

Subject card

Subject name and code	Application of in vitro methods in cosmetic research, PG_00183832						
Field of study	Wykorzystanie metod in vitro w badaniu kosmetyków (Ćw. laboratoryjne)						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group 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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Biological Sensitizers -> Department of Physical Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Magdalena Zdrowowicz-Żamojć				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		2.0		8.0	25
Subject objectives	The aim of the course is to introduce the basics of cell culture and to assess the cytotoxicity of selected cosmetic substances on keratinocytes/fibroblasts using the MTT assay.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_U03] Finds necessary information in specialist literature, databases and other sources, lists basic scientific journals in chemistry.	Searches for literature data on IC50 values of specific chemicals.	[SU2] prezentacja/projekt/referat/ raport
	[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.	Understands the types and significance of in vitro cytotoxicity tests used in the evaluation of cosmetic substances.	[SW2] prezentacja/projekt/referat/ raport
	[CHEMMU2_K02] Is able to undertake a variety of roles in the team, including supervisory ones.	Is able to work in a group and collaboratively prepare an analysis of the obtained results.	[SK2] prezentacja/projekt/referat/ raport
	[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	Applies knowledge of UV-VIS spectrophotometry.	[SU2] prezentacja/projekt/referat/ raport
	[CHEMMU2_U05] Presents the results of research in the form of an independently written paper containing a description and justification of the purpose of the work, adopted methodology, results and their significance in comparison to other similar research.	Prepares a report on the conducted MTT assay and compares the obtained results with literature data.	[SU2] prezentacja/projekt/referat/ raport
	[CHEMMU2_U01] Plans and implements chemical experiments of medium complexity.	Is able to design a cytotoxicity study of a chemical substance on a specific cell line using the MTT assay.	[SU2] prezentacja/projekt/referat/ raport
Subject contents	• preparation of cell cultures and compounds for in vitro studies • conducting in vitro cell culture • fibroblasts, keratinocytes • cytotoxicity assays • statistical analysis of biological research results		
Prerequisites and co-requisites	none		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory report	51.0%	100.0%
Recommended reading	Basic literature	Stanisława Stokłosowa, Hodowla komórek i tkanek. Jurzak, Magdalena, Anna Goździalska, Jerzy Jaśkiewicz, Bezpieczne stosowanie współczesnych kosmetyków.	
	Supplementary literature	Kumar, Priti, Arvindhan Nagarajan, and Pradeep D. Uchil. "Analysis of cell viability by the MTT assay." Cold spring harbor protocols 2018.6 (2018)	
	eResources addresses		
Example issues/ example questions/ tasks being completed	none		
Work placement	Not applicable		

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