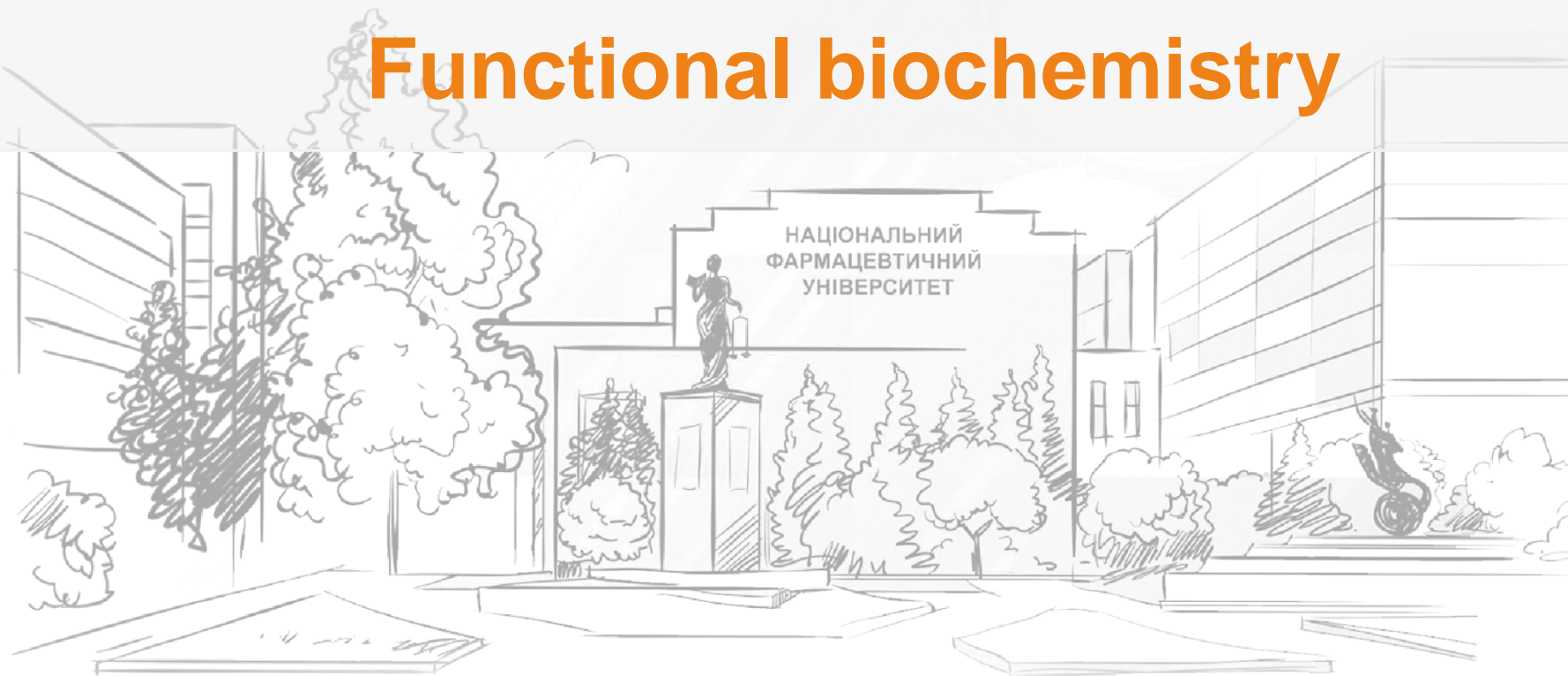




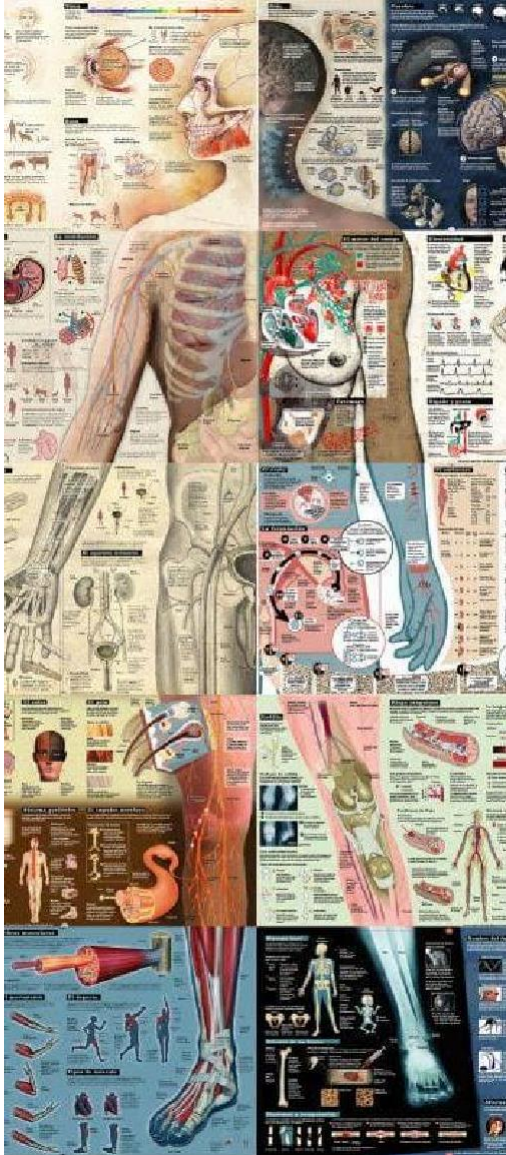
MINISTRY OF HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY

DEPARTMENT OF CLINICAL LABORATORY DIAGNOSTICS,
MICROBIOLOGY AND BIOLOGICAL CHEMISTRY

Functional biochemistry



2024/2025 academic year



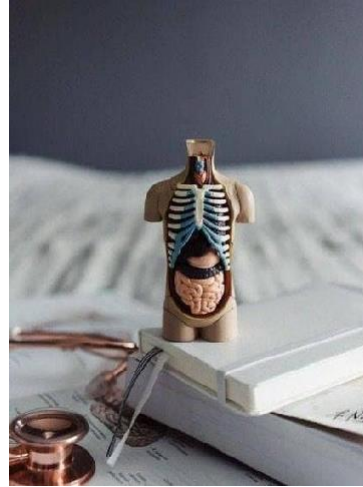
What does functional biochemistry study?

- ✓ features of metabolic processes in different organs and tissues of the human body;
- ✓ a functional state markers under normal and pathological conditions;
- ✓ directions of their pharmacological correction with the medicines.

Functional biochemistry: main information about the subject



Medical and biological building of the NUPH



Who can study this elective subject?

- For 3rd year students (5th semester).

Where subject is taught?

- Department of Biological chemistry and Veterinary medicine (medical and biological building of the National University of Pharmacy, Kulykivska st., 12).

Hours per semester

- 3 credit ECTS (90 hours).



Aims and objectives of the subject functional biochemistry

The aim of the subject – specialists training in a pharmaceutical industry who have a significant amount of theoretical and practical knowledge about:

- ✓ biochemical basis of life, in particular, the molecular basis of a general biochemical processes in different organs and tissues (liver, kidneys, heart, etc.);
- ✓ patterns of the organism functioning;
- ✓ the main directions of pathological states pharmacological correction.

The main objectives of the subject:

- ✓ the analysis of biochemical metabolic processes in individual tissues;
- ✓ the role of these processes in ensuring the functioning of individual organs and the organism;
- ✓ modern methods of normal and pathological components in biological liquids detection for diseases diagnosis.



What will be the result after the functional biochemistry course completing?



- matching between the biomolecules structure and their biochemical functions;
- biochemical and molecular basis of physiological cell functions, organs and systems of the human organism;
- how to interpret the results of laboratory assessments and explain the biochemical mechanisms of pathological processes development in the human body and the principles of their pharmacological correction;
- the main regularities of the rational use of medicines in accordance with the biochemical characteristics of a specific disease.

The role of functional biochemistry in future pharmacists professional development



study of the molecular basis of the biochemical processes in individual organs and tissues

- understanding of the conditions necessary to maintain the physiological state of the organism;
- understanding causes of disorders that lead to diseases development;
- background for new medicines development.



study of the functional state markers of individual organs and tissues (enzymes, transport proteins etc.)

