



VI Міжнародна науково-практична конференція

# ПРОБЛЕМИ ТА ДОСЯГНЕННЯ СУЧАСНОЇ БІОТЕХНОЛОГІЇ

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The results show that the use of yeast extract and mineral supplements in combination with intensive movement stimulates the synthesis of structural polysaccharides. The combination of the stages of 8-day surface and 7-day deep cultivation on GPA medium with the use of laboratory shakers is an effective algorithm for obtaining biologically active raw materials. The development and optimization of biomass cultivation conditions allows obtaining biomass with a high content of targeted  $\beta$ -glucans, which opens up prospects for the creation of new nutraceutical drugs.

**Development of the composition of chewable tablets based  
on dry extracts for urological use**

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Modern pharmacy is actively introducing dosage forms based on natural raw materials. In particular, chewable tablets (CT) are a promising dosage form due to their ease of use and rapid therapeutic effect.

The development of chewable tablets based on plant extracts requires careful selection of excipients, as this stage is decisive for the quality of the finished product. The correct combination of components ensures not only optimal physicochemical parameters, but also the targeted bioavailability of the active compounds.

For the development of chewable tablets, dry extracts of oxycoccus and salvia, which are traditionally used in folk medicine for the treatment of cystitis, were selected as active pharmaceutical ingredients.

The transformation of the therapeutic potential of extracts into a finished industrial product is possible only if stable dosage forms are developed. Preserving the biological activity of substances during production and storage remains the key task in this case.

The main goal of the study is to develop the optimal composition of chewable tablets based on dry extracts through rational selection of excipients. For this purpose, it was necessary to study the technological properties of various excipients

that can be used for the production of chewable tablets. Studies of the pharmaceutical properties of dry extracts of oxycoccus and salvia have shown their unsatisfactory flowability and compressibility, which indicates the need to introduce excipients into the composition of the solid dosage form.

Based on the conducted research, the following excipients were introduced into the composition of the CT – Pearlitol®-DC as a rational filler and stearic acid as a lubricant.

### **Prospects for developing a cream with probiotic and prebiotic components**

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**Introduction.** Modern dermatocosmetology considers the skin as a complex ecosystem, the state of which directly depends on the balance of its microbiome. Dysbiosis of the skin leads to the development of acne, dermatitis and premature aging. The use of synbiotic compositions (a combination of probiotics and prebiotics) in creams allows not only to maintain the protective barrier, but also to stimulate regenerative processes at the cellular level. This opens up wide opportunities for the creation of therapeutic cosmetics with a targeted effect on the epidermal microflora.

The purpose of our study was to select components and explore the prospects for developing a cream formulation enriched with probiotic bacteria lysates and plant prebiotics to restore the skin's barrier function. The objects of the study were lysates of bacteria of the genus *Lactobacillus* and *Bifidobacterium*, as well as prebiotic components (inulin, alpha-glucan oligosaccharide). The analysis of effectiveness was carried out by studying the effect of the components on the adhesion of pathogenic microflora in vitro and assessing the stability of emulsion systems.

As a result of theoretical and experimental studies, it was found that the optimal use is not of live cultures (which creates difficulties in preservation), but of their lysates (lactobacilli lysate). They contain fragments of cell walls and cytoplasm, which act as signaling molecules for the skin's immune system.