МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ’Я УКРАЇНИ
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КАФЕДРА ФІЗИЧНОЇ РЕАБІЛІТАЦІЇ І ЗДОРОВ’Я

VIII науково-практична internet-конференція
з міжнародною участю

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MINISTRY OF HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY
DEPARTMENT OF PHYSICAL REHABILITATION AND HEALTH

VIIIth scientific and practical
internet-conference for the international participation

«MECHANISMS OF PATHOLOGICAL PROCESSES DEVELOPMENT AND DISEASES, THEIR PHARMACOLOGICAL CORRECTION»

October 20, 2025
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Укладачі: доц. Селюкова Н. Ю.

Посвідчення № 848 Державної наукової установи «Український інститут науково-технічної експертизи та інформації» від 26.12.2024 р.

Механізми розвитку патологічних процесів і хвороб та їх фармакологічна корекція : матеріали VII науково-практичної internet-конференції з міжнародною участю, м. Харків, 20 жовтня 2025 р. Х. : НФаУ, 2025, 258 с.

Збірник містить матеріали VIII науково-практичної internet-конференції з міжнародною участю «Механізми розвитку патологічних процесів і хвороб та їх фармакологічна корекція». В матеріалах конференції розглянуто сучасні проблеми медицини і фармації: молекулярні основи патології, клітинні та гуморальні механізми розвитку захворювань; роль генетичних факторів у патогенезі захворювань; механізми розвитку патологічних процесів і хвороб; вікова патофізіологія; проблемні аспекти хвороб цивілізації; клінічна патофізіологія; питання викладання патофізіології; експериментальна терапія найбільш поширених захворювань; фармакологічна корекція патологічних процесів; проблеми та перспективи створення лікарських препаратів різної спрямованості дії; інформаційні технології і автоматизація наукових досліджень з розробки лікарських засобів; створення нутрицевтичних засобів та виробів медичного призначення; маркетингові дослідження сучасного фармацевтичного ринку; нанотехнології у фармації; таргетна терапія захворювань людини; трансляційна медицина; новітні технології діагностики та лікування; біомедичні технології; вплив сучасних технологій на здоров’я людини; актуальні питання фізичної реабілітації та сучасні технології збереження здоров’я людини; ментальне здоров’я та інновації у медико-психологічній реабілітації військовослужбовців в умовах воєнного стану; глобальні проблеми громадського здоров’я.

Для широкого кола наукових і практичних працівників медицини та фармації.

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Compilers: assoc. prof. Seliukova N. Yu.

Certificate № 848 of the State scientific organization «Ukrainian Institute of Scientific and Technical Expertise and Information» dated 26.12.2024.

Mechanisms of pathological processes development and diseases, their pharmacological correction: collected papers of to the VIIIth scientific and practical internet-conference for the international participation, Kharkiv, October 20, 2025. Kh.: NUPh, 2025, 258 p.

Collected papers includes the materials of VIIth scientific and practical internet-conference for the international participation «Mechanisms of pathological processes development and diseases, their pharmacological correction». The modern problems of pathophysiology were considered the materials of the Conference: molecular basis of pathology, cellular and humoral mechanisms of disease development; role of genetic factors in the pathogenesis of diseases; mechanisms of pathological processes and diseases development; age-related pathophysiology; problematic aspects of the diseases of civilization; clinical pathophysiology; issues of pathophysiology teaching; experimental therapy of the most common diseases; pharmacological correction of pathological processes; problems and prospects for the development of medicines with different orientation of action; information technology and automation of scientific research on drug create; development of nutraceutical drugs and products for medical purpose; marketing research of the modern pharmaceutical market; nanotechnology in pharmacy; targeted therapy of human diseases; translational medicine; the latest diagnostic and treatment technologies; biomedical technologies; impact of modern technologies on human health; current issues of physical rehabilitation and modern technologies for preserving human health; mental health and innovations in medical and psychological rehabilitation of military personnel under martial law; global public health issues.

For a wide audience of scientific and practitioners of medicine and pharmacy.

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ЗМІСТ

ASSESSMENT OF STUDENT AWARENESS ON HYGIENIC PRACTICES IN PROBIOTIC COSMETICS USE

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Introduction. Over the past few decades, there has been a growing interest in studying the effect of beneficial microorganisms on skin health. The modern cosmetics market offers a wide range of probiotic products, which have become widely used in cosmetology thanks to their unique composition and diverse biological properties. Probiotics have proven anti-ageing, whitening, anti-inflammatory and photoprotective effects, making them a promising area of dermatocosmetology.

At the same time, expanding the probiotic cosmetics market raises the issue of compliance with hygiene standards when using them, since improper storage and application conditions can reduce the effectiveness of such products and pose risks to consumer health.

