BIOMEDICAL CENTER

FACULTY OF MEDICINE IN PILSEN
Charles University

Laboratory of Reproductive Medicine

calls for Ph.D. student (since October 1st, 2022)

Mitochondrial biogenesis during oocyte development and early embryonic development

(supervisor: assoc. prof. Jan NEVORAL, Ph.D.)

Briefly: Mitochondria are inherited down to the maternal lineage and, therefore, oocyte mitochondrial health is essential for the fitness of offspring. We hypothesize that the transcription of mitochondrial (mt) DNA is essential for the renewal of maternal mitochondria and the elimination of mtDNA mutations. The model of conditional knock-out mouse will be used for the study of TFAM, transcriptional factor A, mitochondrial. Oocytes and early embryos will be produced and analyzed *via* immunostaining and mtDNA sequencing. The knowledge will explain causes of infertility associated with advanced maternal age, and improve assisted reproductive techniques.

Requirements

- MSc. In life sciences
- Basic laboratory experience
- Entusiasm and good spirit

Used techniques

- Cre-Lox crossbreeding of knock-out mice
- *In vitro* a *in vivo* embryo production
- Imunocytochemistry, confocal scope, and image analysis
- mtDNA amplification and sequencing

What can you expect?

- International team
- High-tech lab equipment
- Traveling and fellowships

References

https://pubmed.ncbi.nlm.nih.gov/35283775/
https://pubmed.ncbi.nlm.nih.gov/31413827/
https://pubmed.ncbi.nlm.nih.gov/27579148/

Contact: jan.nevoral@lfp.cuni.cz

Submission deadline: **April 30, 2022**