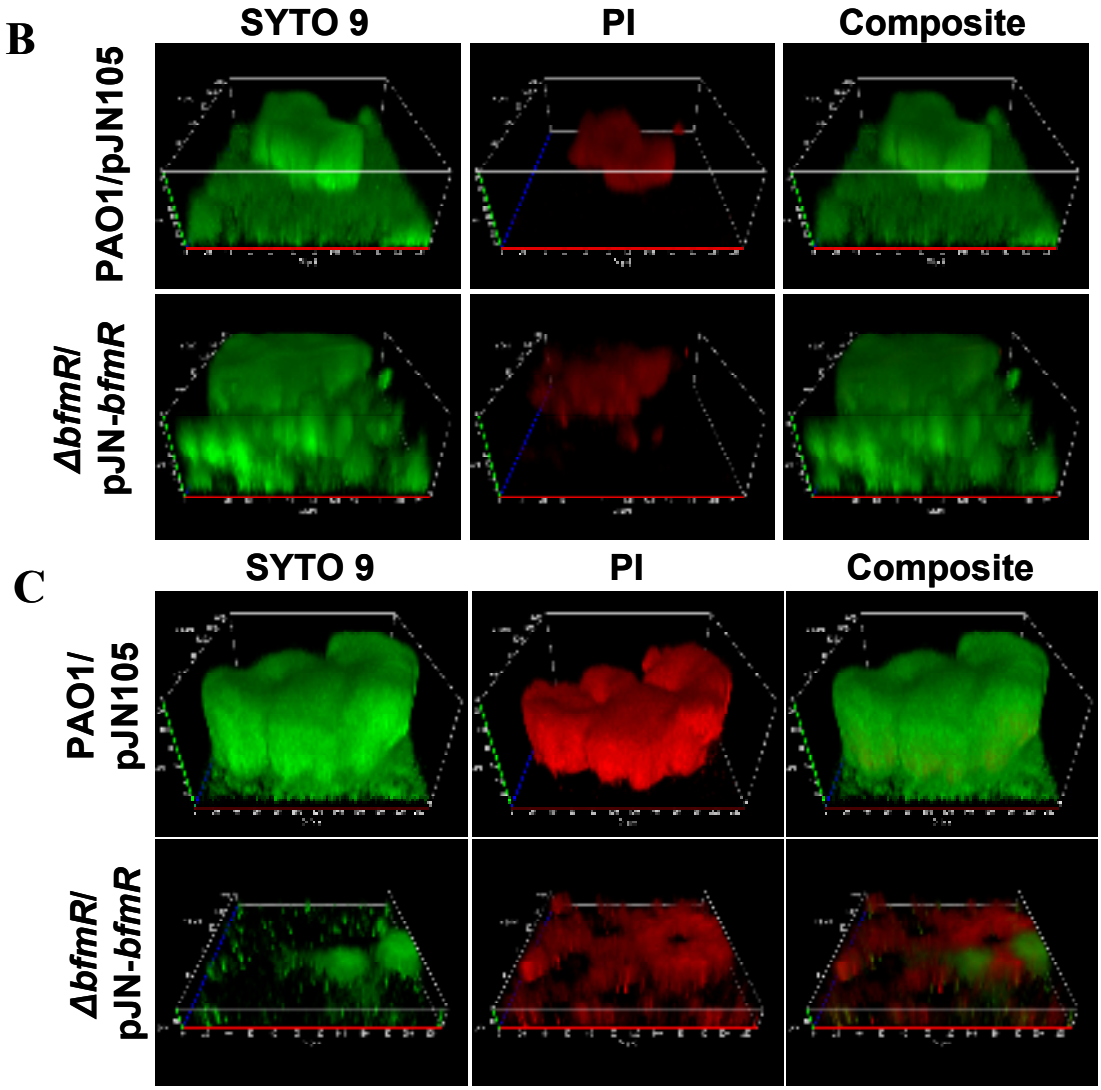


Figure S1. Inactivation of *bfmR* coincides with increased cell death and release of DNA (A-B). 6-day old *ΔbfmR* biofilms were stained with LIVE/DEAD *Bac*Light viability kit prior image acquisition by confocal microscopy. Arrows indicate material stained with propidium iodide not associated with cells. White bar = 100 μm.


