

Title: SAP2 EXPRESSION IN STANDARD STRAINS OF *Candida albicans* MAINTAINED UNDER STRESS CONDITIONS

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Abstract:

Candida species frequently act as commensal in healthy individuals, however, in response to defined stimuli they can become pathogenic and cause infections superficial or systemic. The understanding of mechanisms associated to virulence of *Candida* spp. it is necessary to establish strategies of control and prevention and also allow the research and developing of new drugs. The production and secretion of aspartic proteases (Sap) by *Candida* spp. is considered one of the main factors associated to virulence of these species, once they can contribute to adhesion, invasion of tissues and evasion of the host immune system. The SAP genes expression is differentially regulated according to several factors that are related to intrinsic and extrinsic characteristics of the yeast. This study aimed to investigate the SAP2 expression by standard strains of *Candida albicans*, ATCC 10231 and ATCC 64548, in different conditions of stress. The strains were cultured, in planktonic phase, in three different values of pH and in the presence and absence of subinhibitory concentrations of fluconazole and amphotericin B. All samples were submitted to the extraction of total RNA with TRIzol[®] reagent and the purification of the same was made by treatment with DNase. From the product of purification the SAP2 expression was investigated using Real-Time PCR and the ACT1 gene was evaluated to be used as normalizing gene. The variation in the SAP2 expression was small in the tested exposure conditions, especially in *C. albicans* ATCC 10231, however, both strains presented greater expression of SAP2 when they were cultivated in pH 7.4. It can be said that the presence of subinhibitory concentrations of fluconazole during cultivation was determinant condition in the increase of SAP2 expression in both strains of *C. albicans*. In general, it was possible to know and compare the expression profile of SAP2 of standard strains of *C. albicans* and to evaluate the effect of stress conditions in the expression of these genes associated to virulence of the yeast.

Keywords: SAP2 expression, *Candida albicans*, stress conditions

Funding Agency: FAPEMIG and CNPq