

# THE EVALUATION ON *ANGUSTIFOLIA* LAVENDER EXTRACTS ACTION ON INDICES OF ANTIOXIDANT SYSTEM IN RATS BLOOD SERUM DURING CHRONIC INDUCED TOXICITY

Jian Mariana<sup>1</sup>, Cotelea Tamara<sup>2</sup>, Pantea Valeriana<sup>3</sup>, Organ Adina<sup>3</sup>, Cobzac Vitalie<sup>1</sup>, Kulcitki Veaceslav<sup>4</sup>, Nacu Viorel<sup>1</sup>

<sup>1</sup>Laboratory of Tissue Engineering and Cell Cultures, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

<sup>2</sup>Department of Pharmaceutical and Toxicological Chemistry, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

<sup>3</sup>Laboratory of Biochemistry, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

<sup>4</sup>Institute of Chemistry, MSU

**Background.** In recent years, the extracts from medicinal plants gained an increased interest for wound healing. Thus, approximately 450 plant species have been identified with wound healing properties. The current knowledges about the wound healing process include coagulation, inflammation, proliferation, formation and accumulation of fibrous tissue, collagen deposition, epithelization, wound contraction with the formation of granulation tissues, remodeling and maturation [1].

**Material and methods.** As raw material were used wastes of the plants, left from the process of essential oil extraction. [2]. The chronic toxicity was induced by oral administration of *Lavandula Angustifolia* extracts to 18 Wistar rats divided into 3 groups. The LA extract was diluted with water and administered daily at the same time in successive doses for each separate group: the group I – 500mg/kg; the group II - 1000 mg/kg; and group III served as control, to which was administered just water without the investigated substance. Indices of the antioxidant system were appreciated: total antioxidant activity, catalase and superoxide dismutase (SOD). Statistical analysis was performed using IBM SPSS Statistics 17.

**Results.** The analysis of the results of the antioxidant system indices in the blood serum of rats with chronic induced toxicity, determined a statistically significant increase in both experimental groups, compared to the control group. The antioxidant system indices increased with 12% in group I ( $p < 0.05$ ) and with 19% in group II ( $p < 0.001$ ). It was also found that SOD enzyme activity showed a significant increase in group I – 10% ( $p < 0.005$ ), while the catalase activity was significantly higher in both experimental groups compared to control ( $p < 0.05$ ), in group I with 26% and in group II with 29%.

**Conclusion.** Lavander extracts present the antioxidant potential and needs to be studied further.

**Keywords.** Chronic toxicity, *Lavandula Angustifolia*, extract, antioxidant system.

## References:

1. Ghosh, P.K.; Gaba, A. Phyto-extracts in wound healing. *Journal of Pharmacy & Pharmaceutical Sciences*, 2013, 16(5), pp.760-820. DOI:<https://doi.org/10.18433/J3831>.
2. Ivanov, Ivan, et al. "Lavender waste—promising source of triterpenoids and polyphenols with antioxidant and antimicrobial activity." *Ind. Technol* 5 (2018): 26-32.