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## New approaches to the treatment of candidiasis regarding alternative and complementary medicine

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Candidiasis is considered one of the most common opportunistic fungal infections, but in the last years, has reached epidemic levels. Despite being *Candida albicans* considered the most frequent, other non-*Candida albicans* *Candida* species have also been involved [1]. Accordingly, and also due to the overuse of antimicrobial agents, the number of microorganisms with acquired drug-resistance is increasing, which difficult the success of the treatment [2]. Thus, other efficient and new alternatives are required, and the present work aims to provide new insides towards an effective treatment of candidiasis, according to our recent revision of the related literature [1].

A wide variety of factors are involved and favors the occurrence of this complicated fungal infection. Prevention is the most effective treatment, which includes for example, a good personal hygiene, to avoid some dietary risk factors and also to ensure a healthy intestinal flora. But, in face of an active infection, a rapid and effective intervention is necessary. Antifungal drugs should be prescribed only if necessary. Plants are extremely rich sources of phytochemicals with antimicrobial potential, such as phenolic compounds, which are able not only to reduce *Candida* species to a normal and controllable level, but also to promote correct metabolic and immunologic functions, among other health benefits. For example, phenolic extracts of *Juglans regia* L., *Eucalyptus globulus* L., *Rubus ulmifolius* Schott, *Pterospartum tridentatum* (L.) Willk. [3] as well as *Salvia officinalis* L. [4] have shown to be promissory antifungal agents, being those effects mainly related with the presence of phenolic acids and flavonoids. Notwithstanding, their mechanisms of action remain unknown, which still encourage the research in this area.

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### References:

- [1] N Martins *et al.*, Mycopathol., 2014, 177, 223–240.
- [2] I. K. Maurya *et al.* Biochim Biophys Acta., 2013, 1830, 5193–203.
- [3] N Martins *et al.*, Ind Crops Prod., 2015, 66, 62–67.
- [4] N Martins *et al.*, Food Chem., 2015, 170, 378–385.