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[P88]

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**UNRAVELLING THE ROLE OF *CANDIDA ALBICANS* SECRETED ALCOHOLS IN THE CROSS – TALK WITH *CANDIDA PARAPSILOSIS***

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The success of *Candida* species as pathogens is attributed to survival strategies such as the ability to form biofilms. In fact, *Candida albicans* and *Candida parapsilosis* are frequently isolated solely or

within mixed cultures from implanted devices and natural environments. Nevertheless, interactions between organisms, namely through signalling molecules, are not well understood.

One of the challenges in cell-cell signalling science is to distinguish the types of communication between cells depending on the consequences to the sender and the responder cell. This study aimed to contribute to the elucidation of the role of recently characterized *C. albicans* secreted alcohols in *C. parapsilosis* biofilms development.

*C. parapsilosis* ATCC 22019 biofilms were developed on the surface of microtiter plates. All experiments were performed in RPMI medium with cells grown at 37 °C, 130 rpm (initial cell density of  $1 \times 10^6$  cells/ml). Commercial formulations (pro-analysis) of *C. albicans* secreted alcohols were added after 3 h of adhesion or to 48 h grown biofilms. Isoamylalcohol, 2-phenylethanol, 1-dodecanol, nerolidol and farnesol were independently assayed at physiological levels, and endpoints were determined at the end of 24 h. Biofilms were analysed in terms of cellular activity, by the reduction of a tetrazolium salt (XTT), and total biomass by crystal violet staining.

Results indicated that, at initial biofilm stages, *C. parapsilosis* metabolic activity was significantly decreased by 2-phenylethanol, nerolidol and 1-dodecanol, while biofilm total biomass was not affected. At later stages of biofilm development, nerolidol induced significant reductions in biofilm cellular activity, while 1-dodecanol increased total biomass.

Overall, these results indicate that a group of *C. albicans* secreted alcohols reduce *C. parapsilosis* cellular specific activity (defined as biofilm cell activity/ biofilm biomass). This suggests that these molecules may coerce *C. parapsilosis* into a non beneficial situation, which might give competitive advantages to *C. albicans*.

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