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FLOWERS USED IN PORTUGUESE FOLK MEDICINE LIKE A NEW ANTIFUNGAL AGENTS AGAINST CANDIDA SPECIES

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The prevalence of opportunistic fungal infections has been increasing dramatically over the recent decades mainly due to the boom of the AIDS epidemic, increasing number of immunocompromised patients and the commonly use of indwelling medical devices. Although *Candida albicans* has been regarded as the most common causative agent of fungal infection in humans, nowadays other non-*Candida albicans* *Candida* (NCAC) species such as *Candida glabrata*, *Candida tropicalis* and *Candida parapsilosis*, are emerging as significant nosocomial pathogens and with high level of resistance to certain antifungal drugs. So, in the last years the interest in natural compounds has raised, specifically some phenolic extracts which have been known in folk medicine as antimicrobial agents. Thus, this work aimed to perform a screening of the antifungal potential of phenolic extracts of *Castanea sativa*, *Filipendula ulmaria* and *Rosa micrantha* flowers from Northeastern Portugal, against *Candida* species.

The extracts were exhaustively characterized by HPLC-DAD-ESI/MS. Hydrolysable tannins were the main group of phenolic compounds in *C. sativa* and *F. ulmaria* samples, while flavonoids including procyanidins were the most abundant group in *R. micrantha* (6090 ± 253 mg/Kg). The minimal inhibitory concentration (MIC) was

determined according with the guidelines in National Committee for Clinical Laboratory Standards (NCCLS, M27-A2 document) with some modifications. All extracts revealed promising antifungal effect, with MIC values ranging from concentrations under 0.05 to 0.625 mg/ml. *R. micrantha* extract showed a strong effect ($MIC \leq 0.155$ mg/ml) against the four strains assayed. Furthermore, it is also possible to assume that was against *C. glabrata* and *C. parapsilosis* that the phenolic extracts showed the highest activity ($MIC < 0.05$ mg/ml).

Finally, the natural extracts effect was assessed on biofilm formation and on pre-formed biofilms by total biomass quantification using CV staining (1%, v/v). *F. ulmaria* and *R. Micran-*

tha were causative agent of important inhibition and destruction of *C. tropicalis* biofilms. In summary, the significant antifungal activity of *C. sativa*, *F. ulmaria* and *R. micrantha* revealed in this work, suggest that they could serve as a source of compounds with therapeutic potential against *Candida*-related infections.

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POLYAMINE TRANSPORTERS DUR3 AND DUR31 FACILITATE UPTAKE OF ANTIFUNGAL CATIONIC PEPTIDE HISTATIN 5 INTO *CANDIDA ALBICANS*