TITLE: PROTECTION AGAINST *PARACOCCIDIOIDES BRASILIENSIS* INFECTION IN MICE IMMUNIZED WITH RECOMBINANT PBSAP

AUTORS: CASTILHO, D. G.[1]; CHAVES, A. F. A.[1], NAVARRO M. V.[1]; CALADO, J. C. P.[1], CONCEIÇÃO, P. M.[2], XANDER, P.[2]; BATISTA, W. L.[1,2]

INSTITUTION: 1. Departamento de Microbiologia, Imunologia e Parasitologia/UNIFESP-São Paulo, Brasil; 2. Departamento de Ciências Biológicas/UNIFESP-Diadema, Brasil**.**

ABSTRACT

Paracoccidioidomycosis (PCM) is the most prevalent deep mycosis in Latin America and is caused by fungi of the *Paracoccidioides* genus. The infection begins after inhalation of the fungal propagules and their thermo-dimorphic shift to yeast form. The development of the disease depends on factors associated with the host immune response and the infectious agent characteristics, especially virulence. Secreted aspartyl proteases (Sap) are virulence regulators in others pathogenic fungi and play an important role in the host invasion process. The present work aimed to investigate the potential of recombinant PbSap (rPbSap) immunization to reduce the infection in mice. Initially the cDNA of PbSAP was cloned, the recombinant protein expressed, purified and its protective activity was determined against experimental PCM. The cDNA sequence contained 1,203 base pairs encoding a protein of 401 amino acids with a predicted molecular weight of 44 kDa. The cDNA was cloned into pET28a(+) expression vector, expressed in *Escherichia coli* as His-tagged recombinant protein and the anti-SAP antibody was produced. We showed that positive PCM sera recognized rPbSap in immunoblot. Immunization using rPbSap before *P. brasiliensis* mice infection reduced colony-forming units (CFU) in the lungs as compared with controls. Histopathology showed smaller inflammation, absence of yeast cells and no granuloma formation. The cytokines profile were different in immunized group, as compared with control. Finally, our data indicate that rPbSap promoted acquired protection against infection with *P. brasiliensis* yeast and PbSap may be required by *P. brasiliensis* virulence.

Keywords: Aspartyl proteases; Paracoccidioides brasiliensis; Immunization; Virulence regulator

Development Agencies: FAPESP, CAPES e CnpQ