



Review article

Potential additive or synergistic effect of the essential oils of *Eucalyptus citriodora*, *Eucalyptus camaldulensis* and *Eucalyptus globulus* and their interactions with antifungal agents to evaluate anti-*Candida* spp. activity: A literature review

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Abstract

The genus *Candida* covers a diversity of species responsible for causing important fungal infections in individuals. *Candida* species are among the most frequent pathogens in hospital infections considered severe. The increasing resistance to antifungal drugs is one of the factors that promote prospecting for new therapeutic agents. Essential oils have shown promising results by inhibiting or preventing fungal growth.

A literature review was performed in the online databases PubMed, Scielo, Scopus, LILACS, CAPES periodicals and ScienceDirect, with the aim of verifying the anti-candid activity and possible interactions with antifungals of essential oils of *Eucalyptus citriodora*, *Eucalyptus camaldulensis* and *Eucalyptus globulus*. The main constituents of these essential oils are citronellal, 1,8-cineole (eucalyptol), have anti-*Candida* activity and have a potential additive or synergistic effect when combined with antifungals. The MIC range of *E. citriodora* essential oil for different *Candida* species was 0.02 µg/mL to 5 µg/mL. The range of the inhibition zone of the essential oil of *E. camaldulensis* against the different species of *Candida* was 18 – 23 mm for the leaves of the plant and 12 - 20 mm for the fruits. The MIC for the essential oil of *E. globulus* was 1000 µg/mL, while in combination with an antifungal, the value was 32 times lower, thus presenting an additive effect with ICIF of 1.031. They also have a potential additive or synergistic effect with antimicrobials. However, further studies are still needed to consolidate knowledge about these species for their use in the therapeutic clinic in infections caused by *Candida* spp.