

**TITLE:** ANTI-*Candida* spp. ACTIVITY OF 2-OXO-2-PHENYLETHYL BENZOATE (BC-1).

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**ABSTRACT:** Amongst the pathogenic fungi, *Candida* spp. yeasts represent the most common agents in invasive fungal infections. The incidence of such infections has increased over the decades, bearing high mortality rates with frequent therapeutical failure, posing a serious threat to public health worldwide. In this manner, constant research is required in order to discover and develop new antifungal agents with greater efficacy and lower toxicity. Thus, this study aimed to evaluate the biological activity of the synthetic product 2-oxo-2-phenylethyl benzoate (BC-1) against eight *Candida* strains of different species (*Candida albicans* ATCC-76645, *C. albicans* LM-111, *C. albicans* LM-122, *C. tropicalis* ATCC-13803, *C. tropicalis* LM-04, *C. tropicalis* LM-06, *C. krusei* LM-656 and *C. krusei* LM-13). The antifungal activity was assessed through Minimum Inhibitory Concentration (MIC) via broth microdilution technique. Initially, RPMI-1640 broth was poured in the wells of a 96-well microplate. Then, the substance was added and serially diluted, yielding concentrations from 1024 µg/mL to 16 µg/mL. Finally, the inoculum from fungal suspensions prepared according to the McFarland 0,5 standard (10<sup>6</sup> CFU/mL) was added. Amphotericin B (32 µg/mL) was employed as positive control while the broth containing only the fungal inoculum was the negative control. The experiment was performed in duplicate and the MIC was expressed as the arithmetic mean of the results. The MIC of the substance was classified according to the following criteria: MIC<500 µg/mL, strong antimicrobial activity; 600<MIC<1500 µg/mL, moderate antimicrobial activity; MIC>1500 µg/mL, weak antimicrobial activity or inactive product. The results showed that the BC-1 displayed MIC of 1024 µg/mL against the strains *C. albicans* LM-111, *C. albicans* LM-122, *C. tropicalis* ATCC-13803, *C. tropicalis* LM-04 and *C. tropicalis* LM-06. Since the substance exhibited a MIC between 600 and 1500 µg/mL, the BC-1 can be considered as a product with moderate antimicrobial activity. Hence, the BC-1 presents a promising future as a bioactive molecule to be further studied in order to obtain improved antifungal agents through chemical modifications or to be used in association with other antifungal drugs.

**Keywords:** Antifungal activity, BC-1, *Candida* spp., invasive fungal infections, synthetic products.

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