

**THEMATIC PLAN OF LECTURES
PHARMACEUTICAL BIOTECHNOLOGY**
*for the 5th year students of the Faculty of Pharmacy
IX semester 2023 – 2024 academic year*

Approved at Department meeting
Protocol №1, 31.08.2023

№	Date	Topic	Lector
1.	07.09	Pharmaceutical biotechnology as an integral part of biotechnology. Bioobjects and methods of biotechnology. The main stages of the biotechnological process	prof. Svitlana BILOUS
2.	21.09	Biotechnological drugs obtained by microbial synthesis. Antibiotics, probiotics, bacteriophages and preparations of metabolites of microorganisms	prof. Svitlana BILOUS
3.	05.10	Immunobiological drugs (vaccines, serums, immunoglobulins) and blood products. General characteristics and technological aspects of obtaining	prof. Svitlana BILOUS
4.	19.10	Biotechnological drugs obtained by methods of cell technology and genetic engineering	prof. Svitlana BILOUS

**THEMATIC PLAN OF PRACTICAL CLASSES
PHARMACEUTICAL BIOTECHNOLOGY**

№	Date	Topic	Hours
1.	05.09	Pharmaceutical biotechnology as an integral part of biotechnology. Basic terms of pharmaceutical biotechnology	2
2.	12.09	Bioobjects and the main stages of the biotechnological process	2
3.	19.09	Regulatory documents regulating the production of medicines by biotechnology methods	2
4.	26.09	Biotechnological production of antibiotics	2
5.	03.10	Technology of probiotics and bacteriophages	2
6.	10.10	Biotechnological production of preparations of metabolites of microorganisms - amino acids and vitamins	2
7.	17.10	Biotechnological production of enzymes	2
8.	24.10	Biotechnological production of hormones	2
9.	31.10	Immunobiological medicines. Vaccines. Serums. Immunoglobulins and diagnostics based on them	2
10.	07.11		2
11.	14.11	Production of blood products. Blood plasma. Blood plasma proteins	2
12.	21.11		2
13.	28.11	Biotechnological production of medicinal plant raw materials	2
14.	05.12	Excipients obtained by biotechnological methods. Antimicrobial preservatives and surfactants. Production of ethanol	2
15.	12.12	Biosimilars. Features of quality control methods of biotechnological medicines	2
			30

**QUESTIONS FOR SELF-EDUCATION
PHARMACEUTICAL BIOTECHNOLOGY**

№	Topic	Hours
1.	Producers of biologically active substances, requirements for producers	5
2.	Regulatory documents of pharmaceutical biotechnology	6
3.	Cellular and genetic engineering, their essence and practical use	5
4.	Classification of antibiotics by the nature of the action on the bacterial cell	5
5.	Obtaining finished dosage forms of antibiotics. Quality parameters of antibiotics	5
6.	Species composition of normal intestinal microflora in different periods of human life and its functions	5
7.	Biological role of vitamins, their classification and function	5
8.	Hormones, types of their classifications and functions	5
9.	Types of immunity. Immunogenic drugs for creation artificial active and passive immunity	5
10.	Fluids of the internal environment of the body. Homeostasis. Blood composition.	6
Total:		52

Head of the Department
of Drug Technology and Biopharmaceutics

prof. Svitlana BILOUS