

Title: Pharmacological activity of new complex compounds of germanium

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Abstract:

Background to determine the cardioprotective and hepatoprotective activities of new complex compounds of Germanium with organic bioligands. Aims: insufficiency of cardio- and hepatoprotectors. Methods: pre-clinical research of pharmacological properties of new complex compounds were conducted on sexual maturity rats. Animals were observed according to European Convention for the Protection of Vertebrate Animals used for Experimental and Other Scientific Purposes 2019/10/3 EU. Experimental anthracycline doxorubicin intoxication was caused by doxorubicin injections intramuscularly in a dosage of 5mg/kg once a week. Complex of Germanium with niacin (MIGU-1), complex of Germanium with niacin and oxyethylidenediphosphonic acid (OE-5) were used in research. The development of the pathology and the efficiency of correction of metabolic disorders in the tissues of the myocardium and liver of experimental animals was determined by the level of products of lipid peroxidation and protein biochemical methods, using the method of electron microscopy. Statistical processing of results was performed using t-test or Mann-Whitney test. Results: in the case of chronic doxorubicin intoxication deep oxidation violations of lipids and proteins cardiomyocytes and hepatocytes of experimental animals were detected, the impact of new complex compounds of germanium with bioligands led to the repair of the pro/antioxidant homeostasis. Summary/Conclusion: the analysis of the results of the study during administration of different doses of researched compounds shows the prospect of further study of new coordination compounds of germanium as a potential cardioprotectors and hepatoprotectors and enhance the prospects of interdisciplinary integrated studies.