Doctoral study program: Biomedical Sciences
Form: *doctoral combined*
Department: Department of Histology and Embryology
Supervisor: Assoc. prof. Dr. Irena Koutná, Ph.D.

Ph.D. position:
Translational Development of Artificial Skin Constructs: Establishing Quality Control Systems for Preclinical and Clinical Application

Annotation:
This Ph.D. thesis will focuses on the translation of artificial skin research into preclinical and clinical stages, with special emphasis on establishing a robust system of quality control. The research integrates advanced biomaterial engineering with cellular and molecular approaches to develop skin substitutes that meet safety, efficacy, and regulatory requirements. A comprehensive quality control framework will be implemented, combining histological and immunohistochemical analyses with molecular biology methods to assess cell integration, differentiation, vascularization, and barrier functionality. Preclinical evaluation will involve relevant animal models to validate wound healing capacity, biocompatibility, and long-term stability of the constructs. The study also addresses GMP-compliant production and regulatory classification of artificial skin as an advanced therapy medicinal product (ATMP). The ultimate aim is to deliver a validated translational platform that bridges laboratory innovation with clinical trial readiness, providing new therapeutic opportunities for patients with severe skin damage and burns.

Funding of the research:
For combined study programs, it is not mandatory.
Information on funding PGS positions:
For combined study programs, it is not mandatory.

Requirements for the student according to the Doctoral Board:
The student's minimum publication activity within the course of study is one first-author publication with an IF value above the median in the field or 2 first-author publications in journals with an IF value in the 3rd quartile in the field (Q3). A condition for successful completion of the studies is also a foreign internship of at least 1 month, which is an inseparable part of the studies. As part of their studies, students will also participate in the teaching.

Information about supervisor:
Publication activity (last 5 years):

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List of successful graduates (Ph.D.):
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