

COURSE DESCRIPTION

Academic year: 2026/2027	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF.KChTL/01-Mgr-A/26	Course title: Bioorganic Chemistry
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning	
Number of credits: 2	
Recommended semester: 3.	
Educational level: I.II.	
Prerequisites:	
Recommended prerequisites: Recommendation: Organic Chemistry 1	
Course requirements: a) To prepare a seminar paper b) Pass the written test. For passing the exam it is required to achieve more than 60 % of the points. A: 92,00 % – 100,00 %; B: 84,00 % – 91,99 %; C: 76,00 % – 83,99 %; D: 68,00 % – 75,99 %; E: 60,00 % – 67,99 %; Fx: 0,00 - 59,99 %. Scale of assessment (preliminary/final): 20/80	
Learning outcomes: The basic aim of the course Bioorganic Chemistry lies in the understanding of biological processes at the level of organic reaction mechanisms and identifying the basic parameters that govern these processes. Bioorganic Chemistry then is to deal with the problems of living nature in which chemical factors play an important role.	
Class syllabus: Bioorganic Chemistry follows the course of Organic Chemistry. Due to the fact that biological objects represent complex systems, their study requires an interdisciplinary approach. The course in the form of lectures focuses on those areas of bioorganic chemistry which are related to the structure of biomolecules, their spatial arrangement and relationships to biological functions. The emphasis is not only on the compounds with dominant position in living objects, such as aminoacids, peptides, proteins, heterocyclic bases, mono- and polysaccharides, nucleotides and nucleic acids, lipids but also the knowledge of known mechanisms of chemical reactions taking place in a biological system. Watching the rules of creating of macromolecular structure of organisms and their mutual interactions also with other molecules belong to other areas to be studied by bioorganic chemistry. The detailed knowledge of the structure and chemical processes occurring in a biological system allows to create bio-analogical chemical systems operating on a similar principle as in living nature (biomembranes, enzymatic catalysis, etc...) for practical use.	

Recommended literature:

1. Devínsky F. et al. Organic Chemistry for Pharmacy Students. Comenius University Press, Bratislava, 2010
2. Van Vranken, D., Weiss, G.: Introduction to Bioorganic Chemistry and Chemical Biology, Garland Science 2013
3. McMurry, J.W., Begley, T.P.: The Organic Chemistry of biological Pathways, W. H. Freeman, 2nd ed., 2015
4. Voet D., Voet J.: Biochemistry, John Wiley & Sons, 3rd ed., 2004

Languages necessary to complete the course:

English language

Notes:

Subject is thought and examined only during the winter semester.

Past grade distribution

Total number of evaluated students: 0

A	ABS	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PharmDr. Jindra Valentová, PhD., Mgr. Lucia Lintnerová, PhD.

Last change: 11.06.2026

Approved by: prof. PharmDr. Ján Klimas, PhD., MPH