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Antimicrobial and antigenotoxic activity of *Ocimum basilicum* L. essential oil

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Nezrina Mihović[1], Sanja Matić[2], Milan Mladenović[1], Nevena Stanković[1], Snežana Stanić[2], Rino Ragno[3,4] (nezrina.mihovic@pmf.kg.ac.rs)

[1] Department of Chemistry, Faculty of Science, University of Kragujevac, Radoja Domanovića 12, 34000 Kragujevac, Serbia

[2] Department of Biology and Ecology, Faculty of Science, University of Kragujevac, Radoja Domanovića 12, 34000 Kragujevac, Serbia

[3] Rome Center for Molecular Design, Department of Drug Chemistry and Technologies, Faculty of Pharmacy and Medicine, Sapienza Rome University, P.le A. Moro 5, 00185, Rome, Italy

[4] Alchemical Dynamics srl 00125 Rome, Italy

The essential oil from *Ocimum basilicum* L. (fam. *Lamiaceae*), obtained by means of steam distillation, was examined in order to determine its pharmacological potential by virtue of antimicrobial and antigenotoxic activity. Commonly called as sweet basil, considered oil is used worldwide as food flavor as well as in folk medicine for the treatment of headaches, diarrhea, coughs, constipation, warts, and kidney malfunctions; *O. basilicum* leaves are known for antiseptic properties as well as for the ability to destroy harmful bacteria in food; in the pharmaceutical industry, oil is used as an outstanding natural preservative. Herein, the antimicrobial activity of *O. basilicum* essential oil was determined according to microdilution method against six G+ and three G- bacterial strains, and one fungal species. Also, the protective effect of the essential oil on DNA damage induced by hydroxyl radical was investigated by evaluating several concentrations (25, 50, 100, 200, and 400 μg mL^{-1}). The tested essential oil showed good antimicrobial activity according to obtained MIC values against *Bacillus subtilis* (1.25 μg μL^{-1}), *Bacillus cereus* (0.078 μg μL^{-1}), *Enterococcus faecalis* (10 μg μL^{-1}), *Staphylococcus aureus* (10 μg μL^{-1}), *Staphylococcus epidermidis* (2.5 μg μL^{-1}), *Micrococcus lysodeikticus* (10 μg μL^{-1}) (G+); *Escherichia coli* (2.5 μg μL^{-1}), *Pseudomonas aeruginosa* (50 μg μL^{-1}), *Salmonella enteritidis* (50 μg μL^{-1}) (G- bacteria); *Candida albicans* (0.3125 μg μL^{-1}) (fungus). DNA protective activity of essential oil was in a concentration-dependent manner and decreased with increasing concentrations. 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, *Ocimum basilicum*, antimicrobial activity, antigenotoxic potential

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