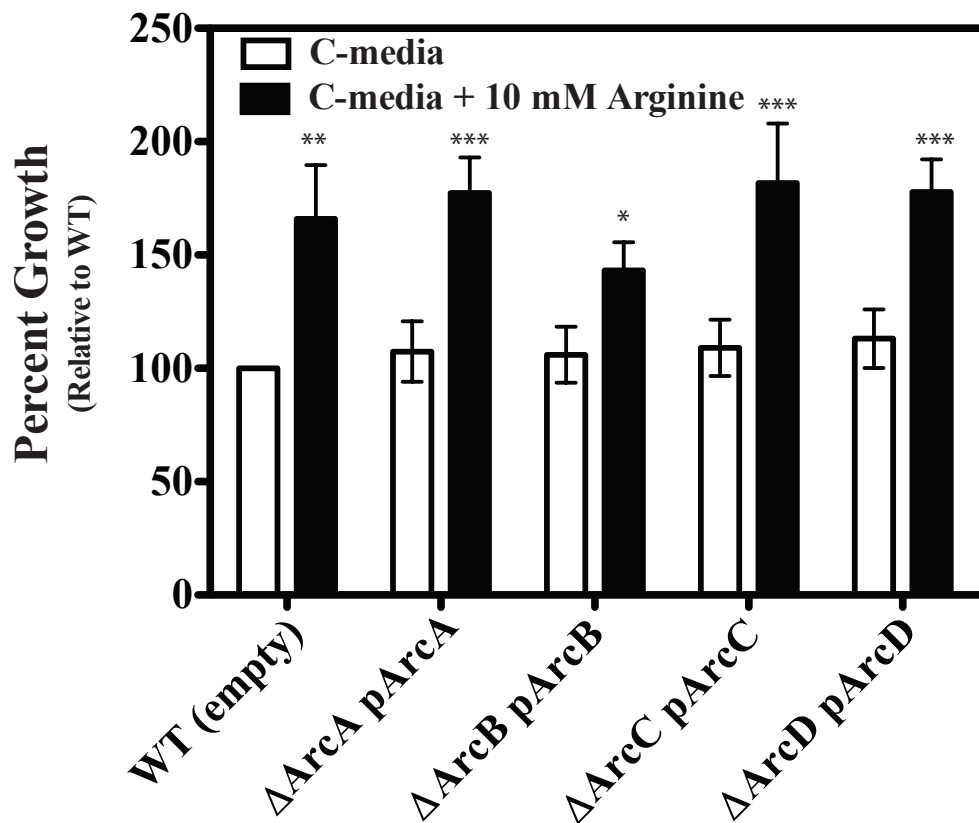


**Supplementary Figure 1. Growth curves of *S. pyogenes*.** Growth curves of the wild type strain HSC5 and generated Arc mutants. Strains were back diluted into designated media and aliquoted into a 96-well plate. Growth was monitored by measuring OD600 using a Tecan Infinite M200 Pro.

## Supplementary Figure 1



**Supplementary Figure 2: Complementation of Arc mutants.** Wild type strain HSC5 complemented with an empty vector (WT) and the indicated mutant strain ectopically expressing the indicated Arc protein were cultured in C-medium (Unsupp.) and C-medium supplemented with 10 mM arginine in the presence of antibiotics. Following 16 hrs of incubation, growth yields were measured by OD600. Data are presented as percent growth relative to wild type grown in un-supplemented C-medium, and are the mean and standard deviation from at least three independent experiments. Differences in growth yield between each supplemented culture vs. unsupplemented cultures were tested for significance using Mann-Whitney U-test (\*,  $P < 0.05$ , \*\*,  $P < 0.01$ , \*\*\*,  $P < 0.001$ )

## Supplementary Figure 2