

**11th Central European Congress on
Food and Nutrition**

CEFood Congress Book

**“Food, technology and nutrition for
healthy people in a healthy environment“**

Editors:

Peter Raspor, Irena Vovk, Andrej Ovca, Sonja
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Ljubljana, 2022

11th Central European Congress on Food and Nutrition
"Food, technology and nutrition for healthy people in a healthy environment"

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The POC is responsible for developing a well-balanced, high-quality scientific program together with Advisory Committee to be presented at the

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THE EFFECT OF PLANT EXTRACTS AND ESSENTIAL OILS ON THE
ADHESION OF *CANDIDA GLABRATA*

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The incidence of fungal infections, particularly those caused by *Candida species* (candidiasis) has increased significantly, causing high levels of morbidity and mortality. This fact is mainly due to the rise in antimicrobial resistance and the limited number of efficient antifungal drugs, which still have many side effects. The use of natural antimicrobial agents has gained much attention to inhibit disease-causing microorganisms. Therefore, the aim of this study was to evaluate the antifungal and antiadhesion potential of fifteen plant extract, essential oils and compounds against *Candida glabrata*. Susceptibility tests indicated that essential oils of *Cinnamomum verum* and *Origanum vulgare* showed the highest inhibitory effect. Antiadhesion ability of the plant extracts and essential oils against *C. glabrata* ZIM 2369 was estimated by the standard crystal violet assay. The results showed that the essential oils of *C. verum*, *O. vulgare*, *Satureja montana* and *Thymus vulgaris* have promising activity against the initial phase of biofilm formation and the preformed 24h biofilm. In contrast, the essential oils of *Salvia officinalis* and *Salvia sclarea* were inactive against *C. glabrata* biofilm. On the other hand, *Sedum roseum* extract showed the strongest antiadhesion effect. As *Candida* biofilms are intrinsically resistant to conventional antifungal agents, alternative therapeutics like plant-based natural products have been evaluated for their antimicrobial and antibiofilm activity. Understanding more about the antimicrobial performance and possible mechanism of the tested plant extracts and essential oils will be helpful for their application against *Candida* spp. in medicine in the future.

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