

Course code																																	
Type and description	EC																																
ECTS credit	1																																
Course name	Peptides/proteins - drugs, drug transporters, and materials for regenerative medicine																																
Course name in Polish	Peptydy/białka – leki, transportery leków oraz materiały dla medycyny regeneracyjnej																																
Language of instruction	English																																
Course level	8 PRK																																
Course coordinator	Beata Kolesińska																																
Course instructors	Beata Kolesińska																																
Delivery methods and course duration	<table border="1"> <thead> <tr> <th></th> <th>Lecture</th> <th>Tutorials</th> <th>Laboratory</th> <th>Project</th> <th>Seminar</th> <th>Other</th> <th>Total of teaching hours during semester</th> </tr> </thead> <tbody> <tr> <td>Contact hours</td> <td>0</td> <td>0</td> <td>0</td> <td>15</td> <td>0</td> <td>0</td> <td>15</td> </tr> <tr> <td>E-learning</td> <td>no</td> <td>no</td> <td>no</td> <td>no</td> <td>no</td> <td>no</td> <td></td> </tr> <tr> <td>Assessment criteria (weightage)</td> <td>0,00</td> <td>0,00</td> <td>0,00</td> <td>1,00</td> <td>0,00</td> <td>0,00</td> <td></td> </tr> </tbody> </table>		Lecture	Tutorials	Laboratory	Project	Seminar	Other	Total of teaching hours during semester	Contact hours	0	0	0	15	0	0	15	E-learning	no	no	no	no	no	no		Assessment criteria (weightage)	0,00	0,00	0,00	1,00	0,00	0,00	
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Course objective	The aim of the subject is to acquaint students with the possibilities of the practical use of proteins/peptides in medicine and related sciences. In particular, the applications will focus on using peptides/proteins as drugs, systems used in drug delivery, and materials useful in regenerative medicine. The most important limitations in the direct use of proteins/peptides will be presented as well as methods for eliminating these limitations.																																
Learning outcomes	A student after completing the course can: <ol style="list-style-type: none"> 1. characterize the peptide/protein used as drugs, discuss the method of eliminating the limitations of peptides as medicaments - effects W4, U4, K1 2. describe the use of peptides/proteins as a drug delivery system and discuss their advantages and limitations - effects W4, U4, K1 3. characterize peptide/protein materials used in regenerative medicine, and discuss their advantages and limitations - effects W4, U4, K1 																																
Assessment methods	Effects W4, U4, K1 <p>– oral presentation of individual project presenting the use of the materials and methods used in own project.</p> <p>The final evaluation is based on:</p> <p>Score from the written test - 70%</p> <p>Presentation - 30%</p>																																
Prerequisites	Basics of biochemistry and chemistry of natural compounds																																
Course content with delivery methods	part I Peptides/proteins used as medicines, the main methods of their preparation.																																

	<p>Problems associated with the use of peptide / protein-based drugs.</p> <p>Methods for improving the pharmacokinetic and pharmacodynamic properties of peptide/protein drugs.</p> <p>part II</p> <p>Peptides/proteins as a drug delivery system.</p> <p>Cell-penetrating peptides as a universal tool for transporting medicines, biomarkers, and biopolymers.</p> <p>Human serum albumin as an internal drug delivery system.</p> <p>part III</p> <p>Peptides/proteins used in regenerative medicine</p> <p>Conjugates of polysaccharides, biodegradable polymers, and bioinorganic compounds with proteins/peptides</p> <p>Modulation of biological activity of materials used in regenerative medicine.</p>
Basic reference materials	<p>1) Lecturer material,</p> <p>2) Peptides as Drugs: Discovery and Development, Editor(s): Bernd Groner, Wiley-VCH Verlag GmbH & Co. KGaA, 2009</p> <p>3) Therapeutic Protein Drug Products. Practical Approaches to formulation in the Laboratory, Manufacturing, and the Clinic, Editors: Brian Meyer, Woodhead Publishing, 2012</p> <p>4) Cell-Penetrating Peptides. Methods and Protocols, Editors: Langel, Ülo (Ed.), Springer, 2011</p> <p>5) Peptides and Proteins as Biomaterials for Tissue Regeneration and Repair, Edited by: Mário A. Barbosa and M. Cristina L. Martins, Woodhead Publishing, 2018</p> <p>6) Peptides and Peptide-based Biomaterials and their Biomedical Applications, Editors: Sunna, Anwar, Care, Andrew, Bergquist, Peter (Eds.), Springer, 2017</p>
Other reference materials	Current scientific articles, given by the lecturer
Average student workload outside classroom	15h
Comments	
Last update	Brak informacji