

Title: EVALUATION OF PRODUCTION OF BIOFILM BY CANDIDA SPP. ISOLATED FROM DERMATOMYCOSES

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Abstract:

Dermatomycoses are superficial fungal infections of the skin, hair and nails. These mycoses can be caused by several species of fungi including filamentous fungi and yeasts. Among the yeasts, the main etiological agents are from the genus *Candida*. *Candida albicans* has been the most common cause of fungal infection however, many non-*albicans* *Candida* species have recently emerged as important pathogens. All these yeasts can produce many virulence factors that contribute to their pathogenicity. One of the most important virulence factors of *Candida* is its ability to form communities of microorganisms embedded within an extracellular matrix called biofilms. *Candida* can form biofilms on natural host surfaces or on biomaterials used in indwelling medical devices and they confer significant tolerance to antifungals. Many studies have investigated the production of biofilms in systemic candidiasis but little is known about these virulence factors in dermatomycoses caused by *Candida*. So, the aim of this study was to evaluate the *in vitro* production of biofilms of 93 *Candida* species isolated from dermatomycoses in Uberaba-MG. These samples included 44 *C. parapsilosis*, 23 *C. guilliermondii*, 15 *C. tropicalis*, 9 *C. albicans*, 1 *C. krusei* and 1 *C. rugosa*. The production of biofilms was analyzed in flat-bottomed 96-well microtiter plate and each sample was inoculated in replicate in eight wells. The biofilm formation was measured by the XTT reduction assay and it was measured as optical densities (OD) higher than 0.200. Test medium without cells was added as a negative control. Of all *Candida* species evaluated, 65 (69,9%) were able to produce biofilms in which 33 were *C. parapsilosis*, 12 *C. guilliermondii*, 11 *C. tropicalis*, 7 *C. albicans*, 1 *C. krusei* and 1 *C. rugosa*. While the highest mean OD value was observed for *C. guilliermondii* (0,377), *C. tropicalis* showed the lowest mean OD (0,339). Although all *Candida* species were able to produce biofilms our results did not show relationship between the clinical origin of the isolates and their ability to produce biofilms. Our results show that *Candida* species isolated from dermatomycoses are able to form biofilms though more research is needed to improve our understanding of these etiological agents.

Keywords: biofilms, *Candida* spp., dermatomycoses,

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