Quorum sensing by farnesol revisited.


Abstract

Quorum sensing, a form of molecular communication in microbial communities, is relatively well studied in bacterial species, but poorly understood in fungi. Farnesol, a quorum sensing molecule secreted by the opportunistic human pathogenic fungus *Candida albicans*, was the first quorum sensing molecule described in a eukaryotic organism. However, despite considerable research efforts and advances in recent years, the mechanisms behind its action remain largely elusive. Only recently, we showed that deletion of the *C. albicans* gene EED1 (eed1Δ), which is essential for hyphal maintenance, resulted in both increased farnesol production and hypersensitivity to farnesol, providing a link between farnesol signaling and elongated hyphal growth. This finding raised several questions concerning farnesol signaling. In this short review we use the unique phenotype of the eed1Δ mutant to summarize current hypotheses and to speculate on possible mechanisms of quorum sensing in *C. albicans* and its implication in fungus-host interaction, by drawing comparisons to comparatively well-studied quorum sensing systems in bacteria.

Beteiligte Abteilungen und Gruppen

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HKI-Autoren

**Prof. Dr. Ilse Denise Jacobsen**  **Melanie Polke**

Themenfelder
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