A
PAO1 substratum
PAO1 microcolon
ΔbfmR
ΔbfmR/ pJN-bfmR
ΔbfmR/ pJN-phdA


B
SYTO 9
PI
Composite
PAO1/pJN105
ΔbfmR/ pJN-bfmR
C
SYTO 9
PI
Composite
PAO1/ pJN105
ΔbfmR/ pJN-bfmR

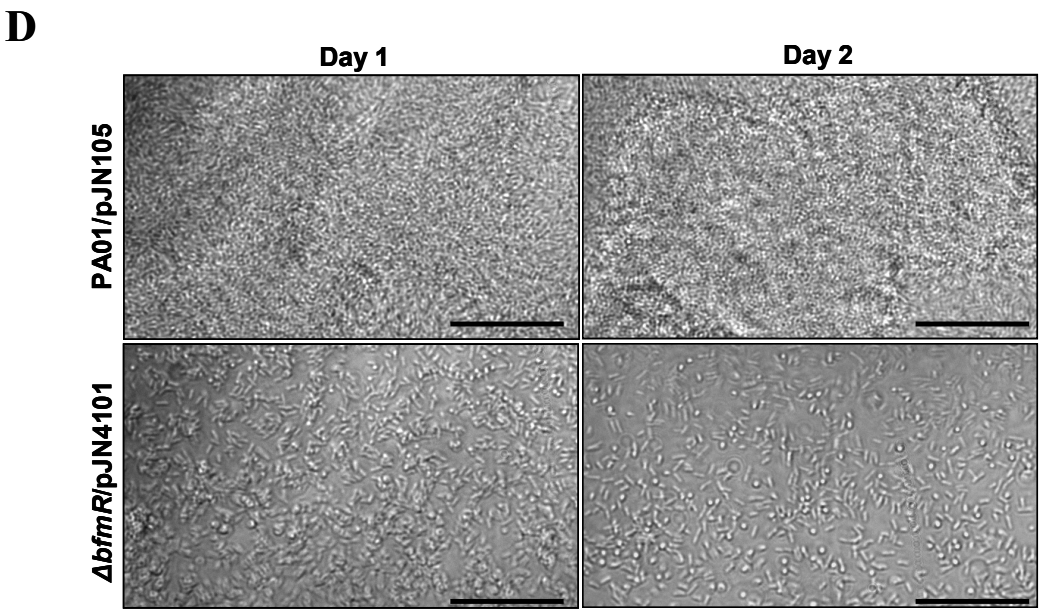


Figure S2. Detection of increased cell death as indicated by propidium iodide staining upon inactivation of *bfmR* in biofilms. (A) PAO1, *ΔbfmR*, and complemented *ΔbfmR* biofilms, grown under continuous flow conditions for 144 hr, were stained with SYTO 9 and propidium iodide (PI) using the LIVE/DEAD *Bac*Light viability kit. CSLM-acquired images were analyzed by splitting the green (SYTO 9) and red (PI) channels. (B) Confocal images of wild type PAO1 bearing the empty pJN105 vector and complemented *ΔbfmR* bearing pJN-*bfmR* were grown in the presence of arabinose for 144 hr. (C) Wild type PAO1 bearing the empty pJN105 vector and complemented *ΔbfmR* bearing pJN-*bfmR* were grown in the presence of arabinose for 144 hr, at which point, arabinose was removed in order to inactivate transcription from the pBAD promoter. Biofilms were allowed to grow for an additional 72 hrs before confocal images were acquired. (D) Brightfield images of *P. aeruginosa* PAO1/pJN105 and *ΔbfmR*/pJN-bfmR biofilms acquired 24 and 48 hrs post arabinose removal. Black bar = 25 μm.

