ФАРМАЦЕВТИЧЕН ФАКУЛТЕТ
МЕДИЦИНСКИ УНИВЕРСИТЕТ - СОФИЯ

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Approved by the Faculty Council with protocol № 7/ 10.07.2024

Dean:

(Prof. A. Zlatkov, PhD, DSc)

SYLLABUS

FOR THE COURSE „BIOPHARMACY AND PHARMACOKINETICS “

DEPARTMENT OF PHARMACEUTICAL TECHNOLOGY AND BIOPHARMACEUTICS

DEPARTMENT OF CHEMISTRY

Included in the curriculum of the specialty: **Pharmacy**

Degree of education: **Master**

Credits (ECTS): **10**

ANNOTATION

The course in biopharmacy explores the main principles of biopharmacy and their applications in pharmaceutical practice. The main topics of this course are biopharmaceutical aspects of oral, pulmonary, nasal, cutaneous, rectal, vaginal, ophthalmic, oral transmucosal and parenteral drug delivery. Special attention is paid to the role of pharmaceutical factors – drug properties, types of excipients, specificity of the dosage form and technology of preparation. The course in pharmacokinetics includes kinetics after single and multiple-dose administration, intravenous infusion, dosage regimens, individualization and optimization of dosage regimens, distribution of drugs in the body, protein binding of drugs, elimination of drugs, pharmacokinetics of main pharmacological drugs.

SYLLABUS

1. Biopharmacy - introduction and definitions.
2. Biopharmaceutical classification system.
3. Dissolution test. *In vitro/in vivo* correlations.
4. Biopharmaceutical aspects of oral drug delivery.
5. Biopharmaceutical aspects of ophthalmic drug delivery.
6. Biopharmaceutical aspects of nasal drug delivery.
7. Biopharmaceutical aspects of drug delivery to lungs.
8. Biopharmaceutical aspects of cutaneous application.
9. Biopharmaceutical aspects of rectal application.
10. Biopharmaceutical aspects of vaginal application.
11. Biopharmaceutical aspects of parenteral drug delivery.
12. Biopharmaceutical aspects of oral transmucosal drug delivery.
13. Pharmacokinetic processes.
14. Single dose administration of drugs.
15. Non-compartmental analysis.

16. Nonlinear pharmacokinetics.
17. Intravenous infusion.
18. Multiple dose administration of drugs.
19. Dosage regimens.
20. Drug absorption.
21. Drug distribution.
22. Plasma protein binding.
23. Drug elimination.
24. Pharmacokinetics of the main pharmacological groups.
25. Pharmacokinetics and drug design.

Program authors:

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Heads of the Departments:

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