- interpretation of laboratory assessments;
- detection of organism state;
- differential diagnostic of diseases;
- basis for laboratory diagnostic, clinical pharmacy and pharmacology studying.



study of biomolecules structure, main functions and their role in biochemical processes, their interaction with each other and with xenobiotics

- understanding of medical targets;
- detection of rational pharmacotherapy strategy;
- prediction of medicines side effects;
- basis for pharmacology, pharmaceutical chemistry, pharmaceutical care, pharmacotherapy studying.

Thanks for your attention and sincerely wish you success in your studies!

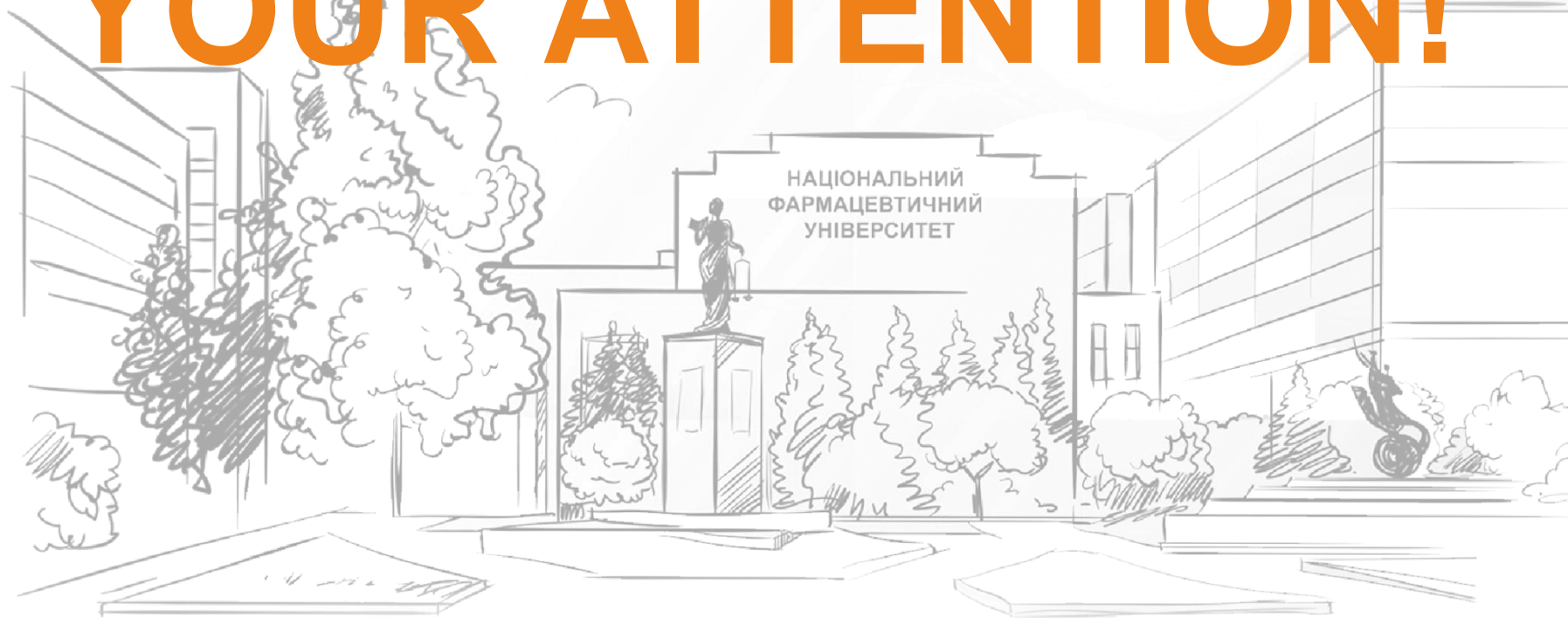


**KEEP
CALM
AND
STUDY
BIOCHEMISTRY**

- We hope that studying of subject “Functional biochemistry” will be useful and interesting for you, and this knowledge help you to become a true professional in pharmacy!
- **Contact information:** Department of Biological chemistry and Veterinary medicine, Kulykivska st., 12 (medical and biological building of the NUpH). Tel. (057)706-30-99.
web-site:
<https://biochem.nuph.edu.ua/>



THANK YOU FOR YOUR ATTENTION!



National University of Pharmacy
53 H. Skovorody str. (Pushkinska str.), Kharkiv, 61002, Ukraine

E-mail: mail@nuph.edu.ua
<https://nuph.edu.ua>