

Synergistic Activity of Antifungals and Essential Oils against *Candida auris*

Kayla Graham, Ryan Parker, Christopher Cornelison

BioInnovation Laboratory, Kennesaw State University

Candida auris is garnering significant attention as an emerging human pathogen. *C. auris* is responsible for an increasing number of nosocomial blood infections within immunocompromised individuals. This yeast is challenging to control because it can survive on fomites for weeks, is typically misdiagnosed for closely related species, and is commonly multi-drug resistant. The Bioinnovation Lab of Kennesaw State University has been examining the use of several antifungals and essential oils to see if they display synergism in inhibiting and killing this emerging human pathogen. First, we tested the antifungal activity of multiple different essential oils. We then took the top three essential oils that proved to be the most inhibitory to the growth of *C. auris* and combined them with four different antifungals in checkerboard assays. Among the combinations tested, some showed additive inhibition in the growth of *C. auris* while Flucytosine with clove bud oil as well as Flucanazole with clove bud oil showed synergism in killing *C. auris*. These findings could potentially help with the development of surface disinfectants, dermal sanitizers or even a treatment for infection caused by *C. auris*.