

TITLE: EVALUATION AND CHARACTERIZATION OF THE ADHESION AND BIOFILM FORMATION CAPACITY BY *Fusarium solani*

AUTHORS: KISCHKEL, B.; JARROS, I. C.; VEIGA, F. F.; SVIDZINSKI, T.I.E.; NEGRI, M.

INSTITUTION: DEPARTMENT OF CLINICAL ANALYSIS, LABORATORY OF MEDICAL MYCOLOGY, STATE UNIVERSITY OF MARINGÁ (AVENIDA COLOMBO, 5790, BLOCO T20, CEP 87020-900, MARINGÁ, PR, BRAZIL.

ABSTRACT :

A biofilm is a community of microorganisms adhered to a surface and surrounded by an exopolymeric substance. In the last years the research in mycology has seen a paradigm, the emergence increasingly frequent of fungi of medical importance surviving in a host through of biofilm communities. Several studies have already identified the formation of yeast biofilms in mucosa of patients and biomaterials such as dentures and catheters. This study objective the evaluation of the adhesion and biofilm formation capacity and biochemistry characterization of biofilm biomass formed by *Fusarium solani* ATCC 36031, a fungus of clinical interest causer onychomycosis. Spores of the isolate were harvested from 7 days aged pure culture in tube with inclined PDA agar, adding PBS. The inoculum was adjusted to 1×10^6 conidia/mL in RPMI and transferred to a 24 well plate. For adhesion, the microtiter plates were incubated for 2h at 35°C with shaking at 120 rpm. For biofilm formation, the microtiter plates were incubated under the same conditions, but for a period of 24 hours. Then, the wells were scraped and washed with 1mL of PBS. The suspension was sonicated quantification of protein, polysaccharides, DNA and RNA of biofilm biomass by reading in Scandrop and 20µl were plated in PDA agar and incubated for 48 hours at 27°C for determination of Colony forming units/mL (CFU) The CFU assay presented greater adhesion by the fungus in microtiter plates, being 5,3 log CFU/mL, while the biofilm formation presented approximately 5 log CFU/mL. The quantification of protein and polysaccharides, DNA and RNA of biofilm biomass were 0,35 mg/mL; 39 ng/µl; 27 ng/µl, respectively. Through of obtained results was possible verify that *Fusarium solani* is able to adhere and biofilm form, being an important means of survival in the environment, stress situations and in a host causing an infection.

Keywords: Biofilm, Fusarium, Adhesion.

Development Agency: CNPq.