

Affiliation: Masaryk University, Faculty of Medicine
Study program: PhD program Biomedical Sciences
Specialization: Cell and Tissue Morphology
Workplace: Department of Histology and Embryology
Form of study: Full-time

Supervisor: Mgr. Eva Švandová, Ph.D. (evabsvandova@gmail.com)

Expert – consultant: Prof. RNDr. Eva Matalová, Ph.D. (IAPG CAS, v.v.i.)

Title: Vascularisation, innervation and stem cells of the dental pulp evaluated in *in vivo* context

Brief annotation (max 200 words):

The dental pulp hosts vascular and neural supply of the tooth surrounded by a hard shell. It represents a unique tissue essential for preservation of tooth vitality, which is, however, sensitive for external factors with a restricted possibility of regeneration. Therefore, stem cells identified in the dental pulp are attractive subject of biomedical research. In general, appearance of stem cells is associated to vascularization and neural network. The majority of knowledge in dental stem cells was unfortunately generated from *in vitro* experiments. The suggested project follows investigation molecular factors involved in the aforementioned associations with focus on the *in vivo* context. Experimental work includes histological and immunohistological techniques, PCR analysis, statistical evaluation and experiments in mouse model. The position provides part-time contract in frame of the project supported by the Czech Science Foundation. The PhD candidate is expected to work independently with scientific literature, and to be oriented in the field of molecular biology. The practical knowledge of the technique mentioned above is not required.

Funding: Czech Science Foundation (recent project: 2021-2023)

Requirements: flexibility, motivation, ability of individual work, English

Requirements to successfully obtain a PhD degree in the Biomedical Sciences PhD program:

- Have at least one first author publication in an international research journal with an impact factor above the median IF in the field or have two first author publications with the IF in Q3. Importantly, the affiliation to the Faculty of Medicine, Masaryk University must be listed.
- Gain a set of minimum credits (240 ECTS in 4-year study period), pass 4 faculty-wide courses + an English language course and 4 field-specific courses.
- Pass the doctoral state exam.
- Take an active part in teaching.
- Participate in the annual PhD conference.
- Present research outcomes at least once at an international conference (poster, presentation).
- Spend at least one month abroad on an internship.

Masaryk University, Faculty of Medicine

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