

Subject card

Subject name and code	Marine Pharmacology, PG_00166073						
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			1.0	
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	10.0	0.0	0.0	0.0	0.0	10
	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	10		1.0		14.0	25
Subject objectives	Acquisition by students knowledge on pharmaceutical potential of marine bioproducts and technologies used to evaluate their drugability, including bioassays applied at the research stage as well as the pre-clinical and clinical trials						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[MBMU2-KW04] Knows and deeply understands advanced research methods used in marine biotechnology and related sciences		Knows and understands the role of preclinical and clinical tests in development of new drug.			[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion	
	[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 student will be able to discuss and evaluate the hazards and ethical dilemmas related to the development of marine products as bio-pharmaceuticals.			[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written	
	[MBMU2-KW02] Has advanced knowledge of the possibilities of biotechnological use of marine resources		The student will possess knowledge about the pharmaceutical application of marine natural products.			[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion	
Subject contents	Principles of development of marine bioproducts as potential drugs. Rationale, advantages and disadvantages of different in vitro assays, cell-culture assays, organoids and model organisms. Purpose and stages of pre-clinical and clinical trials. Examples of drugs developed from marine bioproducts.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	51.0%	100.0%
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: Graham Patric., 2018. An Introduction to medicinal chemistry. Oxford University Press, UK, ISBN: 9780198796589	
	Supplementary literature	Selected articles from scientific journals e.g.: Marine Drugs (MDPI), Marine Biotechnology (Springer)	
	eResources addresses	Basic https://www.marinepharmacology.org/ - The website presents the latests issues related to marine pharmacology Supplementary https://www.mdpi.com/journal/marinedrugs - link to the website of the Marine Drug journal	
Example issues/ example questions/ tasks being completed	Pharmacokinetics, pharmacodynamics, ADME assays, preclinical and clinical trials, marine drugs		
Work placement	Not applicable		

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