University of Gdańsk

Subject card

Subject name and code	Monographic lecture - Interactions of antimicrobials agents with metalions, PG_00119774		
Field of study	Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Master'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	2	Language of instruction	Polish brak
Semester of study	3	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Bioinorganic Chemistry -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Mariusz Makowski	
	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

Additional information:

Lecture with multimedia presentation

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	40.0	75

Subject objectives

To make students familiar with the chemical structure, classification, methods of synthesis, analysis, known mechanisms of action, methods of searching for new antimicrobial preparations based, among others, on combinations of complex metal ions with selected groups of ligands;

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEMMU2_W01] Uses knowledge of spectroscopic methods of chemical compound analysis.	A student uses terminology related to the construction of antimicrobial compounds based on metal ions and ligands; can identify key functional groups of chemical and physical properties understands and can explain the meaning of complex compounds (complex: antimicrobial compound – metal ion)	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.	Student: understands the importance of antimicrobial drugs in everyday life; understands the importance of researching new antimicrobial drugs; understands the importance of searching for complex compounds (compound antimicrobial – metal ion)	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.	uses terminology related to the construction of antimicrobial compounds based on metal ions and ligands; can identify key functional groups of chemical and physical properties understands and can explain the meaning of complex compounds (complex: antimicrobial compound – metal ion)	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[CHEMMU2_W11] Demonstrates general knowledge about the current trends in the development of chemistry as a science and the latest discoveries in this field.	A student uses terminology related to the construction of antimicrobial compounds based on metal ions and ligands; can identify key functional groups of chemical and physical properties understands and can explain the meaning of complex compounds (complex: antimicrobial compound – metal ion)	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion

Subject contents

characteristics of antimicrobial preparations based on metal ions and organic ligands; mechanism of action of selected antimicrobial preparations; drug resistance; physicochemistry of complexes;
presentation of examples of anticancer drugs based on metal ion complexes and the latest scientific trends regarding antimicrobial preparations

Prerequisites and co-requisites

Completed course "General Chemistry", "Inorganic Chemistry", "Organic Chemistry".

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written examination with 8-10 open-ended questions	50.0%	100.0%

Recommended reading

Basic literature	A. Zejca, M. Gorczyca Chemia leków, wyd. PZWL, warszawa 2004 Z. Markiewicz, Z. A. Kwiatkowski Bakterie, antybiotyki, lekooporność, wyd. PWN, Warszawa 2012 R.B. Silverman, Chemia organiczna w projektowaniu lekow, wyd. WNT, Warszawa, 2004 S.J. Lippard, J.M. Berg Podstawy chemii bionieorganicznej
Supplementary literature	Positions indicated by the lectureur
eResources addresses	

Example issues/ example questions/ tasks being completed

Characterize the cis-platinum.

Work placement	Not applicable

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