



**P002**  
**Antifungal activity of antimicrobial synthetic peptides against *Candida* species of public health importance**

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Background: Candidiasis is one of the most frequent opportunistic infections in immunosuppressed and/or hospitalized patients. In countries like Colombia, candidiasis is associated with a mortality rate of ~ 46%. Growing pharmacological resistance of *Candida* spp., and the appearance of the emerging pathogen *Candida auris*, have turned candidiasis into a major

public health problem. Different types of antimicrobial peptides have been investigated as a therapeutic alternative to control candidiasis effectively and safely.

Objective: This work aimed at evaluating the *in vitro* antifungal activity of three synthetic antimicrobial peptides (35 409, 1609, and 29 009) obtained from *Plasmodium falciparum* Rf1 protein against *C. auris*, *C. albicans*, *C. glabrata*, *C. parapsilosis*, *C. krusei*, and *C. tropicalis*, species with worldwide clinical importance.

Methods: The minimum inhibitory concentrations (MIC) of the three peptides against *Candida* species were determined by the plate microdilution method; the peptides' effect on biofilm formation in *C. auris* and *C. albicans* species was also evaluated through the XTT metabolic activity assay. Additionally, the structural damages in *C. auris* and *C. albicans* caused by the action of the peptides were observed by transmission electron microscopy (TEM) and finally, the *in vitro* peptides' cytotoxicity against L929 murine fibroblasts was verified.

Results: Our findings showed that the three peptides herein evaluated, displayed antifungal activity in both planktonic and sessile *Candida* cells. Likewise, the TEM evidenced morphological alterations induced by the peptides, both in the membrane and at the intracellular level of the yeasts. As well, total safety against the murine cell line L929 with 24 h of treatment was observed.

Conclusions: From these results, we conclude that the antimicrobial peptides 35 409, 1609, and 29 009 are potential therapeutic alternatives against the most important *Candida* species in Colombia and the world.