

The role of glucose in biofilm formation by species of *Candida albicans* and *Candida parapsilosis* (Poster 18)

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Oral candidoses is an opportunistic mycosis related with various *Candida* species, being *Candida albicans* and *Candida parapsilosis* the most relevant pathogens. Poor oral hygiene and insufficient salivary flow represent some factors that can lead to infection. Moreover, in the oral environment, the glucose concentration varies widely between residual values and high concentrations. Biofilm formation is a virulence factors that contribute to the *Candida* pathogenicity. The purpose of this study was to understand the role of glucose in biofilm formation by *C. albicans* and *C. parapsilosis*. Thus, *in vitro* biofilms of *C. albicans* and *C. parapsilosis* were performed in RPMI, supplemented with 2%, 12% and 22% glucose. The biofilms were analyzed by CV staining and the cell number determined by CFUs counts. Simultaneously, expression of genes described as important in biofilm formation, (*BCR1* and *FSK1*) was determined by qRT-PCR for biofilm and planktonic cells.

The results showed a direct correlation between the values of glucose and the amount of biofilm, despite between 12% and 22% no statistically differences were observed. qRT-PCR studies revealed an increased the approximately 10 times in *BCR1* expression for *C. albicans* and *C. parapsilosis* biofilm cells in 12% comparatively to 2% of glucose. Concerning *FSK1* no statistically differences were observed.

Concluding, this work shows that biofilm production is dependent of glucose presence in oral environment and that the expression of *BCR1* has an important role on *C. albicans* and *C. parapsilosis* biofilm formation. Moreover, *FSK1* seems not to be directly implicated on biofilm formation, specifically in *C. parapsilosis*.