



INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

## **VIRULENCE OF F.MONOPHORA MELANIN AND PATHOGENICITY ON CHROMOBLASTOMYCOSIS**

*Liyan Xi<sup>(1)</sup> - Jiufeng Sun<sup>(2)</sup> - Junmin Zhang<sup>(3)</sup> - Xiqing Li<sup>(2)</sup> - Min Jiang<sup>(2)</sup> - Li Wang<sup>(2)</sup>*

*Sun Yat-sen University, Dermatology Department, Sun Yat-sen Memorial Hospital,, Guangzhou, China<sup>(1)</sup> - Sun Yat-sen University, Dermatology Department, Sun Yat-sen Memorial Hospital, Guangzhou, China<sup>(2)</sup> - Sun Yat-sen University, Dermatology Department, Sun Yat-sen Memorial Hospital,, Guangzhou, China<sup>(3)</sup>*

**Background:** Chromoblastomycosis is one of the most frequently encountered subcutaneous mycoses in Southern China caused by the implantation of dematiaceous fungi. As one of these fungi, *Fonsecaea monophora* [?] *F. monophora* [?] was found to be the predominant causative agents of this disease. Several potential virulence factors are probably involved in it, including modifications of the cell surface, hydrophobicity, remodeling of the fungal cell wall, secretion of proteolytic and hydrolytic enzymes, adhesion molecules, incorporation of aromatic hydrocarbons and especially the presence of melanin. We have focused on the study of the virulence of cell wall melanin from a clinical albino mutant of *F.monophora* and hope to further understand melanin virulence of *F. monophora*.

**Methods:** Our series researches began from one albino mutant (CBS 125149) generated from a parent meristematic mutant (CBS 122845, isolated from a patient with chromoblastomycosis) of *F. monophora*. The melanin of cell wall fractions from the two different strains were extracted by an alkali-acid method and examined melanin located position by TEM. The tolerance to stress factors including high UV radiation, oxidation, extreme temperature, pH, antifungal susceptibility, and Th1/ Th2 response occurred in the interaction between activated RAW264.7, the pathogenesis in a BALB/c mice infection model were also investigated.

**Results:** The albino mutant showed less tolerance to stress factors, while melanization inhibits nitric oxide, Th1 cytokines, exacerbated Th2 response, accelerates the persistence of the fungus infection. Melanization could increase the pathogenesis in vivo animal infection model.

**Conclusion:** The melanin, as an important virulence factor, is the key factor for *F. monophora* to escape the host immune system at the initial recognition and persistence in BALB/c mice.

