Course title

Protein fosforylation in bacteria (lecture)

ECTS code

13.1.0222

Name of unit administrating study

Intercollegiate Faculty of Biotechnology UG-MUG

Teaching staff

dr hab. Michał Obuchowski

Studies

faculty	field of study	type	form	specialty	specialization	semester
Intercollegiate Faculty of Biotechnology UG-MUG	Biotechnology	second tier studies (MA)	full-time	all	all	2

Forms of classes, the realization and number of hours

Forms of classes

Wykład (to translate)

The realization of activities

lectures in the classroom

Number of hours

Wykład (to translate): 15 hours

ECTS credits

2

The academic cycle

2013/2014 summer semester

Type of course

elective (to translate)

Language of instruction

english

Teaching methods

wykład z prezentacją multimedialną (to translate)

Form and method of assessment and basic criteria for eveluation or examination requirements

Final evaluation

Zaliczenie na ocenę (to translate)

Assessment methods

Written test

The basic criteria for evaluation

Assessment covers contents contained in the box ‘Course Contents’.
The assessment is performed according to percentage index (compliant with the Rules and Regulations for Studies at the UG).
Questions cover all effects indicated in the box ‘Learning Outcomes’

Required courses and introductory requirements

A. Formal requirements

Bachelor’s degree

B. Prerequisites

Aims of education

The student possesses knowledge about chemism of protein phosphorylation and its significance for all living organisms. He knows and can describe chosen systems of protein phosphorylation functioning in various bacterial strains on the molecular level (K_W01). He is able to show connections between the described system of protein phosphorylation and the behavior of the whole microorganism in environment. He can predict the impact of the disturbance of the described systems on the physiology of a bacterial cell and its interaction with other living organisms (K_W02).

Course contents

General conception of protein activity regulation through phosphorylation. Structure and activity of protein kinases and phosphatases. Selected examples of systems using protein phosphorylation such as: regulation of chemotactic response in bacteria (*E. coli*), activity of the mechanism of general stress response (*B. subtilis*), control of bioaccessible nitrogen assimilation (*E.coli*), virulence regulation (*V. cholera and Y. pestis*), formation of bacterial spores (*B. subtilis*), regulation of bacterial bioluminescence (*V.fisheri, V.harvey*), mechanism of acquiring natural genetic competence (*B. subtilis*), regulation of phosphorylation-dependent transport of sugars to the cell (*B. subtilis*).

Bibliography of literature

Script ‘Protein Phosphorylation in Bacteria’ available in the extranet in the tab of the course; review papers concerning issues discussed during the lecture.

The learning outcomes	Knowledge
K_W01 K_W02	K_W01 Understands complex biological phenomena on the molecular level, knows their significance for biotechnology and their relationships with other areas and disciplines of science K_W02 Possesses a deepened knowledge in the field of related scientific areas and disciplines allowing him to see connections and dependencies in nature, in particular those essential for biotechnology
	Skills
	Social competence

Contact

obuchowk@biotech.ug.edu.pl