Evaluation of the antifungal activity and antibiofilm of the essential oil of Ocimum canum (Alfavaca) in Candida spp.

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Abstract
Essential oils from plants of the genus Ocimum have demonstrated potential for anti-Candida action, as described in the literature. The objective of the present project was to evaluate the antifungal activity against Candida spp. and the antibiofilm effect of C. albicans of O. canum essential oil. The essential oil showed antifungal activity between 0.0062 to 1 mg / mL and effect on metabolic activity of the biofilm by up to 50% at concentrations of 16-1 mg / mL. The essential oil demonstrates antifungal activity against Candida spp. and decreases the metabolic activity of C. albicans when in biofilm in formation and mature.

Key words:
Candida spp., Ocimum spp., Medicinal plants.

Introduction
Candida spp. fungi, related to infections associated with immunosuppressed patients, have demonstrated an increasing acquisition of resistance to the antifungal drugs available for the control of these microorganisms, which has led the researchers of this area to look for new alternatives of drugs that have an action against these organisms. In this context, essential oils extracted from plants of the genus Ocimum have demonstrated the potential of antimicrobial action, especially antifungal activity, against fungi of the species Candida, as described by several authors in the scientific literature. Therefore, the present project aimed to evaluate the antifungal activity against Candida spp. and the biological effect of the essential oil on biofilm formation by Candida albicans (SC 5314).

Results and Discussion
The antimicrobial effect was evaluated by the broth microdilution assay against 16 strains of Candida spp. (CSLI, M27-A3, 2008). The biological effect of the essential oil on the biofilm was evaluated in the biofilm in formation and mature. From an overnight culture, the inoculum was adjusted to 1x10⁶ cells/mL and both were pre-incubated, being a pre-incubation of 2h (biofilm formation) and another of 24h (mature biofilm) respectively. After this period both biofilms were treated and incubated for 24h. The biofilms were quantified after 2h exposure of 80μl of XTT and read in a microplate spectrophotometer at 490nm.

The essential oil of Ocimum canum showed antifungal activity between 0.0062 - 1 mg/mL. The lowest concentration found was for C. utilis.

The oil showed an effect on the decrease of the metabolic activity of C. albicans in biofilm formation and mature biofilm in 50% between concentrations of 16-1 mg/mL.

Conclusions
The essential oil of Ocimum canum demonstrates antifungal activity against Candida spp. and decreases the metabolic activity of C. albicans when in biofilm.

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