

**Thematic lesson plan of seminar type lecture
in the discipline “ Immunobiological and gene therapy drugs”
for students in the specialty educational program specialty 33.05.01
Pharmacy, focus (profile) Pharmacy, Full-time form of education for the
2024-2025 academic year**

№	Thematic plan of lecture	Hors
1.	Biological medicinal products. Classification, application in medicine. General requirements for the production of biological medicinal products. Immunobiological medicinal products.	2
2.	Immunobiological drugs. Classification, immunological bases of vaccination. Vaccines, serums, toxoids and immunoglobulins	2
3.	Medicines obtained from blood, blood plasma of humans and animals. History of development and use. Viral safety.	2
4.	Biotechnological drugs. Insulins	2
5.	Recombinant drugs: monoclonal antibodies. 1 History of development, classification, modern significance. Application in rheumatology, oncohematology.	2
6.	Gene and cell therapy – as a new direction in medicine. The principle of action. Prospects in the treatment of congenital and hereditary diseases, oncopathology.	2
7.	Vectors as carriers for gene delivery. Basic types and principles of vector action.	2
8.	Gene therapy drugs. Nomenclature (gene therapy drugs, cell therapy drugs, cell-based gene therapy drugs and virus-based therapy drugs).	2
9.	Preclinical development of gene therapy drugs. Regulatory documents. Strategy. Experimental models. Potential risks when using gene therapy drugs. Toxicity.	2
	Total	18

1 – topic

2 – essential content

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