THE IN VITRO ANALYSIS OF iNOS-KO MOUSE MACROPHAGES INFECTED WITH *PURPUREOCILLIUM LILACINUM* CAUSAL AGENT OF HIALOHIFOMYCOSIS

PONTE, CARLOS[1,3]; LIMA, JESSICA[1]; PEDRO, THAIZE[1]; OLIVEIRA, ALANA[1] ,DE-LUCA, PAULA[2]; BORBA, CINTIA[3]; ANTAS, PAULO[1]
[1]Laboratório de Imunologia Clínica, [2]Laboratório de Imunoparasitologia, e [3]Laboratório de Taxonomia, Bioquímica e Bioprospecção de Fungos, Instituto Oswaldo Cruz, FIOCRUZ, Rio de Janeiro.

Introduction: *Purpureocillium lilacinum* is currently recognized as an emerging opportunistic fungus, causing the hialohifomycosis infection in adults and children, mostly in immunosuppressed ones. Habitually, the disease presents itself in a nodular subcutaneous form, both in immunocompetent and immunosuppressed individuals. Virtually no data is available regarding immune mechanisms related to host-pathogen interaction. **Methods and Results:** In this study, we have used 3 distinct isolates of *P. lilacinum* obtained from human clinical cases, and in vitro challenged transgenic mouse macrophages, which are believed to be the first host cells to interact with this pathogen. Conidia of *P. lilacinum* were purified and peritoneal macrophages from iNOS KO mouse were infected at different time-points and at a ratio of 2:1. After infection, host cells were stained with "Wright-Giemsa" (light optical microscopy) and with surface markers (flow cytometry). Furthermore, supernatants were harvested for IFN-α ELISA and MMP-9 zimography. After 12 hours of incubation, germ tubes were produced, suggesting active metabolism by the fungus, as well as development of branched septate hyphae inside macrophages. Ultimately at 24 hours, the macrophages were completely destroyed. Dissimilar data were found among the 3 strains used through. High levels of double expression of CD18/CD38 were observed, but the MMP-9 and IFN-α levels were equally produced, disregard fungus infection. **Conclusion:** *P. lilacinum* was able to infect and destroy iNOS KO mouse macrophages in a time-dependent manner. Similarly, host cells were promptly activated, but failed to release soluble mediators. In addition, parallel studies in wild-type mouse macrophages also found a microscopically related pattern. Work in progress intent to correlate these data with in vivo *P. lilacinum* infection in order to ascertain relevant immunological parameters.
Financial support: Fiocruz; Faperj; CNPq