**Table S1. The opacity ratio of six regulator mutants and its isogenic revertants1**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Strain(genotype)** | **No. of colonies** | **%2opaque**  | **%3transparent** | **SEM (±)4** | **Chi-square, df** | ***P* value** | **Colony phenotype** |
| **Opaque** | **Transparent** |
| ST606(ST556 *rpsL1*) | 92 | 26 | 77.5 | 22.5 | 0.9 | **\_** | **\_** | Normal |
| 118 | 32 |
| 78 | 25 |
| TH10784(Δ*rr05*) | 84 | 60 | 60.8 | 39.2 | 1.7 | 5.984, 1 | 0.0144 | Transparent |
| 63 | 42 |
| 80 | 45 |
| TH10790(*rr05* rev) | 131 | 0 | 100.0 | 0 | 0 | 25.99, 1 | <0.0001 | Opaque |
| 120 | 0 |
| 109 | 0 |
| TH9164(Δ*rr06*) | 12 | 140 | 11.5 | 88.5 | 2.5 | 85.53, 1 | <0.0001 | Transparent |
| 13 | 114 |
| 20 | 102 |
| TH9553(*rr06* rev) | 100 | 28 | 74.1 | 25.9 | 2.8 | 0.2433, 1 | 0.6218 | Normal |
| 110 | 50 |
| 117 | 38 |
| TH9181(Δ*rr08*) | 48 | 87 | 30.6 | 69.4 | 4.4 | 42.59, 1 | <0.0001 | Transparent |
| 45 | 86 |
| 34 | 121 |
| TH10793(*rr08* rev) | 121 | 30 | 71.2 | 28.8 | 7.0 | 0.9356, 1 | 0.3334 | Normal |
| 62 | 46 |
| 76 | 24 |
| TH8468(Δ*rr09*) | 43 | 97 | 31.9 | 68.1 | 1.5 | 40.83, 1 | <0.0001 | Transparent |
| 47 | 88 |
| 37 | 86 |
| TH10796(*rr09* rev) | 92 | 23 | 81.1 | 18.9 | 1.1 | 0.4822, 1 | 0.4874 | Normal |
| 80 | 20 |
| 90 | 18 |
| TH9063(Δ*rr11*) | 50 | 139 | 23.7 | 76.3 | 1.8 | 56.19, 1 | <0.0001 | Transparent |
| 45 | 140 |
| 31 | 122 |
| TH10799(*rr11* rev) | 104 | 37 | 74.9 | 25.1 | 5.1 | 0.1096, 1 | 0.7405 | Normal |
| 96 | 18 |
| 80 | 40 |
| TH9167(Δ*rr14*) | 24 | 128 | 15.5 | 84.5 | 0.7 | 74.79, 1 | <0.0001 | Transparent |
| 20 | 120 |
| 24 | 121 |
| TH9555(*rr14* rev) | 70 | 50 | 67.2 | 32.8 | 5.1 | 2.48, 1 | 0.1153 | Normal |
| 74 | 36 |
| 76 | 24 |

1the opaque and transparent colonies on each plate in a representative experiment were enumerated as described in Fig. 1.

2, 3 the average opaque and transparent colony ratio were calculated by the average of followed values from three plates: number of each form of colony divided by the total colony number \*100%.

4The standard error of means were calculated on the basis of the three duplicate plates.