Pseudomonas Aeruginosa Biofilm Formation in Different Environments

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Various bacteria, such as the soil microbe *Pseudomonas aeruginosa*, form into strong structures to defend themselves from antibiotics and other harmful materials. These structures are called biofilms. The goal of this research is to isolate *P. aeruginosa* from several soil samples and determine whether they are able to form biofilms in those environments. Another goal of this research is to find out how different environmental factors affect the formation of *Pseudomonas* biofilms. We isolated *P. aeruginosa* from soil samples using *Pseudomonas* Isolation Agar plates. The colonies most similar to *P. aeruginosa* were picked, cultured, and tested by PCR in order to confirm that the strains were actually *P. aeruginosa*. Using these methods, so far we have collected 12 *P. aeruginosa* strains and we are collecting more strains from different soil samples. In future studies, we will determine whether these strains form biofilms in soil. We will also demonstrate the effect of magnesium on *P. aeruginosa* on biofilm formation. These studies will begin to investigate how altering environmental conditions can influence persistence of this bacterial pathogen in the soil. These studies can have broad implications for transmission of the bacterium from the environment to humans during disease.

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