Aspartic Protease Secreted By The Opportunistic Fungus *Trichosporon asahii*

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**Introduction.** The genus *Trichosporon* is characterized by the ability to form blastoconidia, true mycelia and arthroconidia, which are asexual propagules that disarticulate from true hyphae. *Trichosporon* is an important genus whose members are able to colonize and proliferate in different parts of human body, including the gastrointestinal system, respiratory tract, skin and vagina. This yeast-like pathogen may cause deep-seated, mucosa-associated, or superficial infections. Invasive trichosporonosis is documented mostly in patients with hematological malignancies and other medical conditions associated with immunosuppression, whereas superficial infections and allergic pneumonia are found predominantly in immunocompetent hosts. Material and Methods/Results and Discussion. Over the past years, our research group has devoted continuous efforts in order to characterize molecules associated with growth, differentiation or microbial pathogenicity in several models. Given the low efficacy of available drugs for the treatment of systemic mycoses, our research group is studying the occurrence of new tools applicable in antifungal therapy, with emphasis on proteases. In the present work, we have showed that *Trichosporon asahii* cells secrete a proteolytic enzyme of 40 kDa into the extracellular environment able to cleave albumin as the sole nitrogen source in both solid and liquid culture medium. Using albumin-SDS-PAGE, we demonstrated that this proteolytic activity was detected only in acidic condition (pH 4.0), at 37°C and fully inhibited by pepstatin A at 10 µM. The enzymatic activity was tested over distinct fluorogenic peptides and monitored in a spectrofluorometer. Ours results demonstrated that the aspartic protease secreted by *T. asahii* efficiently cleaved the cathepsin D substrate. Conclusions. Little is known about the virulence factors expressed by *T. asahii*. However, several studies demonstrate the direct involvement of aspartic-type proteases in the broad context of fungus-host relationship.

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