

Fungicidal Properties of *Pseudomonas aeruginosa*

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Nosocomial infections are a potentially lethal and prevalent hazard in the hospital setting. There are over 99,000 associated deaths in American hospitals annually with 1 in 25 hospitalized patients contracting a healthcare-associated infection daily (Healthcare-Acquired Infections: "Who's at Risk?", n.d., para. 2). Some HAs (healthcare-associated infections) even demonstrate a level of resistance to some antimicrobial drugs. It is the susceptibility of hospitalized patients and immunodeficient persons of contracting a nosocomial infection that inspired me to find a way to inhibit the spread of HAs in the medical workplace. I decided to test if properties of *P. aeruginosa* (*Pseudomonas aeruginosa*) could be used as possible inhibitors of *Malassezia* fungi (based on a similar experiment done by other researchers with *P. aeruginosa* and *Candida* fungi) (Kolter, 2002). After inoculating test samples of *P. aeruginosa* into *Malassezia* spp. yeast, consistent signs of fungicidal activity could be seen in most plates tested. The *P. aeruginosa* averaged a zone of inhibition of 3.55 mm x 3.41 mm on the Colorex yeast plates and 17.5 mm x 19.2 mm on the Mueller Hinton Agar plates. Although the averages of the area of inhibition created by *P. aeruginosa* was not as large as those made by the positive controls (Miconazole: 44 mm x 45.5 mm for the Colorex yeast plates and 57.5 mm x 55 mm for the Mueller Hinton Agar plates, Chlorhexidine: 32.5 mm x 30 mm for the yeast plates and 23.5 mm x 26 mm for the Mueller Hinton Agar plates), the *P. aeruginosa* inoculated samples still showed a relatively promising result. Although the results supported my hypothesis, the actual mechanisms behind the fungicidal properties remain unknown. Further experimentation will be needed to isolate such properties.

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