**S1 Table: Primers used for strain construction**

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| **Primers** | **Sequence (5’ to 3’)** | **Purpose** |
| **Deletion construction** | | |
| LrhA-UPF | GTCGACATTGTCCAGTTTGCCGG | Amplify 1 kb region upstream of *lrhA* |
| LrhA-UPR | AGTGGAATATAGGCGGCCGCCTTCACTTATTAGAG |
| LrhA-DNF | GCGGCCGCCTATATTCCACTATCCCGTCTTC | Amplify 1 kb region downstream of *lrhA* |
| LrhA-DNR | GGATCCCCAATGCGCACCAG |
| LrhA-1kbUPF-attB1 | GGGGACAAGTTTGTACAAAAAAGCAGGCTGTCGACGTTTGCCGGATTTATCAATTTG | Amplify 2 kb deletion fragment of *lrhA* with flanking *attB* sites |
| LrhA-1kbDNR-attB2 | GGGGACCACTTTGTACAAGAAAGCTGGGTGGATCCGCGCACCAGATAAACCAGGC |
| UP-LrhA-SeqF | GTATGACAGACCCATTTACCCCG | Screen/sequence mutants for *lrhA* deletion |
| IN-LrhA-SeqF | GCGATCCCTCTGGTATTGCTGG |
| DN-LrhA-SeqR | GCCCTGTTGGCCAGAGTATG |
| RcsA-UPF | GTCGACATCCTTCAACGGTCATTTGTG | Amplify 1 kb region upstream of *rcsA* |
| RcsA-UPR | AGTGGAATATAGGCGGCCGCCTCACCAATTTGTTATC |
| RcsA-DNF | GCGGCCGCCTATATTCCACTCCTCACAGAACTG | Amplify 1 kb region downstream of *rcsA* |
| RcsA-DNR | GGATCCGATAGCGCCTTCAAGC |
| RcsA-1kbUPF-attB1 | GGGGACAAGTTTGTACAAAAAAGCAGGCTGTCGACCAACGGTCATTTGTGGCTTATC | Amplify 2 kb deletion fragment of *rcsA* with flanking *attB* sites |
| RcsA-1kbDNR-attB2 | GGGGACCACTTTGTACAAGAAAGCTGGGTGGATCCGCCTTCAAGCACCGAACCGAC |
| UP-RcsA-SeqF | TACCCGATGTGGATTCGACGCC | Screen/sequence of mutants for *rcsA* deletion |
| IN-RcsA-SeqF | CCAGCCCTGAGGAAATACGCGG |
| DN-RcsA-SeqR | TTGAAATCATCCATCTCACCAATACGCGC |
| **Chromosomal complementation construction** | | |
| EcoRI-PlrhA-F | GAATTCTGCACAATGTACTCTCCTCACG | Amplify promoter and coding region of *lrhA,* and screen conjugants |
| XhoI-LrhA-R | CTCGAGCTATTACTCTTCATCGTCCAGCAG |
| SpeI-RcsA-F | ACTAGTGAAATTCACAACTATCCGGGCATTTTTC | Amplify promoter and coding region of *rcsA,* and screen conjugants |
| SacI-RcsA-R | GAGCTCCTATCTTACGTTGACGTAAATACCAG |
| *glmS* downstream | TCTCTGATAAGCACCATGCCCTGT | PCR screen and sequence for validation of chromosomal insertion [32] |
| *glmS* intergenic region rev | TACGGTGCTACGCATCAGTGTCAT |
| **GFP plasmid construction** | | |
| TFRcsAFwdEcoRI | GAATTGGAAATTCACAACTATCCGGGCATTTTTC | Primers used for GFP transcriptional fusion construction |
| TFRcsARevKpnI | GGTACCGTTAGCGACCCTCACCAATTTGTTATCC |