

MEETING ABSTRACTS

***PISTACIA LENTISCUS* – CYTOTOXICITY AND ANTI-INFLAMMATORY ACTIVITY**

Věra Králová¹, Barbora Szotáková², Thi Hoang Huong Bui², Marie Elstnerová², Egle Milia³

Presenting author: Věra Králová (KralovaV@lfhk.cuni.cz)

¹ Faculty of Medicine, Charles University, Šimkova 870, 500 03 Hradec Králové, The Czech Republic

² Faculty of Pharmacy, Charles University, Heyrovského 1203, 500 05 Hradec Králové, The Czech Republic

³ Department of Medicine, Surgery and Experimental Science, University of Sassari, Viale San Pietro 43, 07100, Sassari, Italy

Pistacia lentiscus L. (PLL) is a wild-growing shrub from the Anacardiaceae family that occurs naturally in the Mediterranean. It has been used in traditional medicine for its many effects since the days of ancient Greece (1). PLL plant and processed products have been largely employed as oral antiseptic, anti-inflammatory, analgesic, and healing agents (2). Today, the scientific interest in these edible and not-edible parts of PLL is wide-spreading, as some studies underlined the potential benefit against inflammation and infections (3). The aim of our work is to find out more details about biological activity of essential oil and aqueous extract prepared from leaves of wild occurring PLL plants growing in North Sardinia. The cytotoxicity of not only the pure essential oil but also of the nanoemulsions with PLL oil, and aqueous extract were tested on three oral cell lines (gingival fibroblasts, periodontal ligament fibroblasts, and dysplastic oral keratinocytes). The viability of human oral cells was the most diminished by lecithin nanoemulsion, less by aqueous extract, and pure essential oil had the lowest influence on the viability – it was non-toxic up to the concentration of 100 µg PLL/ml medium. The anti-inflammatory activity was measured by cyclooxygenase and lipoyxygenase inhibition. PLL essential oil showed the capacity to inhibit COX1/2 more than LOX. In conclusion, PLL essential oil is not cytotoxic for oral cell lines and show an *in vitro* anti-inflammatory activity.

The study was supported by the Charles University research project SVV 260 550.

Keywords: medicinal herbs; cyclooxygenase; lipoyxygenase; cytotoxicity

References

1. Benhammou N, Bekkara F A, Panovska TK. Antioxidant and antimicrobial activities of the *Pistacia lentiscus* and *Pistacia atlantica* extracts. African Journal of Pharmacy and Pharmacology. 2008;2(2):22–28.
2. Milia E, Bullitta SM, Mastandrea G, Szotáková B, Schoubben A, Langhansová L, Quartu M, Bortone A, Eick S. Leaves and Fruits Preparations of *Pistacia lentiscus* L.: A Review on the Ethnopharmacological Uses and Implications in Inflammation and Infection. Antibiotics. 2021;10(4):425.
3. Piccolella S, Nocera P, Carillo P, Woodrow P, Greco V, Manti L, Fiorentino A, Pacifico S. An Apolar *Pistacia Lentiscus* L. Leaf Extract: GC-MS Metabolic Profiling and Evaluation of Cytotoxicity and Apoptosis Inducing Effects on SH-SY5Y and SK-N-BE(2)C Cell Lines. Food and Chemical Toxicology. 2016;95:64–74.