

Course code	IRL108		
Course title	NATURAL PRODUCTS AND THEIR APPLICATION IN PHARMACOLOGY		
General information			
Study programme	Graduate study „Drug research and development“, Graduate study „Biotechnology in medicine“, Graduate study „Medical chemistry“	Academic year	
Lecturer	Prof. Dr. Sc. Kristina Sepčić		
Status	Required	Elective	
ECTS system			5
Course objectives			
Using the selected examples, this course describes the process of identification and isolation of natural products from natural sources, their chemical synthesis, biological activities, ecological relevance and possible applications in the fields of pharmacology, biotechnology and biomedicine.			
Course description			
<p>Natural products: primary and secondary metabolites, distribution and biogenetic origin of natural products, their purification and main biological activities, importance of natural products for the organism that produces them, possibility of use of natural products in the fields of pharmacology, biomedicine and industry. Main examples of pharmacologically active natural products. Phases in natural products discovery and strategies for production of larger amounts of these compounds (chemical synthesis, cultures of cells and organisms, recombinant DNA technology).</p> <p>Special emphasis will be given to secondary metabolites isolated from marine organisms, mushrooms and moulds. Their isolation from natural sources, chemical synthesis, biological activities <i>in vitro</i> and <i>in vivo</i>, their ecological relevance and possible uses in biotechnology, pharmacology and biomedicine will be discussed.</p>			
Learning outcomes			
The exam is performed by writing a seminar paper on a chosen topic from the field of chemistry and pharmacology of natural products. The seminar is based on recent papers from this fields.			