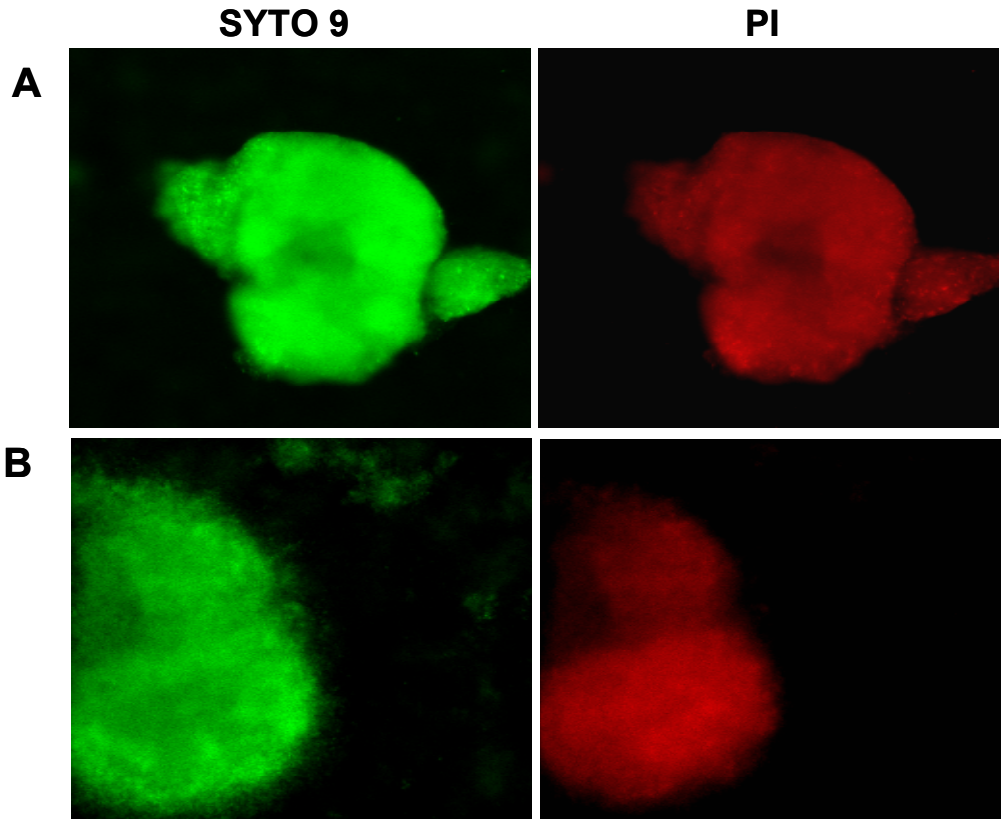


Figure S3. Overexpression of *bfmR* results in reduction of regions stainable with propidium iodide. PAO1 (A) and PAO1/pJN-*bfmR* (B) biofilms were stained with SYTO 9 and propidium iodide (PI) using the LIVE/DEAD *Bac*Light viability kit. Confocal images were acquired by splitting the green (SYTO 9) and red (PI) channels.

