Poster Session I: Polyphenols in other diseases

P800

Glycyrrhiza glabra L. as a promisor candidacidal in biofilms and planktonic cells: comparison between phenolic extract and isolated compounds

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Opportunistic fungal infections, particularly involving *Candida* species (candidiasis) have become a serious problem of public health. Current antifungal agents have been loosing the effectiveness, in part due to their overuse, and appearance of resistant *Candida* species. Plants have been used over years and recommended by natural physicians for multitude of health conditions. The aim of the present study was to evaluate the anti-*Candida* potential of a hydromethanolic extract of rhizomes and roots of *Glycyrrhiza glabra* L. (licorice), in planktonic cells and biofilms, as well as to compare its effect with individual phenolic compounds identified in the extract.

Licorice extract evidenced an antifungal activity against all of the nineteen tested *Candida* strains, including *C. albicans, C. glabrata, C. parapsilosis* and *C. tropicalis* species. The inhibition zones varied between 10-13 mm; MIC and MFC values varied, between 0.375-1.5 and 0.75-3 mg/mL for planktonic cells and biofilms, respectively. Considering the pronounced antifungal activity, a chemical characterization of the extract was conducted, and the main phenolic compounds identified were tested. Flavones (mainly apigenin derivatives), flavanones (mainly liquiritin derivatives), an isoflavone and a chalcone, were the most abundant compounds. However, these compounds were not active neither individually nor combined. Thus, probably synergistic effects among all components in the phenolic pool and/or other compounds present in the extract should be responsible for the observed antifungal activity.

Detailed *in vivo* studies should be performed, not only to evaluate the actual effects in a complete organism, but also the safety of the preparation and bioavailability in systemic infection models.

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