

produced after expression of this construct in yeast cells can be purified in one go using immunoaffinity chromatography.

Obtaining permission to use a vaccine containing the chimeric protein is very difficult, so it will probably be necessary to subclone the VP1 sequence in another expression vector. Either way, a subunit FMD vaccine will soon be ready for preclinical trials.

The microbiological studies-grounded choice of the basis of suppositories for the nonspecific vaginitis treatment

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The effectiveness of active pharmaceutical ingredients (APIs) depends on many factors and the most important of them is the basis, which must be optimally selected. The basis for suppositories can speed up or slow down the process of API release, actively affect the speed and duration of pharmacological action. It acts as a carrier and is in contact with the API and the vaginal mucosa. The basis should not interact with API, ie be indifferent and should not affect the patient's body. Therefore, the choice of the basis for obtaining vaginal dosage forms, namely suppositories is an important part of this work.

When choosing the basis, we also took into account the specifics of the application of the developed vaginal suppositories - non-specific vaginitis, associated with abundant yellow or greenish-yellow discharge with an unpleasant odor. It is known that polyethylene glycol bases possess the following qualitative characteristics: chemical indifference, thermal stability, absence of polymorphic modifications, and tolerance to changes in pH. Unlike lipophilic bases, hydrophilic ones have very good moisture-absorbing properties which are best suited for use in significant discharge from the urogenital organs. They are well soluble in water, which ensures their complete solubility in the secretions of mucous membranes.

The aim of our work was to choose the optimal suppository base proceeding from microbiological studies. For the study we prepared 3 samples of suppositories on hydrophilic suppository bases: sample No. 1- PEG-1500 and PEG -400 (90:10), sample No. 2 PEG-1500 and PEG -400 (95:5), sample No. 3, Proxanol 268, propylene glycol and PEG-400 (42:35:23) with a constant content of active pharmaceutical ingredients: 0.2 g of decamethoxine, and 0.1 g of dry aloe leaf extract. Prepared samples of the dosage form were stored in a refrigerator (5 ± 3 ° C). Antimicrobial activity was determined immediately after sample preparation. All studies were performed under aseptic conditions, using laminar boxing. Pure cultures were used as test cultures: gram-positive microorganisms *Staphylococcus aureus* ATCC 25293, spore culture of *Bacillus subtilis* ATCC 6633, gram-negative cultures *Escherichia coli* ATCC 25922 and *Pseudomonas aeruginosa* ATCC 27853, as well as fungal cultures: yeast fungus of the genus *Candida* - *Candida albicans* ATCC 885-653. The data obtained during the study are shown in Figure 1.

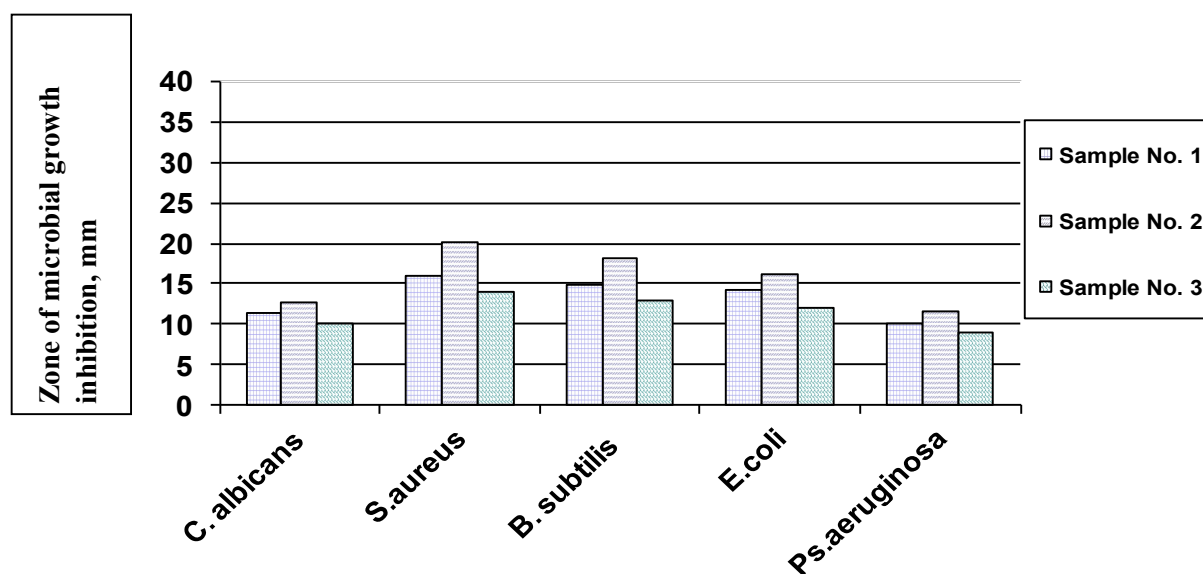


Figure 1. The results of determining the antimicrobial activity of samples of vaginal suppositories on different hydrophilic bases.

The data obtained during the experiment indicate that the studied sample of suppositories No. 2 shows the highest activity against all used cultures in comparison with samples No. 1 and No. 3. Sample No. 3 showed the weakest antimicrobial

activity. The study showed that the most promising for further development of the composition and technology of vaginal suppositories for the treatment of nonspecific vaginitis is sample No. 2 - suppositories based on PEG-1500 and PEG-400 (95: 5).

Variant of regulation of biological activity of surfactants under cultivation of *Acinetobacter calcoaceticus* IMV B-7241 on glycerol of various degrees of purification

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It was previously established that *Acinetobacter calcoaceticus* IMV B-7241 synthesizes a complex of surfactant amino- and glycolipids on a wide range of carbon substrates, including glycerol of various degrees of purification. The aim of this work was to study the biological activity of surfactants synthesized by *A. calcoaceticus* IMV B-7241 in medium with glycerol of various degrees of purification and high content of calcium cations (activators of NADH⁺-dependent glutamate dehydrogenase – key enzyme of biosynthesis of surface-active aminolipids responsible for antimicrobial activity of surfactant complex).

The main object of research was a strain of oil-oxidizing bacteria, identified as *Acinetobacter calcoaceticus* K-4, from an oil-contaminated soil sample. Strain *A. calcoaceticus* K-4 is registered in the Depository of Microorganisms of the D.K. Zabolotny Institute of Microbiology and Virology of the National Academy of Sciences of Ukraine under the number IMV B-7241. Strain *A. calcoaceticus* IMV B-7241 was grown in the medium (g/l): (NH₂)₂CO – 0.35; MgSO₄ · 7H₂O – 0.1; NaCl – 1.0; Na₂HPO₄ – 0.6; KH₂PO₄ – 0.14; pH 6.8–7.0. Yeast autolysate – 0.5% (v/v) and microelement solution – 0.1% (v/v) were additionally added to the medium. The micronutrient solution contained (g/100 ml): ZnSO₄ · 7H₂O – 1,1; MnSO₄ · H₂O – 0.6; FeSO₄ · 7H₂O – 0.1; CuSO₄ · 5H₂O – 0.004; CoSO₄ · 7H₂O – 0.03; H₃BO₃ – 0.006; KI – 0.0001; EDTA (Trilon B) – 0.5. Cultivation of *A. calcoaceticus* IMV B-