



## Insights on Non-*Candida albicans* *Candida* species virulence factors

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Non-*Candida albicans* *Candida* (NCAC) species such as *Candida tropicalis*, *Candida parapsilosis* and *Candida glabrata* are responsible for 50 % of candidoses. It is important to highlight that candidose can be a superficial infection or a serious condition (e.g. systemic), which can lead to high morbidity and mortality. NCAC species virulence factors include: adhesion, biofilm formation and enzymes production. Therefore, our group focused its research on NCAC species virulence factors.

In the presence of urine NCAC species are able to colonize silicone (material commonly used on hospital catheters), with *C. parapsilosis* showing the lowest and *C. glabrata* the highest levels of adhesion. Biofilm formation studies demonstrated that NCAC species were able to form biofilm, although these were less extensive for *C. glabrata*. *C. glabrata* biofilm matrices' had high protein and carbohydrate, while *C. tropicalis* had low amounts of both components; but *C. parapsilosis* had high amount of carbohydrates and low protein.

The pathogenicity of NCAC species was evaluated by infecting human epithelium. *C. glabrata* adhered in higher extent but their influence on cell activity was less significant when comparing to other NCAC species. Moreover, *C. parapsilosis* revealed low invasiveness compared with *C. tropicalis* but both presented extensive damage after 24 h. RT-PCR results suggested that secreted aspartyl proteinases were not involved on the invasion by *C. tropicalis* and *C. parapsilosis*, but indicated the role of these enzymes in tissue damage caused by *C. parapsilosis*.

The research performed by our group is a step forward on the development of new therapeutic approaches.