

Subject card

Subject name and code	Marine Pharmacology_laboratory, PG_00166075						
Field of study	Marine Biotechnology						
Date of commencement of studies	October 2025		Academic year of realisation of subject			2025/2026	
Education level	Master's studies		Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
Mode of study	full-time studies		Mode of delivery			at the university	
Year of study	1		Language of instruction			English English	
Semester of study	2		ECTS credits			4.0	
Learning profile	academic		Assessment form				
Conducting unit	Laboratory of Marine Biotechnology -> Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Hanna Mazur Marzec				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	55.0	0.0	0.0	55
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	55		2.0		43.0	100
Subject objectives	Familiarizing with main methods used for activity and drugability assessment of drug candidates; Acquisition by students understanding of threats and ethical dilemmas related to in vivo assays						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[MBMU2-KK04] Is ready to assess and understand the risks and dilemmas, including ethical dilemmas associated with conducting scientific research and introduction of advanced technologies; understands and appreciates the importance of intellectual property; acts ethically		The students can evaluate the ethical dilemma related to clinical trials.		[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report		
	[MBMU2-KU01] Can plan and carry out tests in the laboratory and at sea, and document activities and results; can use laboratory equipment under the guidance of a tutor; applies principles of occupational health and safety		The student will be able to design and safely perform basic bioassays evaluating marine bioproducts as potential drugs and perform experiments with model organisms and microorganisms.		[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report		
	[MBMU2-KW04] Knows and deeply understands advanced research methods used in marine biotechnology and related sciences		The student will understand and will be able to describe the principles of advanced methods used to evaluate pharmaceutical potential of marine natural products, including toxicity, enzymatic, stability and activity assays, mammalian cell cultures, organoid cultures, nematode C. elegans, animal models.		[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report		

Subject contents	Familiarizing with main methods used for biological activity assessment and the assessment of pharmaceutical potential of marine natural products.		
Prerequisites and co-requisites	Knowledge about cell structure and functioning. Basic knowledge about marine natural products.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	activity during laboratories	51.0%	30.0%
	reports	51.0%	30.0%
	tests	51.0%	40.0%
Recommended reading	Basic literature	Schumacher Alexander, Hinder Markus, Gassmann Oliver, 2016. Value Creation in the Pharmaceutical Industry: The Critical Path to Innovation, Wiley-VCH, ISBN-10: 3527339132; ISBN-13: 978-3527339132 Tozer N. Thomas, Rowland Malcolm, 2006. Introduction to Pharmacokinetics and Pharmacodynamics: The quantitative basis of drug therapy. Lippincott Williams & Wilkins; ISBN-13 : 978-0781751490	
	Supplementary literature	Marine Pharmacology https://www.marinepharmacology.org/	
	eResources addresses	Supplementary https://www.marinepharmacology.org/ - The most updated data on marine drugs	
Example issues/ example questions/ tasks being completed	In vitro assessment of cytotoxic activity, enzymatic assays, antimicrobial activity, quorum quenching, assessment of drug stability under physiological conditions, selected ADME assays, effect on cytochrome P450 enzymes, from discovery to commercialization, principles of mammalian cell culture, principles of work with a model organism <i>C. elegans</i> , antiviral activity of marine bioproducts		
Work placement	Not applicable		

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