

Mode of study: On-site

Study Program and Specialization: Biomedical Sciences, Cell and Tissue Morphology

Supervisor: Alemeh Zamani, Ph.D. (zamani@med.muni.cz)

Topic: Reaction of the Blood-cerebrospinal fluid barrier to chemotherapy induced neuropathy

Annotation: Breakdown of blood-cerebrospinal fluid (B-CSF) barrier localized in choroid plexus is associated with many neurological disorders. However, relatively little is known about the underlying molecular mechanisms. Alteration of the barrier integrity and its involvement in the initiation and progression of neurological disorders need to be determined to get insights into treatment approaches. Our team focuses on studying the B-CSF barrier in pathophysiological conditions using *in-vivo* and *in-vitro* models and a combination of different techniques. The dissertation thesis aims to investigate the molecular and cellular mechanisms underlying the spread of inflammatory responses through the B-CSF barrier, following chemotherapy, and subsequent neuropathic pain.

Requirements:

- Graduate student of Medical School, Molecular Biology, Biochemistry, or relevant disciplines
- Hands-on experiences with WB, PCR, and cell culture
- Active knowledge of English (min. B2)

Information about supervisor:

- Appointed as Assistant professor at Masaryk University-Anatomy Department, Ph.D. and postdoctoral study in Japan, Experienced in electrophysiology and optogenetic, Publications in high-ranked journals

- Collaboration with institutes and academic stages: International collaboration with high-profile laboratories, as well as other faculties of Masaryk University

- Possible stage for the student: Participation in a dynamic and motivated research team, Opportunity to gain expertise in cutting-edge techniques