

**TITLE:** REDUCTION OF *Candida tropicalis* VIABILITY AFTER EXPOSITION TO LMM11 COMPOUND

**AUTHORS:** MELO, R.C.; FARIA, D.R.; GALINARI, C.B.; ARITA, G.S.; SAKITA, K.M.; RODRIGUES, F.A.V.; CONRADO, P. C. V.; CAPOCI, I.R.G.; BONFIM-MENDONÇA, P.S.; KIOSHIMA, E.S.

**INSTITUTION:** UNIVERSIDADE ESTADUAL DE MARINGÁ (AVENIDA COLOMBO, 5790, BLOCO T20, 2º ANDAR, CEP 87020-900, MARINGÁ-PR, BRAZIL).

**ABSTRACT:**

*Candida tropicalis* is considered a opportunistic fungal that has caused great concern in the hospital environment, especially in the Intensive Care Units (ICU), in which patients with diseases immunosuppressives, such as blood neoplasia and AIDS, are susceptible to infections caused by this pathogen. Besides that, the *C. tropicalis* resistance to conventional antifungals such as the azoles, echinocandins and amphotericin B, evidence of the need of new drugs development. Previous studies in our laboratory identified by molecular modeling and virtual screening, a compound (LMM11) that inhibit thioredoxin reductase (TRR1) from *Candida albicans*, which may be candidates for the new drugs antifungals development.. In this sense, the aim of this work was to evaluate the possible antifungal action of LMM11 against *Candida tropicalis*. The LMM11 antifungal activity was evaluated by quantitative reduction of the *C. tropicalis* ATCC 750 (American Type Culture Collection) cell viability, after exposure to compound for 24 hours. The assay was performed by broth microdilution method carried out as proposed by the document *Clinical and Laboratory Standards Institute* (M27-A3) with some modifications. Ten concentrations of compound were used, ranging from 256 to 0.5 µg/mL. After incubation, were collected aliquots of the concentrations which were later diluted in Phosphate Buffered Saline (PBS), plated on Sabouraud Dextrose Agar (SDA) and submitted at incubation at 35°C for 24h, for determination of Colony Forming Units (CFUs). The results revealed a significant CFU's reduction from 32µg/mL concentration after 24 h incubation with LMM11 in relation to control ( $p<0.05$ ). In the two highest concentrations tested, the reduction was ~4 log and a dose-dependent effect was observed. LMM11 exerted promising antifungal effects. Our findings may contribute to the new treatment options development for *Candida* infections, with focus on the *C. tropicalis* treatment .

**Keywords:** *Candida tropicalis*; LMM11 compound; Antifungal activity