The study aims to summarise current scientific data on the hygienic aspects of using probiotic cosmetics and assess students' level of awareness regarding the rules for choosing, storing, shelf life, frequency of use and safety measures when using such products.

Materials and methods. An analysis of scientific publications in domestic and foreign professional journals devoted to the composition, mechanism of action, and hygienic aspects of probiotic cosmetics was conducted. An online survey was conducted using a proprietary questionnaire on the Google Forms platform (by Order No. 58-adm. "On the organisation of social research by higher education students at the Department of Hygiene and Ecology" of 04.02.2025) to assess students' awareness levels. Sixty-three respondents aged 18 to 55 participated in the study. The data obtained were subjected to statistical processing.

Results. According to the FDA (USA) definition, cosmetics are products used to clean, improve, or change the human body's appearance (except pure soap). A probiotic is defined as a live microorganism that provides health benefits to the host when administered in sufficient quantities. An effective probiotic product must be scientifically characterised, contain viable strains in clinically proven quantities, and its application method must be substantiated by research. For safety reasons, the microbiological load of cosmetic products should be moderate: less than 500 CFU/g for eye products and less than 1000 CFU/g for other products.

Probiotics have several beneficial properties for the skin: they can reduce inflammation, influence the course of dermatological diseases, protect against allergic contact dermatitis, improve the skin's barrier function, promote water absorption and slow the ageing process. The results of the survey confirm the positive effect of probiotic cosmetics: 33.3% of respondents noted an overall improvement in skin condition, 23.8% noted a reduction in redness and signs of inflammation, and 12.7% noted a reduction in the severity of wrinkles and an improvement in skin texture.

Modern cosmetics for skin and hair care (face creams, moisturisers, toners, shower gels, shampoos, masks) do not use live bacteria, but their inactivated forms, cell wall particles or metabolites. It is due to the impossibility of stable storage of viable microorganisms in cosmetic formulas. Most manufacturers use probiotic extracts that retain biological activity without the risk of unwanted microbial growth.

Probiotic cosmetics often include prebiotics (oligosaccharides, galacto-oligosaccharides, fructo-oligosaccharides), which serve as a substrate for the growth of beneficial bacteria in the skin microbiome and prevent colonisation by pathogenic microorganisms. Bacteriocins, metabolites of probiotics (products of lactobacillus fermentation and yeast fermentation extracts), are also promising components, characterised by high stability, heat resistance and resistance to pH fluctuations.

Currently, lactobacilli are the most common ingredient in probiotic cosmetics. The market for such products shows a steady upward trend, indicating growing consumer demand for cosmetics that support the skin's natural microbiome.

The survey results confirm consumer interest in probiotic cosmetics, but reveal specific gaps in knowledge about their composition. Thus, 36.5% of respondents believe that such products contain probiotic extracts (lysates, metabolites), 28.6% believe they contain live beneficial bacteria, 22.2% believe they contain prebiotics, and 12.7% admitted that they are not familiar with the composition of such products.

The effectiveness of probiotic cosmetics largely depends on compliance with storage conditions and hygiene standards of use. Even inactivated bacteria, extracts or metabolites can lose their biological activity due to high temperatures, excessive humidity or external contamination. Analysis of the survey results revealed insufficient compliance with storage recommendations: only 22.2% of respondents store cosmetics in a cool place or refrigerator per the manufacturers' instructions. Instead, 11.1% keep their products at room temperature, and 14.3% keep them in the bathroom, where high humidity and temperature fluctuations can negatively affect the stability of probiotic components. On a positive note, respondents are aware of the potential risks of not following hygiene guidelines. They consider the most significant threats to be a decrease in the product's effectiveness (65.1%) and the growth of unwanted microorganisms in the product (63.5%), demonstrating an understanding of the characteristics of probiotic formulas and the potential risks of microbial contamination.

Conclusions. Probiotic cosmetics are a promising area in dermatocosmetology due to their restorative and protective properties, ability to improve skin condition and prevent inflammatory processes.

However, the realisation of the therapeutic potential of such products largely depends on consumer awareness: failure to comply with storage conditions, which, according to the survey results, leads to reduced effectiveness and the risk of microbial contamination, is the main limiting factor.

Further scientific research and improvements in production technologies will allow the creation of more stable, effective and safe formulas for probiotic cosmetics. At the same time, it is necessary to raise consumer awareness of the rules for using such products, namely:

– storage in accordance with the manufacturer's instructions (usually at a temperature of 5-25°C, in a dry place);

– avoiding contact with water and humid air;

– using clean applicators or spatulas to collect the product;

– checking the expiry date after opening the package;

– immediately discontinuing use if the product's colour, smell or consistency changes.

Keywords: probiotics, cosmetics, microorganisms, skin, microbiome, bacteriocins, lactobacilli, lysates, metabolites, hygiene.