Title: **FUNGISTATIC AND FUNGICIDAL ACTIVITY OF CHALCONES AGAINST CLINICAL ISOLATES OF *Candida albicans***

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Summary:

Chalcones are α,β-unsaturated carbonyl, and their derivatives can be synthesized by Claisen-Schmidt condensation between acetophenones and aromatics benzaldehyde. The Chalcones backbone have been associated to pharmacologic activities as antitumoral, antiviral, anti-inflammatory and antimicrobial. Vulvovaginal candidiasis (VVC) is a disease caused by yeasts of the *Candida* genus, which affects 75% of all women. Therefore, it is interesting to evaluate the action of chalcones to treat fungal infections such as vulvovaginal candidiasis (VVC), mainly because usual antifungal agents have shown inefficiency due to reduction of the sensitivity of Candida species. Thus, the aim of this study was to evaluate the antifungal potential of sixteen chalcones against five samples of *C. albicans* isolated from patients with VVC. The determination of the Minimum Inhibitory Concentration (MIC) was reached by broth microdilution method, and the evaluation of Minimum Fungicidal Concentration (MFC) by agar microdilution. The chalcones was tested in concentrations ranging from 1000µg/ml to 3.9µg/ml. The antifungal Ketoconazole and Dimethylsulfoxide (diluent) were included in the assays as positive and negative controls, respectively. The compounds LZ46 and MCF4 were the most active against clinical isolates, and LZ46 presented promising fungistatic and fungicidal activity with MIC value equal to 31.25µg/ml and MFC values ranging from 62.5 to 250µg/ml. This compound has shown great potential as antifungal agent with fungistatic and fungicidal activity against all tested microorganisms. The compound MCF4 showed fungistatic activity with MICs ranging from 125µg/ml to 500µg/ml. As a conclusion, these results indicate that these compounds have the potential to be inserted into a group of novel drugs to treat fungal infections.

Keywords: Clinical isolates, *Candida*, chalcones.

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