

Chemical and functional characterization of glycoconjugates isolated from clinical and environmental strains of *Scedosporium. aurantiacum*

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Scedosporium aurantiacum belongs to the *Pseudallescheria/Scedosporium* complex. Within this complex *S. aurantiacum* has emerged as more virulent and largely resistant to antifungal agents (LACKNER *et al.*, 2012). A few environmental strains have been isolated (HARUN *et al.*, 2009). Its occurrence in clinical samples seems to be high since a study of a set of 66 clinical Australian strains previously identified as *Scedosporium aurantiacum*, approximately half of them were found to be *S. aurantiacum*. In immunocompetent host they cause white-grain mycetoma and lung infections in near-drowning syndromes. In addition they can colonize the airways of patients with underlying lung disease, notably in 0,7-9% of cystic fibrosis patients. Furthermore, they can cause life-threatening disseminated infections in

immunocompromised patients, such as solid organ or bone-marrow transplant recipients , as well as in patients with hematological malignancies or AIDS.

In this sense, the study of glycoconjugates of the fungal cell wall can be interesting because this structure is unusual in mammalian cells (CALIXTO *et al.*, 2015). Therefore it can be an attractive target to antifungal drugs. In addition, this structure is involved in crucial steps of the fungal infection and pathogenesis.

The aim this work was to extract and characterize chemically glycoconjugates present on the cell wall of four strains of clinical and environmental origin from different geographical regions.

We also analyze the possible biofilm formation by these strains of *S. aurantiacum* and the effective participation of the melanin in the pathogenesis of this fungus, by using tricyclazole, an inhibitor of melanin synthesis.

Our results showed slight differences in chemical structure of the glycoconjugates of the four strains of *S. aurantiacum*, which make them attractive targets for the diagnosis. The ability to form biofilms can be one of the reasons for the high resistance to antifungal agents by *S. aurantiacum*. In addition, we showed that the presence of melanin covering the surface of the conidia could be possibly an escape mechanism of the fungus from the host immune system. Additional studies are being carried out in order to confirm these findings

References:

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