doc. RNDr. Petr Heneberg, Ph.D.

Metabolism Reprogramming Lab
Department of Internal Medicine 3FM CU and UHKV
https://www.lf3.cuni.cz/3LFEN-577.html

Topic title
Metabolism of ovarian cancer tumors

Description of scientific activity

Petr graduated in Biology from Charles University in Prague. During his master and doctoral studies, he specialized in mast cell submembrane signaling under the supervision of Petr Dráber at the Institute of Molecular Genetics AS CR. Afterwards, in 2008-2011, Petr held a postdoc position at the Division of Stem Cell and Developmental Biology of the Ontario Cancer Institute in Toronto, Canada, where he focused on the role of protein tyrosine phosphatases in cancer onset and progression under the guidance of Benjamin G. Neel. After returning back to the Czech Republic, Petr established a laboratory affiliated with the Third Faculty of Medicine (currently called the Metabolism Reprogramming Lab). The newly formed laboratory focused on various aspects of metabolism, particularly on the effects of aberrant activity of hexokinases, first on glucokinase diabetes, later on the roles of hexokinases in cancer. The recent topics include the research on the cancer-associated reprogramming of energetic metabolism in high grade serous ovarian carcinomas and clear cell renal carcinomas and the analysis of the same metabolic pathways in corresponding healthy tissues. PI of several projects funded by GAČR, TAČR, AZV, IGA MZ ČR, etc.; member of editorial boards of Diabetes Care (2018-2020), PLoS ONE (since 2015) and Anti-Cancer Agents in Medicinal Chemistry (since 2011); 169 papers in peer-reviewed journals, 2313 citations (WOS).

Selected publications

Šimčíková, D.; Heneberg, P. Refinement of evolutionary medicine predictions based on clinical evidence for the manifestations of Mendelian diseases. Scientific Reports, 2019, 9: 18577.

Heneberg, P. Redox regulation of hexokinases. Antioxidants & Redox Signaling, 2019, 30, 415-442.

Šimčíková, D.; Kocková, L.; Vackářová, K.; Těšínský, M.; Heneberg, P. Evidence-based tailoring of bioinformatics approaches to optimize methods that predict the effects of nonsynonymous amino acid substitutions in glucokinase. Scientific Reports, 2017, 7: 9499.

Selected or ongoing grants/clinical studies

Czech Science Foundation 15-03438Y (PI, 2015-2017): Mechanisms of the monogenic diabetes onset, progression and therapy

Czech Science Foundation P301/12/1686 (PI, 2012-2014): Protein tyrosine phosphatases in regulation of the immune system of diabetic patients

Czech Health Research Council 15-32432A (PI, 2015-2019): Preclinical applications of beauverolides, cyclodepsipeptides of entomopathogenic fungi

PhD Students

Number of PhD students currently studying : 0
Number of defended students with year of defence: 1 (2020)