The results obtained indicate that transfusion of red blood cells stored in hypothermic conditions with the addition of NAC is safe and effective for the treatment of anemia in dogs. The use of NAC allows preserving the functional properties of red blood cells and preventing the development of complications, which is especially important for dogs with chronic diseases. Hematological and biochemical parameters obtained after transfusion indicate an improvement in the health of animals, which indicates the feasibility of further application of this method in clinical practice.

CONTENT OF LIPID PEROXIDATION PRODUCTS AND CATALASE ACTIVITY IN THE BRAIN TISSUE OF Cr(VI)-INTOXICATED RATS UNDER THE ACTION OF ETHYLTHIOSULPHANILATE

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Cr(VI) is a representative of heavy metals, classified as a global environmental pollutant and a potent toxicant to living organisms [Zhang, 2024]. The negative impact of Cr(VI) compounds is accompanied by neurotoxicity [Wise, 2022], the main reason for which is the persistent Cr(VI)-induced production of ROS and disruption of the pro/antioxidant balance in brain cells. Mammalian brain cells have a high percentage of unsaturated fats and a less effective antioxidant defense system, which causes increased sensitivity of the corresponding cells to the degrading effects of ROS [Saleh, 2022].The use of antioxidant compounds is considered to be one of the effective methods of counteracting Cr(VI)-induced neurotoxicity caused by ROS hyperproduction [Tripathi, 2023]. Ethylthiosulfanylate (ETS) belongs to the class of thiosulfonate compounds, which are synthetic analogues of natural sulfur organic bioactive compounds extracted from plants of the *Alliaceae* family. ETS is characterized by antiradical, antioxidant properties *in vitro* and *in vivo* [Liubas, 2022], and also reduces the level of Cr(VI)-induced oxidative stress in rat liver [Kotyk, 2020].

Therefore, the aim of the study was to investigate the content of lipid hydroperoxides and catalase activity in the brain tissue of Cr(VI)-intoxicated rats under the action of ethylthiosulfanylate.

The study was conducted in the Laboratory of biochemistry adaptation and ontogenesis of animals of the Institute of Animal Biology of the NAAS on male *Wistar* laboratory rats weighing 135 ± 5 g. The animals were divided into 5 groups of 5 rats each: Group 1 (control group) – received intraperitoneal injection of 150 μl of physiological saline once daily for 2 weeks; Group 2 – was injected intraperitoneally with $K_2Cr_2O_7$ dissolved in physiological saline solution (2.5 mg Cr(VI)/kg body weight) once daily for 2 weeks; Group 3 – was administrated intragastrally with 1000 μl of sunflower oil once daily for 2 weeks and then injected intraperitoneally with 150 μl of physiological saline once daily for 2 weeks; Group 4 – was administrated intragastrally with 1000 μl of oil solution of ETS (ethylthiosulfanylate) (100 mg/kg body weight) once daily for 2 weeks and then injected intraperitoneally with 150 μl of physiological saline once daily for 2 weeks. Group 5 – was administrated intragastrally with 1000 μl of oil solution of ETS (100 mg/kg body weight) once daily for 2 weeks and then injected intraperitoneally with $K_2Cr_2O_7$ solution (2.5 mg Cr(VI)/kg body weight) once daily for 2 weeks. The material for the study was rat brain. In brain tissue homogenates, the content of lipid hydroperoxides (SU/g tissue) and catalase activity (mmol/min ×mg protein) were determined. Mathematical and statistical (ANOVA) calculations were performed using *Microsoft Excel* software packages.

The content of lipid hydroperoxides significantly increased, while catalase activity significantly decreased in the brain tissue of rats of the experimental group 2 by 81 and 54%, respectively, compared to the control (group 1). Similarly, the level of lipid hydroperoxides significantly increased,

and catalase activity significantly decreased in the brain of animals of the experimental group 5 by 39 and 31%, respectively, compared to the values of the group 3. However, the level of lipid hydroperoxides in the brain of animals of group 5 (39%) compared to the group 3 was by 42% lower than the level of lipid hydroperoxides in the brain of rats of group 2 (81%) compared to group 1. Catalase inactivation in the brain of animals of group 5 (31%) compared to group 3 was by 23% lower than the inhibition of catalase activity in the brain of rats of group 2 (54%) compared to group 1.

Thus, Cr(VI)-induced toxicity causes a disturbance in the pro/antioxidant balance in rat brain tissue by stimulating lipid peroxidation and inhibiting catalase activity. However, the Cr(VI)-induced increase in lipid hydroperoxides content and catalase inactivation were twofold lower after pretreatment with ETS at the tested dose.

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PROSPECTS FOR USE OF A NATURAL SULFURIC COMPOUND PROPYL PROPANE THIOSULFONATE IN THE FIELD OF ANIMAL HUSBANDRY

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Organosulfur compounds are organic molecules composed of sulfur atoms bonded to carbon atoms. Edible plants of the genus *Allium*, such as garlic (*Allium sativum*) or onions (*Allium cepa*), contain a large number of different types of sulfur compounds. These compounds are responsible for the characteristic pungent odor and taste of *Allium* vegetables and are also characterized by a wide