

***Candida albicans* Mrv8, is involved in epithelial damage and biofilm formation.**

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Abstract

Candida albicans is the most common human fungal pathogen that can cause superficial and deep-seated infections in susceptible individuals. Despite its medical importance, the vast majority of *C. albicans* genes remain of unknown function. Here, we report a role for the lineage-specific gene, MRV8, in host pathogen interactions, mycelial microcolony maturation and biofilm formation. In silico analysis indicated that MRV8 encodes a four-pass transmembrane protein unique to the closely related pathogens *C. albicans* and *Candida dubliniensis*. Deletion of MRV8 did not affect *C. albicans* adherence to, or initial invasion into human oral epithelia, but inhibited mycelial development and strongly reduced epithelial damage. *mrv8* Δ/Δ cells exhibited a media-dependent defect in biofilm formation and mutant biofilm metabolic activity was enhanced by cyclosporin A. *mrv8* Δ/Δ biofilms were more tolerant to treatment with caspofungin, but not to fluconazole or amphotericin B. Co-stimulation with calcium chloride and calcofluor white rescued biofilm growth in

the presence of caspofungin, and this rescue-effect was Mrv8-dependent. Together, our data demonstrate an important role for a lineage-specific gene (MRV8) in *C. albicans* biofilm formation, drug tolerance and host-pathogen interactions.

Beteiligte Forschungseinheiten

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