Inhibition of Biofilm formation by gallic acid and akyl gallates in *Candida orthopsilosis* and *C. parapsilosis* stricto senso

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Biofilms contribute to the pathogenesis of many forms of *Candida* infection. Treatment of these infections is complicated by intrinsic resistance to conventional antifungal therapy, thus creating an urgent need for strategies that can be used for the prevention of biofilm-associated infections. In this study the anti-*Candida* biofilm formation activity of gallic acid (G1) and of the alkyl gallates [G2 (methyl gallate), G3 (ethyl gallate), G4 (n-propyl gallate), G5 (i-propyl gallate), G6 (n-butyl gallate), G7 (n-pentyl gallate), G8 (3,4,5-triacetoxybenzoic acid), G9 (i-butyl gallate), G10 (n-hexyl gallate), G11 (n-heptyl gallate), G12 (n-octyl gallate), G14 (n-decyll gallate), G15 (n-undecyl gallate), G16 (n-dodecyl gallate), G17 (n-tetradecyl gallate)] were investigated on *Candida orthopsilosis* and *C. parapsilosis* stricto senso strains. Biofilm formation was assessed with microscopic examination (IN Cell Analyzer 2000) and the metabolic activity was quantified by tetrazolium reduction assay (XTT). The compounds G9 to G17 were active at the lowest concentrations. G14, G15, and G16 show inhibitory effect against *C. parapsilosis* stricto senso at concentration of 1.95 µg/ml whereas against *C. orthopsilosis* these compounds prevented biofilm formation at concentrations of 7.81 and 15.6 to µg/ml. The compounds G1 to G8 against two *Candida* species were not active or poorly active at concentrations of 250 µg/ml. This study also emphasizes the potential of phytochemicals and their derivatives as emergent sources of biofilm prevent products. These compounds did not show cytotoxicity in the best antifungal activity concentrations by MTT cytotoxicity tests.

**Key words:** *Candida* spp, biofilm, antifungal activity.

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