



Seminar/Talk

Everything you always wanted to know about trophoblasts* (*including the answer to: what is a trophoblast?)

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Host: Johann Georg Danzl

Trophoblast cells arise from the very first lineage specification in early mammalian development and form the trophoctoderm, which gives rise to the extra-embryonic placenta. Different trophoblast subpopulations constitute a selective barrier between mother and embryo and are responsible for nutrient and oxygen uptake of the developing offspring and the production of pregnancy maintaining hormones. Despite their pivotal role, comparatively little is known about the biology of human trophoblasts. During the past three years our team focused on the cell cycle status of trophoblasts during their differentiation from epithelial cells to highly invasive mesenchymal cell. Using multiple cytometric and imaging techniques we found, in contrast to the scientific consensus, evidence for extensive endoreduplication and polyploidization, a process where a cell duplicates its genome without subsequent cell division. In a second project we investigated the expression of the histamine-degrading enzyme diamine oxidase in the maternal-foetal interface. Contrary to published literature we revealed that diamine oxidase does not originate from maternal uterine cells but that it is exclusively expressed and secreted by a specific subset of placenta-derived trophoblast cells. Since these cells are suspected to be affected in the severe pregnancy disorder preeclampsia we hypothesized that diamine oxidase might serve as biomarker to predict an emerging disease. In a collaborative effort with the Department of Pharmacology of the Medical University of Vienna and the Harvard Medical School we could confirm our hypothesis by revealing significant differences between healthy women and those who developed preeclampsia later on during pregnancy.

Monday, October 30, 2017 03:00pm - 04:00pm

Meeting room 1st floor / Lab Bldg East (I06.01.406)



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