University of Gdańsk

Subject card

Subject name and code	Contemporary aspects of experimental immunology, PG_00147829		
Field of study	Genetics and Experimental Biology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	Bachelor'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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Molecular Biology -> Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Stefan Tukaj	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	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	3.0	7.0	25

Subject objectives

The aim of the lecture is to familiarize students with the basic techniques/methods used in the immunological laboratory. The main topics of the classes are closely related to the presentation of the basic mechanisms of the functioning of the immune system (primary and secondary response arms) both in health and disease.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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.	The student knows the principles of planning research 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 immunology, and the principle of interpreting biological phenomena and processes based on empirical data in research and practical activities taking into account the sustainable use of biological diversity _W05	[SW4] test/exam - oral or written
[GBEL3_W03] A graduate has an advanced knowledge and understanding of: molecular mechanisms of genetic information transfer and gene expression and the molecular and genetic basis of human physiology and disease, including infectious diseases.	191 / 5 000 The student knows the molecular mechanisms of genetic information transmission and gene expression as well as the molecular and genetic basis of human diseases, including infectious and immunological diseases_W03	[SW4] test/exam - oral or written
[GBEL3_K07] The graduate is prepared to: lifelong learning and updating of knowledge in molecular genetics and other fields.	The student understands the need for lifelong learning and updating knowledge in the field of molecular genetics and other fields_K07	[SK4] test/exam - oral or written
[GBEL3_K01] The graduate is prepared to: use of theoretical knowledge in laboratory and production practice	The student is ready to use theoretical knowledge in laboratory and production practice_K01	[SK4] test/exam - oral or written

Subject contents

Basic concepts used in immunology, classification of types of immune response (primary and secondary), production of therapeutic antibodies, basic techniques used in immunological laboratories (ELISA test, immunoblotting, immunohistochemistry, immunofluorescence, co-immunoprecipitation, flow cytometry, separation of immune system cells, cell culture), animal models of autoimmune diseases, experimental therapies for autoimmune diseases.

Prerequisites and co-requisites

Completion of courses: Basics of cellular and molecular immunology. Knowledge of basic concepts used in immunology, biochemistry, and molecular biology.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test	51.0%	100.0%

Recommended reading

Basic literature	Recommended primary reading: Abul K. Abbas (2010; 6th Edition or higher). Cellular and Molecular Immunology.
Supplementary literature	The lecture is an original study of issues related to experimental immunology based on many years of study of source literature, including own research work, e.g. Tukaj S, Bieber K, Witte M, Ghorbanalipoor S, Schmidt E, Zillikens D, Ludwig RJ, Kasperkiewicz M. Calcitriol Treatment Ameliorates Inflammation and Blistering in Mouse Models of Epidermolysis Bullosa Acquisita. J Invest Dermatol. 2018;138(2):301-309. doi: 10.1016/j.jid.2017.09.009.Additional literature in the form of published review and original works will be suggested on an ongoing basis. Additional literature is available in the UG resources.
eResources addresses	

Example issues/ example questions/ tasks being completed

Knowledge of basic concepts used in the immunological laboratory, e.g. antigen, immune complex, autoimmunity, animal model, 3R principle, immune response, etc.

Work placement

Not applicable

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