

Title Farnesol influence *Penicillium expansum* morphological change reveals a possible mechanism for antagonistic yeasts

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Abstract

It's an important feature that *Candida albicans* grow as hyphae, pseudohyphae or budding yeasts. Farnesol as a quorum-sensing (QS) molecule secreted by *C. albicans* prevents the yeast to mycelium conversion and causes the cultures to grow as actively budding yeasts, but it has no effect on cellular growth rates. A growth inhibitory effect was found in our study after the addition of exogenous farnesol to cultures of *Penicillium expansum*, which effect was reported also on *Aspergillus nidulans* and *Fusarium graminearum*. Meanwhile, the effect on the hyphal polarity was observed which indicated that farnesol induced morphological changes. Furthermore, colonies grown on media containing farnesol were unable to develop conidia. Farnesol isolated from yeast also inhibits mold growth, which contribute to the research on the mechanisms of antagonistic yeasts. Thus, farnesol as a QS molecule could be applied in bio-control.