

BOOK OF ABSTRACTS

3rd International Conference on Plant Biology

(22nd SPSS Meeting)



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Institute for Biological Research "Siniša Stanković", University of Belgrade

Faculty of Biology, University of Belgrade

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most likely maintain nepetalactone content stable by lowering both its biosynthesis and degradation, which results in decreased dehydronepetalactone content in leaves, and thus in altered nepetalactone/dehydronepetalactone ratio.

Keywords: nepetalactone, dehydronepetalactone, nepetalactone biosynthetic pathway genes, physiological drought

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Salvia sclarea L. essential oil as possible natural antimicrobial and antigenotoxic agent

PP4-21

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Clary sage (*Salvia sclarea* L.) belongs to genus *Salvia* (family *Lamiaceae*). This cultivar is also known as a "clear-eye" since its seeds are traditionally used to easily remove foreign objects from the eye. The essential oil obtained from the plant aerial part is widely used as an antiseptic, anti-depressant, antispasmodic, carminative, and aphrodisiac. The aim of this study was to determine the pharmacological potential of selected essential oil, obtained by means of steam distillation, according to screened antimicrobial and antigenotoxic activity. The antimicrobial activity was assessed using the microdilution method against ten ATCC standardized microorganisms, nine bacterial strains (of which six G+ and three G-) and one fungi. The *in vitro* protective effect of the essential oil from *S. sclarea* against hydroxyl radical-induced DNA damage was also evaluated. The obtained MIC values pointed out good antimicrobial potency of tested essential oil against *Bacillus subtilis* (0.3125 µg µL⁻¹), *Bacillus cereus* (0.3125 µg µL⁻¹), *Enterococcus faecalis* (10 µg µL⁻¹), *Staphylococcus aureus* (25 µg µL⁻¹), *Staphylococcus epidermidis* (1.56 µg µL⁻¹), *Micrococcus lysodeikticus* (50 µg µL⁻¹), *Escherichia coli* (50 µg µL⁻¹), *Pseudomonas aeruginosa* (10 µg µL⁻¹), *Salmonella enteritidis* (10 µg µL⁻¹), *Candida albicans* (6.25 µg µL⁻¹). Antigenotoxic activity was dose-dependent, decreasing with higher dosages in a concentration range from 25 to 400 µg mL⁻¹. Conclusively, examined oil may be characterized as a potential therapy against infections caused by *Bacillus* strain as well as a supplement in cancer treatments as healthy cells protector.

Keywords: essential oil, *Salvia sclarea*, antimicrobial activity, antigenotoxic potential

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