

<b>Level:</b> master			
<b>Course title:</b> Cell culture in biochemistry (IB-508)			
<b>Status:</b> elective			
<b>ECTS:</b> 6			
<b>Requirements:</b> none			
<b>Learning objectives</b> The goal of the course is to provide students with theoretical knowledge and practical skills in growing cell lines and cell culture applications in the study of biological activities of natural products. Furthermore, the goal of the course is developing students' ability to choose independently the appropriate methods and cell lines as a biological substrate for testing the biological potential of natural products.			
<b>Learning outcomes</b> By the end of this course, students will be able to (1) understand the use of different types of cell cultures in biochemical studies, (2) show creativity in selecting methods and cell lines as a biological substrate for testing the biological potential of natural products, (3) make their own conclusions about the possible mechanism of action of natural products in biological processes, depending on the results of tests in which they used different types of cell lines as a substrate, (4) recognize laboratory equipment and techniques for growing cell cultures, (5) independently apply the appropriate experimental procedures during work with cell cultures, (6) independently process data and critically present the results and conclude.			
<b>Syllabus</b> <i>Theoretical instruction:</i> The main types of cell cultures. Laboratory equipment for growing cell cultures. Working in sterile conditions. Types and selection of culture media for growing cells. Contamination of cell lines. Basic methods in growing cell cultures: transplantation, isolation, counting, determination of cell viability and cell preservation. The principle of selecting the appropriate cell lines for bioassays. Investigation of the effect of natural products on growth, proliferation, metabolism and apoptosis of cell cultures. Methods for monitoring cell responses. Selected examples of <i>in vitro</i> methods based on cell cultures as a biological substrate.  <i>Practical instruction:</i> Introduction to the laboratory for cell cultures and work in sterile conditions. Transplantation, isolation, counting, determination of cell viability and cell preservation. Growing cell cultures. Inducing inflammatory process in the cell lines. Monitoring the impact of plant extracts and isolated natural products on inflammatory cell response.			
<b>Weekly teaching load</b>			Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	