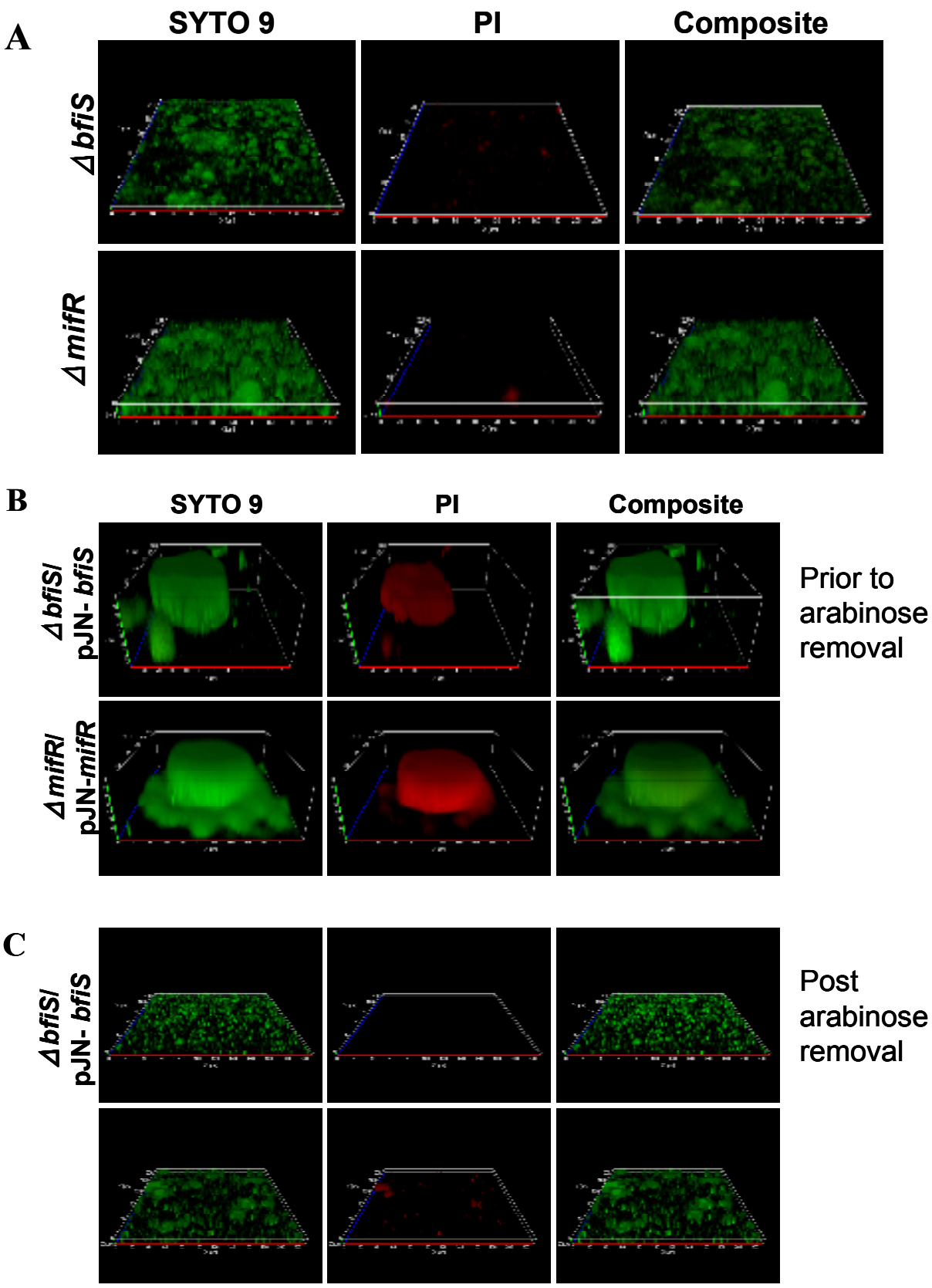
