The *Candida albicans*-specific gene EED1 encodes a key regulator of hyphal extension.

Martin R, Moran GP, Jacobsen ID, Heyken A, Domey J, Sullivan DJ, Kurzai O, Hube B (2011) The *Candida albicans*-specific gene EED1 encodes a key regulator of hyphal extension. *PLOS One* 6(4), e18394.

Abstract

The extension of germ tubes into elongated hyphae by Candida albicans is essential for damage of host cells. The C. albicans-specific gene EED1 plays a crucial role in this extension and maintenance of filamentous growth. eed1Δ cells failed to extend germ tubes into long filaments and switched back to yeast growth after 3 h of incubation during growth on plastic surfaces. Expression of EED1 is regulated by the transcription factor Efg1 and ectopic overexpression of EED1 restored filamentation in efg1Δ. Transcriptional profiling of eed1Δ during infection of oral tissue revealed down-regulation of hyphal associated genes including UME6, encoding another key transcriptional factor. Ectopic overexpression of EED1 or UME6 rescued filamentation and damage potential in eed1Δ. Transcriptional profiling during overexpression of UME6 identified subsets of genes regulated by Eed1 or Ume6. These data suggest that Eed1 and Ume6 act in a pathway regulating maintenance of hyphal growth thereby repressing hyphal-to-yeast transition and permitting dissemination of C. albicans within epithelial tissues.

Involved units

Microbial Pathogenicity Mechanisms Bernhard Hube Read more

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Details

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Topics

Damage to the host

Awards

Selected by Faculty of 1000 as “recommended” Factor 6.0

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