the loss of water from the biomaterial.

While maintaining traditional preservation technology, you can use a 5 % aqueous solution of sodium benzoate as a preservative [1]. Sodium benzoate is the sodium salt of benzoic acid. It is a white, odourless powder, easily soluble in water, more difficult in alcohol. Molar mass 144.11 g/mol; melting point 410°C. It has antimicrobial and antifungal effect but is inferior in these characteristics to benzoic acid [2]. It is used as a preservative in the food industry (E211) and as an expectorant and drug for the treatment of neurodegenerative pathologies in humans [4]. Does not cause gross denaturation of proteins, low toxicity. Sodium benzoate solutions are non-volatile, do not form vapours, are chemically stable, and do not irritate the upper respiratory tract and skin.

Sodium benzoate solution perfectly preserves biological materials without causing changes in the natural color, consistency, and size of tissues, and eliminates unpleasant odours.

Frozen laboratory rats are preserved by immersion in a 5% aqueous solution of sodium benzoate, the volume of which is 10 times greater than the volume of the biomaterials. Additionally, the solution is injected into the chest and abdominal cavities of rats. The biomaterials are kept in solution until at least 1% concentration of the preservative is reached in its tissues.

In the process of using a preservative solution based on sodium benzoate for preserving the corpses of laboratory rats with their subsequent dissection, the problem of drying out the material arose, which was solved by using a 5% sodium benzoate solution prepared in a mixture of 30% ethanol, 30% glycerol and 40% demineralized water.

Conclusions:

1. Using a 5% aqueous solution of sodium benzoate, an improvement in the quality of specimens is achieved, as their information content and aesthetics increase, by preventing changes in natural color, partial or complete preservation of size and consistency, increasing the storage period and eliminating occupational hazards for personnel.

2. Sodium benzoate solution prepared in a mixture of ethanol and glycerol to preserve the corpses of laboratory rats prevents drying out of the biomaterials during dissection.

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ANTI-INFLAMMATORY PROPERTIES OF SILVER NANOPARTICLES AND THEIR EVALUATION IN ANIMAL MODELS

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Introduction. Numerous types of inflammation caused by foreign pathogens or chemical substances and mutations that enhance inflammation inhibitors determine the need for the development of new agents with pronounced anti-inflammatory efficacy [1]. Over the past decade, tremendous progress has been made in making therapeutic products and drugs based on nanoparticles (NPs) commercially available. Due to the impressive advances in nanotechnology, nanomaterials with unique regulatory properties on reactive oxygen species (ROS) have been investigated to control the spatio-temporal dynamic behavior of ROS in the biological environment, which contributes to the emergence of a new generation of therapeutic methodology, i.e., nanomaterial-guided evolution of ROS *in vivo* for therapeutic interventions [2]. Therefore, the use of NPs is a promising direction in the development of anti-inflammatory agents. Note that NPs have become widely used in the biomedical field due to their high ability to penetrate cells, ligand binding properties due to a high ratio of surface area to volume [3]. A mechanistic study showed the presence of anti-inflammatory activity in various metals and nanoparticles of metal oxides, such as Silver, Gold, etc. [4].

Thus, **the aim of the study** is to substantiate the use of Silver NPs as anti-inflammatory agents in different animal models under internal diseases.

Results. Inflammation is an early immunological response to foreign particles by tissues, which is supported by increased production of proinflammatory cytokines, activation of the immune system, and release of prostaglandins and chemotactic substances, such as complement factors, interleukins, and tumor necrosis factors [4]. Depending on the method of synthesis of NPs, the chosen experimental model, dose and conditions of exposure, the introduction of NPs can have both positive and negative effects by affecting cellular processes, such as the development of oxidative stress, initiation of an inflammatory response, mitochondrial dysfunction, etc. In terms of tissue-specific effects, the local microenvironment can have a profound effect on whether a NPs is safe or harmful to a cell. The interaction of NPs with metal-binding proteins (zinc, copper, iron, and calcium) affects both their structure and function [5].

Among them, Silver NPs have great prospects in solving the problems of resistance of microorganisms to antibiotics and finding effective anti-inflammatory compounds due to their broad spectrum of action and persistent antimicrobial properties. It should be noted that the chemical composition of the surface, size and shape affect their antibacterial effect and anti-inflammatory activity, which plays an important role in the development of preparations based on Silver NPs [6].

Bhol & Schechter (2007) reported anti-inflammatory activity in rats given orally 40 mg/kg nanocrystalline silver and showed a significant reduction in colonic inflammation [7]. Mice treated with Silver NPs showed rapid wound healing, which had a dose-dependent effect. In addition, significant antimicrobial properties, reduction of wound inflammation and modulation of cytokines have been demonstrated [8].

Wong et al. (2007) found that Silver NPs are able to reduce the number of inflammatory markers, can inhibit inflammatory processes in the early phases of wound healing [9]. A model of contact dermatitis in pigs showed that treatment with Silver NPs significantly increased apoptosis in inflammatory cells and reduced the level of pro-inflammatory cytokines, as well as reduced edema and other clinical signs [10].

Conclusions. Silver NPs due to their anti-inflammatory activity, antimicrobial and antioxidant properties are promising for the development of medicinal forms in the treatment of internal diseases in animals.

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ASSESSMENT OF THE LEVELS OF OXIDATIVELY MODIFIED PROTEINS IN THE BLOOD PLASMA OF MARES AND STALLIONS OF PONIES INVOLVED IN RECREATIONAL HORSEBACK RIDING

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Introduction. Recreational horse riding has become an increasingly popular leisure activity and sport worldwide, attracting participants of all ages and skill levels [Dąbek et al., 2015]. While the physical and psychological benefits of riding are well recognised, the potential impact of this activity on the health and well-being of participating equestrians remains a topic of interest and