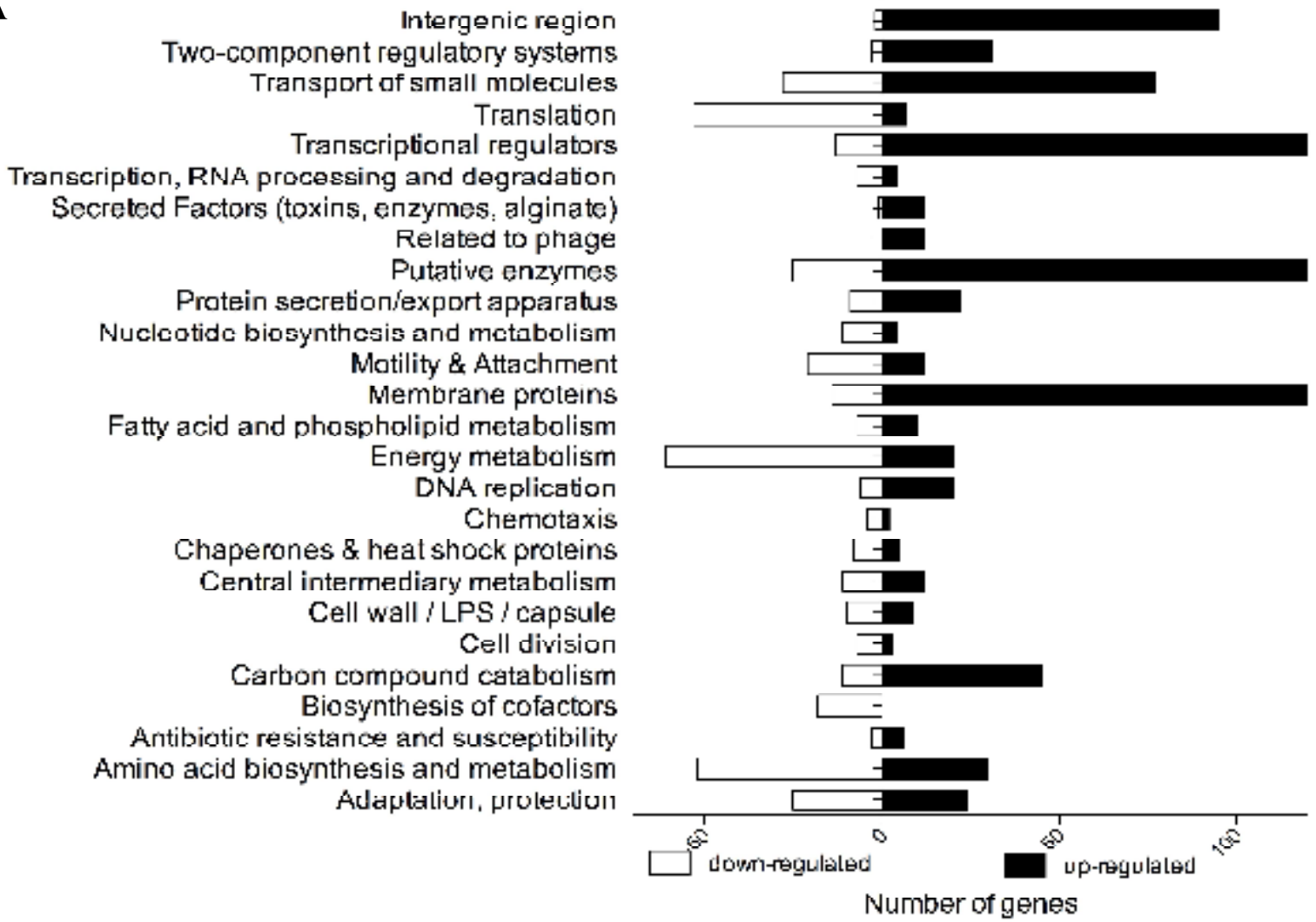

