TITLE: ANTIFUNGAL EFFECT OF A CURCUMIN ANALOG AGAINST *TRICHOPHYTON MENTAGROPHYTES* AND *EPIDERMOPHYTON FLOCCOSUM* CLINICAL ISOLATES

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ABSTRACT:
Dermatomycoses are fungal infections that affect the outer layer of the stratum corneum of the skin and its attachments. They are the most numerous and widespread group of all mycoses, affecting all age groups. At this point, the arsenal of antifungal agents is extremely limited and many drugs exhibit high toxicity, drug interactions and a high economic cost. This scenario lead us to research innovative antifungals for treatment of fungal infections. The present study aimed to evaluate the antifungal activity of a curcumin-based compound against clinical strains of *Trichophyton mentagrophytes* and *Epidermophyton floccosum* isolated from dermatomycoses. For this study, the curcumin analogue was obtained from the Laboratory of Antibiotics and Chemotherapeutics – LAQ, of the Institute of Biosciences, Letters and Exact Sciences (IBILCE, Unesp São José do Rio Preto). The curcuminoid used is an analogue direct from curcumin structure with some substitutions. The clinical strains were from the culture collection of the Laboratory of Microbiology of the Medical School in São José do Rio Preto (FAMERP), Brazil. Susceptibility tests were performed for two dermatophytes strains: *Trichophyton mentagrophytes* and *Epidermophyton floccosum*, using the Clinical and Laboratory Standards Institute M38-A2 guidelines as reference. Percentage of inhibition was calculated by spectrophotometry using the : I = 1 - (AbsT-AbsCT / AbsCC) × 100; where: I = percentage of inhibition; AbsT = absorbance of the inoculum plus the compound solution; AbsCT absorbance of sterility control; AbsCC = absorbance of growth control. The curcumin (Merck®) was used as a control. The minimum inhibitory concentration (MIC) obtained for the curcuminoid against *T. mentagrophytes* and *Epidermophyton floccosum* strains was 31, 25 µg/mL, inhibiting 50% the growth of the strains. On the other hand, curcumin(Merck®) exhibited no activity at the concentrations tested. Regarding the analysis, the curcuminoid showed potent antifungal activity against the *T. mentagrophytes* and *Epidermophyton floccosum* clinical isolates, showing a potential alternative against dermatophytes species. In the future, toxicity tests will be performed allowing new therapeutic approaches in the treatment of dermatomycoses.

Keywords: curcumin, dermatophytes, antifungal, dermatomycoses

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