

The RhIR mutant of the bacterium *Pseudomonas aeruginosa* shows attenuated virulence and increased antibiotic susceptibility compared to the wild type strain

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Results

RhIR Mutant

RhIR is a quorum sensing receptor and transcriptional regulator in *Pseudomonas aeruginosa* that activates the transcription of various virulence factors. Specifically, RhIR promotes the expression of genes coding for pyocyanin, biofilm formation, elastases, along with genes for many other virulence factors. Clinically, RhIR mutants almost never exist while bacteria containing mutations in other quorum-sensing genes naturally occur in patients. This implies that RhIR mutants are not as virulent and that this gene is essential to the pathogenicity of *P. aeruginosa*. The goal of our research is to use biofilm formation and pyocyanin production as biomarkers to compare the pathogenicity of wild type versus the RhIR mutant strains. Also, there is very limited information on the role of pyocyanin production on biofilm formation and we hypothesize that *P. aeruginosa* uses a novel mechanism known as or sacrificial which is bacterial apoptosis. To test this hypothesis we looked at the autolysis ability of the wild type versus mutant strains

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