A
SYTO 9
PI
Composite
Δ bfiS
Δ mifR
B
SYTO 9
PI
Composite
Δ bfiS/ pJN- bfiS
Δ mifR/ pJN-mifR
Prior to arabinose removal
C
Δ bfiS/ pJN- bfiS
Post arabinose removal

Figure S4. Detection of cell death as indicated by propidium iodide staining upon inactivation of *bfiS* and *mifR* in biofilms. (A) *ΔbfiS* and *ΔmifR* biofilms, grown under continuous flow conditions for 144 hr, were stained with SYTO 9 and propidium iodide (PI) using the LIVE/DEAD *Bac*Light viability kit. CSLM-acquired images were analyzed by splitting the green (SYTO 9) and red (PI) channels. (B) Confocal images of complemented *ΔbfiS* and *ΔmifR* biofilms bearing pJN-*bfiS* and pJN-*mifR*, respectively were grown in the presence of arabinose for 144 hr. (C) Following 144 hrs of growth in the presence of arabinose, arabinose was removed from the growth medium in order to inactivate transcription from the PBAD promoter. Biofilms were allowed to grow for an additional 72 hrs before confocal images were acquired.

A


Intergenic region
Two-component regulatory systems
Transport of small molecules
Translation
Transcriptional regulators
Transcription, RNA processing and degradation
Secreted Factors (toxins, enzymes, alginate)
Related to phage
Putative enzymes
Protein secretion/export apparatus
Nucleotide biosynthesis and metabolism
Motility & Attachment
Membrane proteins
Fatty acid and phospholipid metabolism
Energy metabolism
DNA replication
Chemotaxis
Chaperones & heat shock proteins
Central intermediary metabolism
Cell wall / LPS / capsule
Cell division
Carbon compound catabolism
Biosynthesis of cofactors
Antibiotic resistance and susceptibility
Amino acid biosynthesis and metabolism
Adaptation, protection
60
0
60
120
down-regulated
up-regulated
Number of genes

