Host-pathogen interactions and virulence-associated genes during *Candida albicans* oral infections.

Martin R, Wächtler B, Schaller M, Wilson D, Hube B (2011) Host-pathogen interactions and virulence-associated genes during *Candida albicans* oral infections. *Int J Med Microbiol* 301(5), 417-422. (Review)

Abstract

Oral infections with Candida albicans are very common diseases in even only mildly immunocompromised patients. By using genome-wide microarrays, in vitro infection models and samples from patients with pseudomembranous candidiasis, several genes have been identified which encode known and unknown fungal factors associated with oral infection. The expression of selected genes has been investigated via qRT-PCR in both in vitro models and in vivo samples from patients. Several lines of evidence suggest that fungal morphology plays a key role in adhesion to and invasion into oral epithelial cells and mutants lacking regulators of hyphal formation are attenuated in their ability to invade and damage epithelial cells. Adhesion is mediated by hyphal-associated factors such as Hwp1 and the Als adhesin family. Hyphal formation facilitates epithelial invasion via two routes: active penetration and induced endocytosis. While induced endocytosis is predominantly mediated by the adhesin and invasin Als3, active penetration seems to be supported by hydrolase activity and mechanical pressure. Expression profiles reflect the morphological switch and an adaptive response to neutral pH, non-glucose

carbon sources, and nitrosative stress.

Involved units

Microbial Pathogenicity Mechanisms Bernhard Hube Read more

Fungal Septomics Oliver Kurzai Read more

Leibniz-HKI-Authors

Betty Hebecker

Details

Bernhard Hube

Details

Ronny Martin

Details

Duncan Wilson

Details

Topics

Damage to the host

Identifier

doi: 10.1016/j.ijmm.2011.04.009

PMID: 21555244