

2nd International Conference on **Endocrinology**

October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

Isolation, characterization and functional properties of extravillous cytotrophoblast cells from term placental basal plate

Alexandre Urban Borbely
University of Sao Paulo, Brazil

The extravillous cytotrophoblast cells (EVT) comprise of different cell phenotypes and functions during pregnancy. Invasion of the endometrium by EVT cells contributes to placental anchorage, spiral artery remodeling, immunological defense, tolerogenic responses, and several collaborative crosstalks, which establish and maintain a successful pregnancy. The term placental basal plate was carefully dissected from the villi and the amniochorion membrane prior to enzymatic digestion. Term basal plate EVT cells were isolated using Percoll gradients and a panel of markers to confirm the specificity of the method was used. Cells were positive for cytokeratin-7 (CK-7), placental growth factor, placental alkaline phosphatase, human leukocyte antigen G1 (HLA-G1), and $\alpha 1$ and $\alpha 5$ integrins, similarly to first trimester EVT markers. Around 95% of the isolated cells were positive for CK-7 and 82% for HLA-G1. No significant change in viability was observed during 48 h of EVT culture as indicated by propidium iodide incorporation and trypan blue test exclusion. Metalloproteinases 2 and 9 were expressed and presented gelatinolytic activity up to 48 h of culturing. Transforming-growth factor beta and epidermal growth factor were used respectively as inhibitor and enhancer of EVT invasion, and other molecules were tested to assess EVT invasion. Taken together, our results show that term basal plate represents a viable source of functional EVT cells, which have several qualities over villous explant-derived EVT cells, cell lines and even first trimester EVT cells. Furthermore, these cells may be useful to investigate trophoblast pathological conditions.

Biography

Alexandre Urban Borbely is a biomedical cytopathologist since 2006 and a postdoctoral fellow from University of Sao Paulo. He has completed his MSc in 2009 at University of Sao Paulo (Brazil) and received an award of best poster presentation at the PAA/SLIMP/16th IFPA Meeting in 2010. His PhD was completed in 2013 at University of Sao Paulo (Brazil), after 9 months at the Medical University of Vienna (Austria). He has participated in 24 international conferences, with 27 presentations. He has published 10 abstracts in conference proceedings and 5 published papers (three as first author) in reputed international journals.

borbely@usp.br