**Table S2. Confirmation of motility defects (loss of >75% motility compared to wild type) in mutants identified in primary screening.**

|  |  |  |
| --- | --- | --- |
| STM | Gene | Motility compared to wild type\* |
| Swimming Mean ± SD | Swarming Mean ± SD |
| ***STM1178*** | *flgF* | **0.00 ± 0.00\*\*** | **0.01 ± 0.01** |
| ***STM1179*** | *flgG* | **0.00 ± 0.00** | **0.01 ± 0.01** |
| ***STM1913*** | *flhA* | **0.00 ± 0.00** | **0.01 ± 0.01** |
| ***STM1914*** | *flhB* | **0.00 ± 0.00** | **0.00 ± 0.00** |
| ***STM1916*** | *cheY* | **0.23 ± 0.04** | **0.01 ± 0.01** |
| ***STM1922*** | *motB* | **0.00 ± 0.00** | **0.01 ± 0.01** |
| ***STM1923*** | *motA* | **0.00 ± 0.00** | **0.00 ± 0.00** |
| ***STM1960*** | *fliD* | **0.14 ± 0.01** | **0.05 ± 0.05** |
| ***STM1976*** | *fliM* | **0.02 ± 0.02** | **0.05 ± 0.05** |
| ***STM2083*** | *rfbK* | **0.04 ± 0.05** | **0.02 ± 0.03** |
| ***STM2085*** | *rfbN* | **0.12 ± 0.08** | **0.02 ± 0.01** |
| ***STM3718*** | *rfaI* | **0.17 ± 0.11** | **0.02 ± 0.01** |
| ***STM0343*** |  | **0.20 ± 0.04** | **0.08 ± 0.06** |
| *STM0363* |  | 0.78 ± 0.22 | 0.50 ± 0.10  |
| ***STM0551*** |  | **0.05 ± 0.02** | **0.03 ± 0.02** |
| ***STM0669*** |  | **0.23 ± 0.10** | **0.00 ± 0.00** |
| ***STM1358*** | *aroD* | **0.11 ± 0.05** | **0.05 ± 0.05** |
| *STM1573* |  | 0.38 ± 0.11 | 0.00 ± 0.00 |
| *STM1660* | *fnr* | 0.49 ± 0.11 | 0.43 ± 0.12 |
| *STM1829* |  | 0.35 ± 0.07 | 0.06 ± 0.06 |
| *STM1987* |  | 0.33 ± 0.05 | 0.00 ± 0.00 |
| ***STM2010*** |  | **0.00 ± 0.00** | **0.00 ± 0.00** |
| *STM2330* | *lrhA* | 0.99 ± 0.10 | 1.04 ± 0.22 |
| *STM2341* |  | 0.43 ± 0.09 | 0.05 ± 0.05 |
| *STM2342* |  | 0.46 ± 0.07 | 0.05 ± 0.05 |
| *STM2435* | *prxK* | 0.41 ± 0.11 | 0.34 ± 0.28 |
| ***STM2785*** | *tctD* | **0.11 ± 0.04** | **0.02 ± 0.02** |
| ***STM2880*** |  | **0.18 ± 0.03** | **0.02 ± 0.02** |
| *STM2901* |  | 0.41 ± 0.08 | 0.24 ± 0.09 |
| *STM3501* | *envZ* | 0.43 ± 0.03 | 0.01 ± 0.01 |
| *STM3737* |  | 0.48 ± 0.11 | 0.02 ± 0.02 |
| *STM3860* |  | 0.51 ± 0.05 | 0.19 ± 0.13 |
| *STM4302* |  | 0.49 ± 0.04 | 0.05 ± 0.05 |
| ***STM4591*** | *sthE* | **0.23 ± 0.01** | 0.04 ± 0.14 |
| ***STM4595*** |  | **0.21 ± 0.03** | **0.25 ± 0.22** |

\* - Diameter of swimming and swarming rings were measured after 3.5 hrs and 5.5 hrs of incubation at 37 0C, respectively, and compared to wild type. Results are shown as the mean of three independent experiments

\*\* - Mutants in bold were selected for further characterization