



Report evaluation

Dr. Josef Matousek Award

Competition for Matoušek Award 2020

Nomination number

DRMA-2020-0002

Nominee

Dr. Ahmed Gad, PhD

Workplace

81 / 810001 (810001)

Name of Project

Characterization and functional analysis of extracellular vesicles in follicular fluids: implications for porcine oocyte quality and development

Period

1.3.2020 - 31.3.2021

Short review

The evaluated project was aimed at the characterization of extracellular vesicles (EVs) and their miRNA cargo derived from high quality and low quality porcine follicles. The developmental competence of respective oocytes was analysed by the lissamine blue dye penetrating to the low quality oocytes. The scientific question was if there are differentially expressed miRNAs which could be utilized as a quality marker for the subsequent selection of high quality oocytes in the porcine model. The author also performed morphological analysis of extracellular vesicles by transmission electron microscopy (TEM) and evaluated the EVs concentration in both groups using nanoparticle tracking analysis (NTA). Since EVs size and concentration was similar in both experimental groups, sequencing of isolated miRNAs on an illumina NovaSeq 6000 sequencer revealed 297 common miRNAs and 9 miRNAs exclusive for only one group. These miRNAs will be further analysed in the future experiments. The project budget was correctly spent in accordance with the plan.

The results of the project are

A - Excellent

Final comment

The project proposal was originally also focused on the co-cultivation of isolated EVs from high and low quality follicles with oocytes. Even this aim was not accomplished; the two remaining goals described above were successfully done and results will be part of the conference abstract and impacted publication.