



Open PhD positions for the Academic Year 2022/2023

Faculty of Science BIOCEV

Laboratory:	Laboratory of Cancer Cell Invasion
Group Leader:	Doc. Jan Brábek + Doc. Daniel Rosel
Website:	http://web.natur.cuni.cz/cellbiol/invalab/

Project summary	Supervisor: Doc. Daniel Rosel
Project title:	Investigating molecular mechanisms of new migrastatic compounds
<p><i>Project description:</i></p> <p>Cancer is characterized by abnormal cellular proliferation and dissemination to other parts of the body. While hematologic malignancies are characterized by uncontrolled clonal proliferation that can be effectively treated by cytotoxic drugs, solid cancer is accompanied by local invasion and metastasis. The gain of an invasive phenotype is the most important cancer feature since it distinguishes malignant from benign tumors. Therefore, in addition to cytostatic treatment, the treatment of solid cancer should be supplemented with drugs that inhibit the ability of cancer cells to invade through the extracellular matrix and thereby establish secondary tumors. We introduced the concept of migrastatics as drugs targeting cancer cell invasiveness. In a screen for compounds with migrastatic properties, we identified candidate compounds that effectively inhibited cancer cell invasion without being cytotoxic. The aim of the project will first be to verify the antimetastatic effect of candidate compounds in vivo in xenograft and syngeneic mouse models. Furthermore, the project will focus on finding the molecular mechanisms of action of the most effective compounds.</p> <p><i>Candidate profile:</i></p> <p>The PhD candidate should have experience with molecular cloning and basic microscopic techniques. Experience with proteomic approaches and/or lab animal care are of further advantage.</p> <p><i>Suggested reading:</i></p> <ol style="list-style-type: none"> Rosel D, Fernandes M, Sanz-Moreno V, Brábek J. Migrastatics: Redirecting R&D in Solid Cancer Towards Metastasis? Trends Cancer. 2019 Dec;5(12):755-756. Gandalovičová A, Rosel D, Fernandes M, Veselý P, Heneberg P, Čermák V, Petruželka L, Kumar S, SanzMoreno V, Brábek J. Migrastatics-Anti-metastatic and Anti-invasion Drugs: Promises and Challenges. Trends Cancer. 2017Jun;3(6):391-406. 	

