Level: PhD

Course title: Bioorganic Chemistry of Carbohydrates (DSB603)

Status: Elective

ECTS: 15

Requirements: None

Learning objectives

Acquiring new knowledge on the application of bioactive carbohydrates, their derivatives, analogues and model systems, for studying of fundamental biological processes.

Learning outcomes

Students will be trained to understand the fundamental mechanisms of biochemical processes and basic functions of complex biological systems, using modern chemical methods and selected synthetic molecules originating from carbohydrates.

Syllabus

Theoretical instruction

Bioorganic receptors for molecular recognition of carbohydrates. Exploitation of monosaccharides as convenient starting materials for the synthesis of complex targets bearing multiple stereogenic centres. Biologically active compounds containing carbohydrates and/or derivatives. Contemporary approaches towards the asymmetric synthesis of monosaccharides and related molecules. Combinatorial carbohydrate chemistry.

Practical instruction

Total synthesis of biologically active molecules by utilizing monosaccharides as chiral precursors. Molecular design of the selected bioorganic model systems.

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