**LEMLA MINOR L. EXTRACT AMELIORATE THE INTRACELLULAR C-REACTIVE PROTEIN AND ROS LEVELS IN PROGRESSIVE BLEOMYCIN-INDUCED PULMONARY FIBROSIS**

Yanka Karamalakova¹*, Ekaterina Georgieva¹, Tzvetelin Georgiev², Bilyana Tacheva³, Muhammad Akram⁴, Veselin Ivanov⁵ and Galina Nikolova¹

¹Chemistry and Biochemistry Department, Trakia University, St. Zagora, Bulgaria; ²Physiology, Pathophysiology and Pharmacology Department, Trakia University, Bulgaria; ³Medical physics, biophysics and radiology Department, Trakia University, Bulgaria; ⁴Eastern Medicine Department, Government College University Faisalabad, Pakistan; ⁵Neurology, Psychiatry and Disaster Medicine Department, Trakia University, Bulgaria;

**Introduction**

The protective effect of Lemna minor L. (L. minor) roots extract to Bleomycin-induced progressive pulmonary fibrosis (BLM-PF) in mice was investigated. The LME (at 200 mg/mL concentration) antioxidant capacity were quantified by catalase-like activity (CAT), superoxide dismutase-like activity (SOD), total antioxidant capacity (TAC), DPPH absorption (98%) and DPPH radical-scavenging activity (97.3%), by using spectrophotometrical and EPR analysis. The progressive model (29 days) was used to investigate the BLM-PF; after 16 days of BLM-administration the PF were registered. Pulmonary toxicity was induced by intraperitoneal injection of animals once daily with BLM (0.069 U/mL; 0.29 U/kg bw; n=12 ICR/B mice) for 4 weeks. The L. minor was administered once a day, 4 weeks, 1h prior (200 mg/mL; 0.341 mg/kg/day; in n=6 ICR/B mice). The 4 groups were as follows: 1) control group- tap to water and normal food; 2) BLM- administration; 3) L. minor - administration; 4) L. minor protection + BLM- administration. The physiological status and behavior of animals were monitored daily and on the 30th day the mice were sacrificed (Nebulat 50 mg/kg i.p.). The lung samples were removed (pH=7.4, 4°C) and analyzed for biochemical parameters (SOD, CAT, GSH, GPX1, malondialdehyde (MDA)). C-reactive protein (CRP) was investigated by using Canine C-ELISA Kit- 557826-D. The ROS levels were measured by spin-adduct-reduction between phenyl N-tertiary-buty1 nitro (PBN in DMSO) and generated radicals, by EPR-EMXmicro, X-hand spectrometer after double integration of the corresponding spectra. The results present BLM-oxidative toxicity and statistically significant decrease in SOD (p<0.03), CAT (p<0.05) GPX1(p<0.05) enzyme activity and two-fold increase in MDA (p<0.05); CRP (p=0.05) and ROS- levels (p<0.004), compared to group 1. In opposite in groups 3 and 4, the highly toxic BLM-effects were significantly decreased for all parameters in pulmonary cells (p<0.05, t-test), relative to the controls. In conclusion, were indicated that L. minor treatment stimulates endogenous activity, and effectively reduced CRP-inflammation and scavenging ROS products. The positive correlation were registered between CRP and ROS (r=0.49, t-test). The L. minor ameliorates ROS-formations and neutralized the BLM-induced oxidative toxicity probably by suppressing the body/pulmonary cell residual inflammation processes.

Keywords: L. minor, BLM, CRP, ROS

*proteins (up to 35%),
*vegetable fibers (up to 17%),
*fats (up to 5%),
*polsaccharides,
*flavonoids,
*amino acids,
*aliphatic acids,
*phenolic acids,
*triterpene compounds,
*vitamins,
*micro- and macro-elements

In Bulgarian Lemna were identify the presence
of 32 biologically active substances
Phytosterols (52.8 mg/kg), saturated hydrocarbons
(23.1 mg/kg), aldehydes and ketones
(20.2 mg/kg),
fatty acids and their derivatives (11.1 mg/kg)

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