Level: PhD

Course title: Selected Topics of Medicinal Chemistry (DSB602)

Status: elective

ECTS: 15

Requirements: none

Learning objectives

Acquaintance with advanced chemical, biochemical and biomedicinal methods for the development, processing and in vitro testing of new pharmacologically active molecules as potential drugs.

Learning outcomes

The student will be acquainted with modern methods of drug design and production, and will become able to understand the mechanism of their action on the molecular level. The basic practical skills on experimental techniques for testing of antitumour activity in vitro will also be acquired.

Syllabus

Theoretical instruction

Current strategies for the development of new pharmacologically active molecules. Development of enzyme inhibitors as drugs: rational selection of suitable target enzyme and inhibitor; selectivity and toxicity; rational design of enzyme inhibitors (including computer-aided methods); development of a drug candidate from the bench to the marketplace. Enzyme inhibitor examples for the treatment of breast and prostate cancer. HIV-1 protease drug development examples. Analogues, derivatives and mimetic of monosaccharides as potential drugs.

Practical instruction

Current biological methods for evaluation of antitumor activity in vitro. Molecular docking.

Weekly teaching load				Other:
Lectures: 5	Exercises:	Other forms of teaching:	Student research: 5	