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спеціальностей / [С. І. Баранник, В. П. Стусь, М. В. Трофімов та ін.]. *Медичний форум*. 2017. № 11(11). С. 5–8.

2. Мунтян С. О. Деякі аспекти виховної роботи на хірургічній кафедрі / С. О. Мунтян, С. І. Баранник, В. М. Барвінський, Г. Ю. Хапатьяко. *Вісник Вінницького національного медичного університету*. 2004. № 8(1). С. 136–137.

3. Стусь В. П. Фазисні ситуаційні завдання в формуванні професійної компетентності спеціаліста за фахом «урологія» / [В. П. Стусь, В. В. Єхалов, М. М. Моїсеєнко, Баранник С. І.]. *Урологія*. 2017. Т. 21, № 1(80). С. 91–95.

STUDY OF BIOTECHNOLOGY AS A COMPONENT OF THE HIGH-QUALIFIED PERSONNEL TRAINING SYSTEM FOR PHARMACY AND BIOENGINEERING

Butkevych T. A.

*Candidate of Pharmaceutical Sciences,
Assistant at the Department of pharmacy
and industrial technology of drugs,
Bogomolets National Medical University
Kyiv, Ukraine*

System for training highly qualified personnel in pharmacy and biotechnology in Ukraine is based on educational and professional programs (EPPs) at the bachelor's and master's levels. At the Bogomolets National Medical University, relevant knowledge in biotechnology is formed within the following EPPs: «Pharmacy» (second (master's) level of higher education) in the field of knowledge I Health Care and Social Welfare, specialty I8 Pharmacy; as well as «Biotechnology and Bioengineering» (first (bachelor's) level

of higher education) and «Industrial and Pharmaceutical Biotechnology» (second (master's) level of higher education) in the field of knowledge G Engineering, Manufacturing and Construction, specialty G21 Biotechnologies and Bioengineering.

A competence-based approach to developing these programs ensures the achievement of specific learning outcomes. The educational process for each specialty includes a set of disciplines aimed at forming relevant professional competencies and qualities, guaranteeing a high level of theoretical and practical training. Curricula content is systematically updated in line with modern scientific trends. However, there are fundamental differences between specialties I8 and G21 both in the list and depth of professional disciplines, due to different priorities in the graduates' professional activities. In particular, within the program of specialty I8, the biotechnological component is represented by only one discipline – «Pharmaceutical Biotechnology». This is insufficient, given that biotechnologically derived medicines hold a significant share of the global pharmaceutical market. Such medicinal products are characterized by unique approaches to development, preclinical and clinical trials, as well as registration procedures and pharmacovigilance, which significantly distinguish them from synthetic or plant-derived drugs.

Modern biotechnological products are no longer limited to vaccines, monoclonal antibodies, recombinant hormones, interferons, thrombolytics, etc. They also include components of diagnostic systems, innovative cosmetic products used in dermatology, and, most importantly, form the basis for cell and gene therapy, tissue engineering, and biomaterials. These very areas represent the most modern and promising frontiers in medical biotechnology. These contemporary trends constitute a significant part of the content within the professional disciplines of specialty G21, although its scope is not limited to medical and pharmaceutical applications. Given that

biotechnology is one of the leading sciences of the 21st century, integrating certain key competencies from the EPP of specialty G21 into the EPP of specialty I8 could significantly enhance the quality of training for future pharmacists and their competitiveness. Currently, the educational process is complicated by the challenges of martial law, problems with the energy supply of educational buildings due to russian aggression, among other factors. Under these conditions, the priority for higher education institutions is to find effective ways to organize learning. Key strategies include developing distance learning formats, implementing dual education models, and ensuring practical training at leading pharmaceutical and biotechnological enterprises.

Thus, to improve the level of pharmacist training in modern conditions, where innovative biopharmaceuticals play a key role, it is advisable to strengthen the educational and professional program of specialty I8 Pharmacy by integrating certain key competencies from the related program G21 Biotechnologies and Bioengineering. This integration, aimed at deepening knowledge about the specifics of biotechnological medicines, should be implemented in parallel with the intensification of the use of distance learning technologies, expanding dual education, and enhancing the practical training component. Such a comprehensive approach will help overcome objective difficulties and ensure practice-oriented training of specialists capable of working effectively with cutting-edge biotechnological products.