University of Gdańsk

Subject card

Subject name and code	Preparation of biomolecules. Structure and function of proteins, PG_00053210						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2023		Academic year of realisation of subject	2025/2026			
Education level	Bachelor's studies		Subject group				
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	3		Language of instruction	Polish			
Semester of study	5		ECTS credits	3.0			
Learning profile	academic		Assessment form				
Conducting unit	Laboratory of Microbial Biochemistry -> Department of General and Medical Biochemistry -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dorota Kuczyńska-Wiśnik				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	45.0	0.0	0.0	45
	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	45		0.0	0.0	45	
Subject objectives	familiarizing students with methods of protein isolation from a natural source and isolation of recombinant proteins from various expression systems(						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GBEL3_U03] The graduate is able to: use research apparatus and tools and, following the correct sequence of operations, carry out simple physical, biological or chemical observations and measurements in laboratory work in the biological sciences	uses basic equipment and research tools and, while maintaining the correct sequence of activities, performs simple physical, biological or chemical observations and measurements in laboratory work in the field of biological sciences	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[GBEL3_U01] The graduate is able to: independently perform practical tasks in the biological and related sciences, formulate research problems, analyse their results and draw conclusions.	Is able to independently perform simple practical tasks in the field of biological and related sciences	[SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
[GBEL3_U08] The graduate is able to: study the literature independently and plan your own career path	is able to work in a team and organize work	[SU8] observation of student's independent or team work
[GBEL3_K01] The graduate is prepared to: use of theoretical knowledge in laboratory and production practice	Is ready to use theoretical knowledge in laboratory practice	[SK2] presentation/project/paper/ report [SK8] observation of student's independent or team work
[GBEL3_K05] The graduate is prepared to: responsibility for their own and others' safety at work	Is responsible for the safety of his own work and that of others.	[SK8] observation of student's independent or team work
[GBEL3_K08] The graduate is prepared to: takes responsibility for equipment/materials entrusted to it and respects the work of others	Is responsible for the equipment/ materials entrusted to him/her, his/ her own work, and respects the work of others	[SK8] observation of student's independent or team work
[GBEL3_K02] The graduate is prepared to: critically evaluate their own knowledge and methods in molecular biology and related fields and commercialise their research.	demonstrates the ability to critically analyze data obtained from experiments related to protein preparation	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report
[GBEL3_W05] A graduate has an advanced knowledge and understanding of: principles for planning research based on the achievements of biological sciences and related disciplines and the possibility of putting their results into practice, principles for the operation of equipment and apparatus used in molecular genetics research, and the principle of interpreting biological phenomena and processes based on empirical data in research work and practical action, taking into account the sustainable use of biodiversity	Knows the principles of research planning based on the achievements of biological sciences and the possibilities of using their results in practice, the principles of operation of equipment and apparatus used in research in the field of molecular genetics, and the principle of interpreting biological phenomena and processes based on empirical data in research work and practical activities, taking into account the sustainable use of biological diversity	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report

Subject contents

Students purify proteins using classic preparation techniques

Prerequisites and co-requisites

Passing the subjects biochemistry and molecular biology; Knowledge of basic information about the structure and synthesis of proteins

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
grade for the report	51.0%	25.0%
test	51.0%	75.0%

Recommended reading

Basic literature	1. Original source works from scientific magazines 2. Ćwiczenia z biochemii (Kłyszejko-Stefanowicz, L., red. PWN, Warszawa 1999) 3. Techniki laboratoryjne w biologii molekularnej (Lewandowska Roenneger A.; Medpharm, 2018)
Supplementary literature	J.M. Berg, J.L. Tymoczko, L. Stryer, Biochemia, 2009, PWN, Warszawa
eResources addresses	

Example issues/ example questions/ tasks being completed

Suggest a scheme for protein purification; Assign the given methods to research purposes;

Work placement	Not applicable

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