

TITLE: ANTIFUNGAL EFFECT OF F4A FRACTION OBTAINED FROM CULTURE OF *PSEUDOMONAS AERUGINOSA* LV STRAIN AGAINST *CANDIDA AURIS*

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ABSTRACT:

Candida auris is an emerging fungal pathogen that has concerned the major health institutions worldwide due to its pandemical potential, along with multiresistance to the main commercial antifungals, high proliferation and transmission in intensive care units, as well as biofilm formation, which favors its survival in diverse environmental conditions. The incorrect clinical identification of *C. auris* contributes to the significant mortality commonly associated with the infections caused by this pathogen. Aiming at new alternatives for the treatment of *C. auris* infections, the present study assessed the effect of F4A fraction obtained from cultures of *Pseudomonas aeruginosa* LV strain, against sessile and planktonic cells of clinical isolates *C. auris* CBS 10913 and *C. auris* CBS 12766. The minimal inhibitory concentration (MIC) was determined by the broth microdilution assay and, for the minimal fungicidal concentration (MFC), 10 μ L of each well without visible growth were inoculated on Sabouraud agar; MIC and MFC values less than or equal to 1,000 μ g/mL were indicative of antifungal effect against *C. auris*. Thus, F4a showed antifungal effect for both isolates, with MIC and MFC values of 3.12 μ g/mL and 7.81 μ g/mL, respectively. Furthermore, F4a effect on mature biofilm was assessed by the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT) assay, with serial concentrations of F4A, ranging from 100 to 12.50 μ g/mL. A significant metabolic inhibition (90%) in the biofilms was observed for both isolates in concentrations of F4a greater than 50 μ g/mL. From 25 μ g/mL, the biofilm metabolic inhibition of *C. aureus* CBS 12766 decreased significantly to 35%; concentrations of F4A less than 12.5 μ g/mL showed insignificant antibiofilm activity on the isolates. The results indicate that F4a fraction exhibits antifungal potential and can be used as an alternative for the treatment of infections caused by *C. auris*.

Keywords: *Candida auris*; multiresistance; antifungals; *Pseudomonas aeruginosa*; F4a.

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