### Supplementary Table S1. Genetic variations in different *Aa* pairs

| Pairs      | Position | Mutation | Annotation | Description                                                                 | Gene       |
|------------|----------|----------|------------|-----------------------------------------------------------------------------|------------|
| 4R VS 4S  | 861599   | Δ1bp     | Intergenic | Flp pilus assembly protein, pilin Flp/Metal-dependent hydrolase YbeY, involved in rRNA and/or ribosome maturation and assembly | *flp* promotor |
| 5R VS 5S  | 863134   | T→C      | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |
| 23R VS 23S| 863092   | T→C      | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |
| 30R VS 30S| 894165   | T→G      | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |
| 31R VS 31S| 1029359  | T→A      | Genic      | Single-stranded-DNA-specific exonuclease RecJ                               | *recJ*     |
| 4R VS ATCC | 1478055  | Δ1bp     | Intergenic | Metal-dependent hydrolase YbeY, involved in rRNA and/or ribosome maturation and assembly/ Flp pilus assembly protein, pilin Flp | *flp* promotor |
| 5R VS ATCC| 863123   | Δ1bp     | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |
| 23R VS ATCC| 1539574 | Δ1bp     | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |
| 30R VS ATCC| 894167  | Δ1bp     | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |
| 31R VS ATCC| 884999  | Δ1bp     | Intergenic | Flp pilus assembly protein, pilin Flp /Phosphate starvation-inducible protein PhoH, predicted ATPase | *flp* promotor |

*Please note that the position of the SNPs in the pairwise comparisons of R isolates and their derivative S strains refers to the position in the genome sequences of the S strains submitted to NCBI. The position of the SNP detected in the *flp* promoter region of the ATCC 29522 type strain of *Aa* refers to the respective position in the genome of the R isolate that was used in the respective SNPs analysis.