

*Escherichia coli* -  $15,6 \pm 0,5$  and  $14,8 \pm 0,4$ ; *Candida albicans* -  $15,2 \pm 0,5,4$  and  $13,6 \pm 0,4$ ). Thus, it should be noted that in the presence of identical active substances in samples number 1 and number 3 their release from the base of sample number 1 is more effective and antimicrobial activity is higher than in sample number 3 (diameters of microorganisms growth inhibition zones are greater).

**Conclusions.** Studies have shown that prospective for further work in developing the composition and technology of nasal gel for the treatment of rhinitis is sample No. 1 based on Carbopol 980 at a concentration of 2%.

## **DEVELOPMENT OF MODERN NANOTECHNOLOGICAL MEANS FOR TONSILLIT TREATMENT**

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**Introduction.** Chronic tonsillitis is a common disease among all population groups, especially among children and young people. With a long course of the disease, there are violations of the immune status, which leads to exacerbations of this disease and promotes the transition of the process into a more severe form, and also correlates with more pronounced changes in the immune status.

**Aim.** In the treatment of inflammatory diseases of the pharynx and tonsils, depending on their etiology, antibiotic therapy is usually used (since the most common pathogens are microorganisms from the group of streptococci, staphylococci), analgesic drugs. Oral administration of antibiotics in the treatment of inflammatory diseases of the pharynx and tonsils in many cases is not rational. In connection with the impossibility of fixing drugs in the pharyngeal cavity, soft medicinal forms are not used in treatment. The task of our research is the development of magnetically controlled ointments for the treatment of tonsillitis with a view to fixing them on the surface of the tonsils.

**Materials and methods.** At the Department of Inorganic Chemistry the development of magneto-controlled ointments on a hydrophilic basis for adults, which contain nano-sized magnetite, levomycetin, ciprofloxacin, trimecaine, methyluracil, a mixture of polyethylene oxide-400 and polyethylene oxide-1500. For children, levomycetin is not used (due to its bitter taste), and instead of ciprofloxacin, azithromycin is used. The use of levomycetin is due to the fact that, being a wide-spectrum antibiotic, it affects many Gram-positive and Gram-negative bacteria. Ciprofloxacin is an antibacterial agent for systemic use from the group of fluoroquinolones. It is active in infections caused by gram-negative microorganisms, in particular *Pseudomonas aeruginosa* or staphylococci. Azithromycin – antibiotic-macrolide, is widely used for infections of the upper and lower respiratory tract and ENT organs. The use of methyluracil is explained by its ability to accelerate the regeneration of cells, promote wound healing, stimulate cellular and humoral immunity factors. Nano particles of synthetic magnetite type  $Fe_3O_4$  are allowed for use in the pharmaceutical industry as a magnetic component of ointments. (ТУ У 24.1–02010936–006:2008). Being in the ointment in a certain concentration, they convert the ointment into a magnetically controlled.

**Results and discussion.** Based on the created ointments, a method of treatment of tonsillitis was developed. It is based on the use of a magnetically controlled ointment that allows not only to retain on the surface of the tonsils, but also to fill the lacunae with the ointment to the full depth under the action of an external magnetic field (neodymium-iron-boron-magnesium magnet with a remanent magnetization of 1.3 Tesla).

The developed composition of the ointment is prepared in the pharmacy under the prescription of a doctor.

**Conclusions.** The use of a new magnetic ointment with its fixation and retention with an external magnetic field makes it possible to carry out effective conservative local treatment of inflammatory diseases of the pharynx and tonsils, allows eliminating (or reducing) the need for taking internal medicines, which increases the pharmacotherapeutic effect and is safer and more rational method of treatment.