

PhD Programme: Biomedical sciences
Specialization: Cell and Tissue Morphology
Work place: Department of histology and embryology, Medical faculty, Masarykova univerzita
Supervisor: PharmDr. Zuzana Holubcová, Ph.D.

PhD Topic: Morfologická analýza ultrastrukturních znaků lidských oocytů /Morphological analysis of ultrastructural markers of human oocytes

Number of PhD positions: 1

Annotation:

Egg quality is a crucial prerequisite for proper embryo development. In humans, poor developmental competence of oocytes is a major obstacle to conception and a cause of female infertility. In the absence of detailed knowledge of subcellular morphology, criteria of egg quality remain elusive. Thus, we aim to systematically study the ultrastructural morphology of human oocytes donated for research to determine structural changes underlying acquisition of their developmental competence. In particular, we will use advanced electron microscopy techniques to qualitatively and quantitatively analyze the 3D organization of organelles and their distribution in the course of meiotic maturation. Using this approach we will examine the intracellular changes during oocyte maturation and search for the factors compromising the egg's developmental capacity. Detailed morphological description of human oocytes, including commonly occurring cytoplasmic abnormalities, will not only improve our understanding of ultrastructural peculiarities of female gametes, but it will also provide a scientific background to better predict egg developmental potential in assisted reproduction.

Admission requirements:

Education: university graduate - master degree in the area of molecular/cell/developmental biology or medical/pharmaceutical/veterinary sciences
Skills: solid background in reproductive biology, micromanipulation skills are advantage, independence, analytical skills, resilience, motivation, communication skills
English: level B2 and higher

Internship abroad and/or participation in an international researched project is a compulsory part of the PhD programme.

For more information about our research see <http://www.med.muni.cz/histology/zuzana-holubcova/>