Title: How inactivation of mitochondrial calcium uniporter protects dopaminergic neurons. (NCN/OPUS)

Supervisor: Professor Jacek Kuźnicki, PhD, DSc Institute: International Institute of Molecular and Cell Biology in Warsaw Laboratory: Laboratory of Neurodegeneration www: <u>https://shorturl.at/qCTyO</u>

Project description:

Dysregulation of calcium homeostasis plays an important role in neurodegenerative processes in Parkinson disease as well as in glaucoma, however the mechanisms of cell loss is not known. In this study we will investigate if Stim2 deficiency in zebrafish triggers activation of microglia, and how this affects dopaminergic neurons and retinal ganglion cells (RGCs).

Aim:

The PhD thesis project aims to establish mechanism of dopaminergic neurons and retinal ganglion cells loss (RGCs) in zebrafish models – is it by ferroptosis, apoptosis, or by activated microglia?

Requirements:

- Master's degree in biology, biotechnology, biochemistry or related field
- Good knowledge of basics of molecular and cell biology
- Basic hands-on experience in at least one of the fields: molecular biology, cell biology, fluorescent and confocal microscopy,
- Knowledge of the biology and maintenance of Danio rerio will be an advantage
- Written and spoken fluency in English
- Willingness to learn and take new challenges, ability to work independently, analytical thinking
- Excellent interpersonal skills and a collaborative attitude

Number of positions available: 1

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