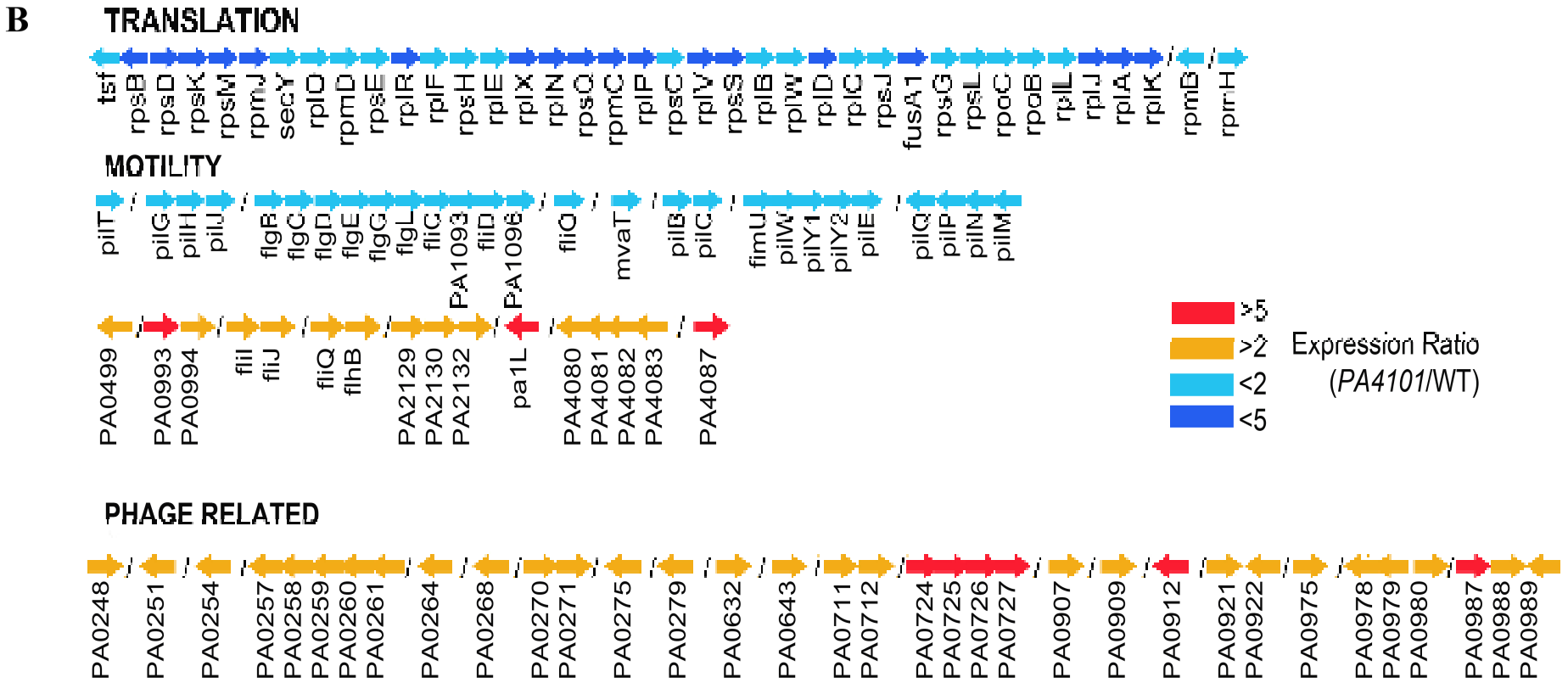


Figure S5. Genome-wide transcriptional profiling in *P. aeruginosa* and *P. aeruginosa ΔbfmR* biofilms using Genomic Microarray. (A) Overview of differentially expressed genes based on category. (B). Selected upregulated genes encoding phage proteins and downregulated genes involved in translation and motility. Shown are ratios of hybridization intensities of targets generated from *P. aeruginosa* and *P. aeruginosa bfmR* total RNAs based on triplicate experiments. Arrow direction indicates the gene orientation and connected arrows delineate putative operons; nonadjacent genes are separated by diagonal bars (Stover *et al.*, 2000). The complete data set is provided in Supplemental Tables S3-S4.

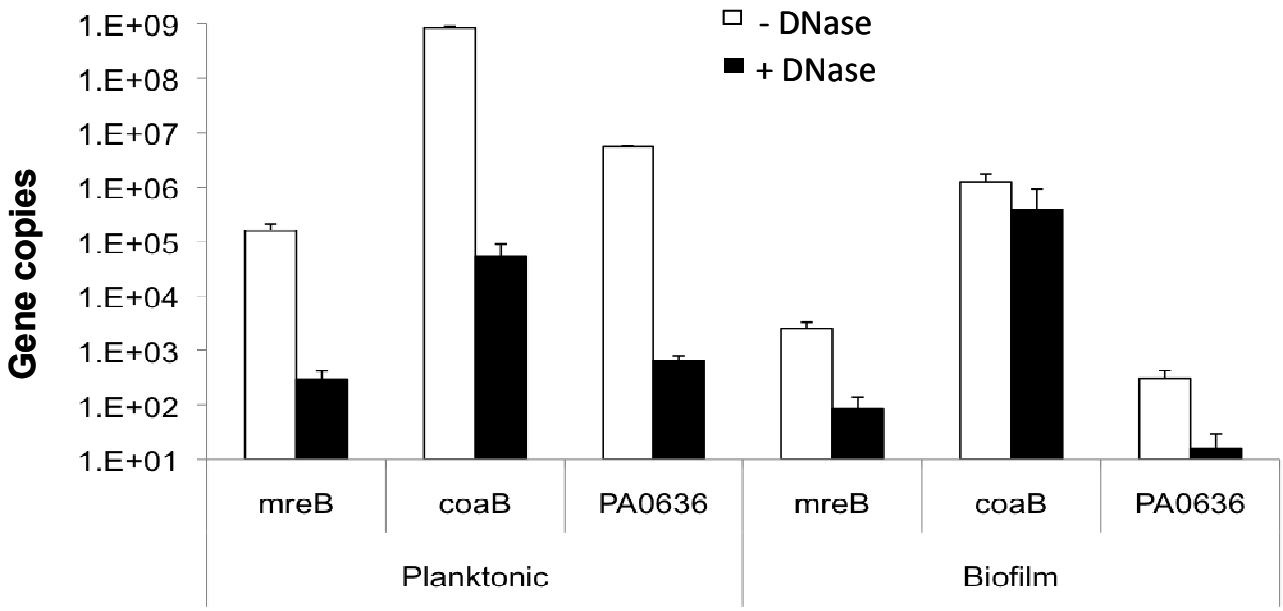


Figure S6. Determination of *coaB* and PA0636 gene copy numbers present in supernatants obtained from *P. aeruginosa* grown planktonically and as biofilms prior to and post DNase I treatment. Experiments were performed in triplicate. Error bars indicate standard deviation. *, significantly different from *mreB* ($p < 0.05$).

Supplementary References

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