Investigation of *Aspergillus fumigatus* biofilm formation by various.

Muszkieta L, Beauvais A, Pähtz V, Gibbons JG, Anton Leberre V, Beau R, Shibuya K, Rokas A, Francois JM, Kniemeyer O, Brakhage AA, Latgé JP (2013) Investigation of *Aspergillus fumigatus* biofilm formation by various. *Front Microbiol* 4, 13.

Details

PubMed

Abstract

In the lung, Aspergillus fumigatus usually forms a dense colony of filaments embedded in a polymeric extracellular matrix called biofilm (BF). This extracellular matrix embeds and glues hyphae together and protects the fungus from an outside hostile environment. This extracellular matrix is absent in fungal colonies grown under classical liquid shake conditions (PL), which were historically used to understand A. fumigatus pathobiology. Recent works have shown that the fungus in this aerial grown BF-like state exhibits reduced susceptibility to antifungal drugs and undergoes major metabolic changes that are thought to be associated to virulence. These differences in pathological and physiological characteristics between BF and liquid shake conditions suggest that the PL condition is a poor in vitro disease model. In the laboratory, A. fumigatus mycelium embedded by the extracellular matrix can be produced in vitro in aerial condition using an agar-based medium. To provide a global and accurate understanding of A. fumigatus in vitro BF growth, we utilized microarray, RNA-sequencing, and proteomic analysis to compare the global gene and protein expression profiles of A. fumigatus grown under BF and PL

conditions. In this review, we will present the different signatures obtained with these three

Involved units

Molecular and Applied Microbiology Axel Brakhage Read more

Leibniz-HKI-Authors



Axel A. Brakhage

Details



Olaf Kniemeyer

Details



Vera Voltersen

Details

Identifier

doi: 10.3389/fmicb.2013.00013

PMID: 23407341