University of Gdańsk

Subject card

Subject name and code	Diploma lecture - Biological activity and synthesis of glycopeptides and their precursors, PG_00081844		
Field of study	Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional 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	6	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Adam Prahl	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

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	30	5.0	15.0	50

Subject objectives

Introducing students to basic issues regarding the synthesis and analysis of peptide, carbohydrate and glycopeptide precursors.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEML3_U08] Presents in an understandable way the basic facts about chemistry using a scientific language typical of chemical sciences.	Uses correct chemical language to describe processes related to the activity of biologically active substances.	[SU4] test/exam - oral or written
[CHEML3_W03] Explains the relationship between the structure of matter and its observed properties.	Understands and explains the relationships between the structure of biologically active compounds and their activity.	[SW4] test/exam - oral or written
[CHEML3_W02] Describes the properties of elements and the most important chemical compounds, enumerates the methods of their preparation and methods of analysis.	Knows the structure and properties of selected groups of organic compounds, is able to assess the methods of obtaining and characterizing them.	[SW4] test/exam - oral or written
[CHEML3_K01] Identifies the level of her/his own knowledge and skills and the need for continuous learning and personal development.	Understands the need for further education and development of skills.	[SK1] oral statement/conversation/ discussion

Subject contents

Characterization of amino acids and sugars, synthesis of peptides, glycoproteins and simple sugar compounds, characterization of methods for purification and identification of biomolecules (chromatography, electrophoresis, IR spectroscopy, UV-VIS, NMR, mass spectrometry), role and functions of peptides, proteins, sugars and glycoproteins in the body, characteristics of selected peptides and sugars.

Prerequisites and co-requisites

Passed subject: Organic Chemistry.

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Written exam.</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>A. Wiśniewski, J. Madaj, Basics of sugar chemistry, Agra-Enviro Lab., Poznań-Gdańsk 1997, ISBN 83-904998-2-7

H.D. Jakubke, H. Jeschkeit, Amino acids, peptides, proteins, PWN, Warszawa 1989</td></tr>
<tr><td>Supplementary literature</td><td>No requirements.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Peptide synthesis methods.

Mutarotation and its consequences.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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