

MINISTRY OF PUBLIC HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY

**TOPICAL ISSUES OF NEW
DRUGS DEVELOPMENT**

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CHOICE OF THE GELLING AGENT FOR THE DEVELOPMENT OF VAGINAL GEL ON THE BASIS OF MICROBIOLOGICAL RESEARCHES

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Introduction Vaginal candidiasis is one of the most common fungal infections in women's genitourinary system caused by conditionally pathogenic yeast-like fungi of the genus *Candida*. Factors that contribute to the development of candidiasis can be pregnancy, the use of broad-spectrum antibiotics, oral contraceptives, as well as immunosuppression, diabetes mellitus, intestinal dysbiosis.

Aim. The purpose of our work was to develop the composition and technology of gel, intended for the treatment of vaginal candidiasis with the addition of lactic acid and essential oils of lavender and tea tree. Two samples of vaginal gel were obtained to study antimicrobial activity. As gel-formers we have selected Sepimax (sample number 1) and Aristoflex (sample number 2) in the amount of 3%.

Materials and methods. The antimicrobial activity of the prototype samples was studied in vitro by diffusion in agar method ("wells" method). This method is based on the ability of active substances to diffuse into agar medium, which has been previously inoculated with microorganism cultures. As test cultures used pure cultures: gram-positive microorganisms *Staphylococcus aureus* ATCC 25293, spore culture *Bacillus subtilis* ATCC 6633, gram-negative cultures of *Escherichia coli* ATCC 25922 and *Pseudomonas aeruginosa* ATCC 27853.

Results and discussion. Experimental data indicate that the samples of vaginal gel number 1 and number 2 have a broad spectrum of antimicrobial activity and a significant antimicrobial activity in relation to the used test strains. Investigated sample No. 2 shows a higher activity in relation to all used microorganism cultures compared with the action of sample No. 1 (*Staphylococcus aureus* - 21.2 ± 0.4 and 13.8 ± 0.4 respectively, *Bacillus subtilis* - 22.2 ± 0.4 and 15.8 ± 0.4 respectively, *Escherichia coli* - 24.8 ± 0.4 and 20.6 ± 0.5 , *Ps. aeruginosa* - 21.8 ± 0.4 and 15.6 ± 0.5). Thus, it should be noted that in the presence of identical active substances in samples number 1 and 2 their release from the basis of sample number 2 is more effective and antimicrobial activity is higher than in sample number 1.

Conclusion. The performed studies have proven that the sample number 2 based on Aristoflex gel-former at a concentration of 3% is prospective for further work on the development of composition and technology of the vaginal gel.

STUDY OF THE THERMAL BEHAVIOR OF BURNET RHIZOMES AND ROOTS BY THE TERMOGRAVYMETRIC METHOD - BASED ON THE DEVELOPMENT OF THE TECHNOLOGY OF THICK EXTRACT

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Introduction. The substantiation of the technological process is a key step in the production of plant substances, in particular, thick extract. Among the stages in the process of their production are thickening of the extractor. The removal of the extractant at this stage is accompanied by thermal processes, which can lead to destructive changes in the components of biologically active substances. However, if medicinal plant material is taken as an object of research is necessary to consider it as a multicomponent mixture of active substances, the study of thermal behavior of which can be carried out using the method of thermogravimetry.

Aim. Conducting thermogravimetric analysis of the burnet rhizomes and roots, which is the raw material for obtaining a burnet extract of thick.

Materials and methods. As a material for the study, pre-shredded particles of less than 1 mm of rhizome root and root were used. The weight of the test sample was 200 mg. Equipment for research -