



Capric acid secreted by *S. boulardii* inhibits *C. albicans* filamentous growth, adhesion and biofilm formation.

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Candidiasis are life-threatening systemic fungal diseases, especially of gastro intestinal track, skin and mucous membranes lining various body cavities like the nostrils, the mouth, the lips, the eyelids, the ears or the genital area. Due to increasing resistance of candidiasis to existing drugs, it is very important to look for new strategies helping the treatment of such fungal diseases. One promising strategy is the use of the probiotic microorganisms, which when administered in adequate amounts confer a health benefit. Such a probiotic microorganism is yeast *Saccharomyces boulardii*, a close relative of baker yeast. *Saccharomyces boulardii* cells and their extract affect the virulence factors of the important human fungal pathogen *C. albicans*, its hyphae formation, adhesion and biofilm development. Extract prepared from *S. boulardii* culture filtrate was fractionated and GC-MS analysis showed that the active fraction contained, apart from 2-phenylethanol, caproic, caprylic and capric acid whose presence was confirmed by ESI-MS analysis. Biological activity was tested on *C. albicans* using extract and pure identified compounds. Our study demonstrated that this probiotic yeast secretes into the medium active compounds reducing candidal virulence factors. The chief compound inhibiting filamentous *C. albicans* growth comparably to *S. boulardii* extract was capric acid, which is thus responsible for inhibition of hyphae formation. It also reduced candidal adhesion and biofilm formation, though three times less than the extract, which thus contains other factors suppressing *C. albicans* adherence. The expression profile of selected genes associated with *C. albicans* virulence by real-time PCR showed a reduced expression of *HWP1*, *INO1* and *CSH1* genes in *C. albicans* cells treated with capric acid and *S. boulardii* extract. Hence capric acid secreted by *S. boulardii* is responsible for inhibition of *C. albicans* filamentation and partially also adhesion and biofilm formation.

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