Level: bachelor

Course title: Medicinal Chemistry (B-404)

Status: obligatory

ECTS: 9

Requirements: none

Learning objectives

Acquiring the basic methods and biochemical principles relevant to the development, processing and biological testing of new pharmacologically active molecules – potential drugs.

Learning outcomes

Students will be able to identify structural features essential for the pharmacological activity of potential drugs and to understand their biological effects on the molecular level.

Syllabus

Theoretical instruction

Methods and objectives of medical chemistry. A brief overview of ligand-receptor interactions that are important for pharmacological effects of drugs at the molecular level. The general stages in drug discovery and design. Leads and analogues: some desirable properties. Sources of leads and drugs. Methods and routes of administration: the pharmaceutical phase. Introduction to drug action. Classification of drugs. Prodrugs. Stereochemistry and drug design. Solubility and drug design: solubility and the structure of the solute; salt formation; the incorporation of water solubilising groups in a structure. Partition. Structure-activity relationship (SAR): changing size and shape; introduction of new substituents; changing the existing substituents of lead. Quantitative structure-activity relationship (QSAR). Introduction to computer-aided drug design.

Practical instruction

In accordance with theoretical instruction.

Weekly teaching load				Other:
Lectures: 3	Exercises: 3	Other forms of teaching: 1	Student research:	