Level: PhD

Course title: Biochemistry of natural polyphenolic compounds, DSB609

Status: elective

ECTS: 15

Requirements: none

Learning objectives

The aim of this course is to provide integrated knowledge of the metabolic fate, chemical structure and pharmacological and biological significance of phenolic compounds from plants. Introducing students to the latest laboratory and instrumental techniques used in chemical and biochemical studies of this class of secondary biomolecules.

Learning outcomes

Upon completion of the course, students are expected to demonstrate broad knowledge of chemical diversity, metabolic fate, distribution and role of phenolic compounds in the metabolism of plants and their pharmacological activities, biological availability and use in modern medicine. In addition, students will be able to use complex instrumental methods for biochemical and chemical analysis of complex mixtures of phenolic compounds.

Syllabus

Theoretical instruction

Biosynthesis of phenolic compounds and secondary transformation (hydroxylation, glycosylation, methylation, acetylating et al.). Catabolism of phenolics in plants, animals and microorganisms. Distribution and biological functions of polyphenols in plants. Pharamcological activities of plant phenolics and application in modern phytotherapy. Dietary polyphenols. The antioxidant properties of plant phenolics. Methods for isolation and separation of phenolics compounds. Instrumental techniques in analysis of phenolic compounds.

Practise (research project)

Independent student's laboratory work in the frame of scientific research project related to the study of the composition and biological activities of polyphenolic compounds in plants.

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