University of Gdańsk

Subject card

Subject name and code	Receptors and cell signaling, PG_00121250		
Field of study	Chemical Business, Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Master's studies	Subject group	Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish Polish
Semester of study	3	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Laboratory of Molecular Modeling -> Department of Theoretical Chemistry -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Magdalena Ślusarz	
	Teachers	dr hab. Magdalena Ślusarz	

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

eNauczanie source addresses:

Moodle ID: 12154 Receptory i sygnalizacja komórkowa
https://mdl.ug.edu.pl/course/view.php?id=12154

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

- Familiarize the student with the three-dimensional structures of selected membrane proteins, their ligands, receptor-ligand complexes and their oligomers using simple molecule visualization programs.
- Use the information learned in the lecture to evaluate the activity and function of selected proteins.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEMMU2_W02] Has extended and in-depth knowledge in the field of basic chemistry.	Describes the relationship between the structure and activity of receptors presented in the lecture.	[SW5] implementation of a problem task
[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	The student independently searches the literature and uses the information to perform tasks.	[SK5] implementation of a problem task
[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	The student uses the knowledge learned in the lecture and knowledge of biochemistry, cell biology and infomatics to solve tasks.	[SU5] implementation of a problem task

Subject contents

Analysis of three-dimensional structures of membrane proteins and their ligands using simple molecular visualization software. Application of the information learned during the lecture to evaluate the activity and function of selected proteins.

Prerequisites and co-requisites

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>The passing grade is the arithmetic average of the partial grades received for the performance of each exercise during the semester.</td><td>51.0%</td><td>100.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>None</td></tr>
<tr><td>Supplementary literature</td><td>Patrick G. "An Introduction to Medicinal Chemistry"</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">• Comparison of the complexes: receptor-agonist complex and receptor-antagonist complex.
• Construction of dimer of the opioid receptors.
• Analysis of the oxytocin receptor binding pocket.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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