

# ACUTE TOXICITY STUDIES OF SUPPOSITORIES, CONTAINING QUERCETIN, COENZYME AND TIOCTIC ACID AND THEIR COMBINATIONS

Derimedvid L.V., Culun H.V.

National University of Pharmacy, Kharkiv, Ukraine

derimedved@mail.ru

The metabolic syndrome – also called the insulin resistance syndrome – is a multifaceted syndrome characterised by five major abnormalities: insulin resistance, glucose intolerance (impaired glucose tolerance/non-insulin-dependent diabetes mellitus (NIDDM)), hypertension, obesity, and dyslipidaemia (hypertriglyceridaemia and low HDL-cholesterol). Oxidative stress in all aerobic organisms including herbivorous insects is caused by reactive oxygen species (ROS), such as superoxide-anion radical ( $\cdot\text{O}_2^-$ ), hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) and hydroxyl radical ( $\text{OH}\cdot$ ). The formation of  $\cdot\text{O}_2^-$  may evoke the cascade of other reactive oxygen species and results in alterations within structures of macromolecules such as DNA, protein and lipids. The oxidative stress was assessed with generation of the hydrogen peroxide, total content of the thiols and the lipid peroxidation products (TBARS).

The purpose of research. The aim of this study was to investigate the acute toxicity of suppositories containing quercetin, coenzyme and tioctic acid. This comprehensive plan to use the drug in treatment of metabolic disorders and metabolic syndrome, diabetes, and other vascular lesions.

Materials and methods. Acute toxicity of suppositories containing quercetin, coenzyme and tioctic acid and their combinations was studied in 50 mature white mongrel rats weighing 180-200 g males and females weighing 160-180 g under a single rectal introduction to the wide range of doses, as recommended DETS Health of Ukraine.

The results of research. As a result, the study found that the introduction of suppositories containing active ingredients and their combination at doses 5000 mg / kg did not result in death of the animals does not affect the mass ratios of the internal organs, indicating the absence of significant toxicity study drug at this dose and characterizes it as a relatively harmless (V class toxicity,  $\text{LD}_{50} > 5000 \text{ mg / kg}$ ) according to conventional toxicological classification of substances.

According to recommendations of the State Pharmacological Center MoH Ukraine installation medium lethal dose suppository containing quercetin, coenzyme and tioctic acid and combinations thereof in this case is impossible. In the study of specific pharmacological activity suppository installed pronounced therapeutic and prophylactic properties of the drug on the model of the metabolic syndrome.

Findings. The results indicate the feasibility of further preclinical study substances to create on their basis a new effective and safe drug for the pharmacological correction of metabolic disturbances in diabetology and cardiology.