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Biofilm formation ability by non-*Candida albicans* Candida species

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The number of infections caused by *Candida* species has greatly increased in the past ten years. This has been attributed to associated increases in the number of AIDS patients, the increasingly elderly population and the number of immunocompromised patients. Moreover, the increased use of indwelling medical devices has also been implicated with the rise of candidal infections. Most candidoses have been attributed to *Candida albicans*, however, recently, new non-*Candida albicans* Candida (NCAC) species have been identified as common pathogens, namely *C. parapsilosis*, *C. glabrata*, *C. tropicalis*, *C. krusei* and *C. dubliniensis*. Biofilms are the most frequent form of environmental microbial growth and play an important role in clinical infections. Of significance is that biofilms tend to resist removal by host factors and administered antimicrobials and therefore represent a persistent source of infectious organisms. The aim of this study was to assess the ability of NCAC species to produce biofilms. A total of 16 NCAC strains isolated from the vagina, urinary and oral tract were used, including *C. parapsilosis* (n=6), *C. glabrata* (n=6) and *C. tropicalis* (n=4). Reference strains of each species (*C. glabrata* IGG 2418, *C. tropicalis* IGC 3097T/CBS94 and *C. parapsilosis* 37) were similarly examined. Biofilms were formed in 96-well microtitre plates, in Sabouraud dextrose broth at 37°C (agitated at 130 rpm). The ability of biofilm formation was assessed after 48h through total biomass quantification by crystal violet staining and cellular activity by the reduction of a tetrazolium salt (XTT). The results showed that most NCAC species were able to form biofilms, although there were differences depending on species, strain or isolate origin. Comparison of biofilm biomass with cell activity did not reveal any correlation, probably due to different amounts of extracellular matrix produced by each strain.