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PhD in Medical Sciences  
2019-2020

INVITATION to the Public defence of

**Carolina ORTEGA HREPICH**

To obtain the academic degree of '**DOCTOR OF MEDICAL SCIENCES**'

**Human oocyte in-vitro maturation: optimization of the clinical approach to enhance success rates.**

**Tuesday, 17 December 2019 at 5 p.m.**

In Auditorium **Piet Brouwer**

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussels

How to reach the campus Jette:

<http://www.vub.ac.be/english/infoabout/campuses>

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## Summary of the dissertation

Oocyte in vitro maturation (IVM) is an artificial reproductive technology (ART) where oocytes are retrieved from antral follicles, typically from unstimulated or minimally stimulated ovaries, and cultured, matured and fertilized in vitro. Clinical outcomes are inferior compared to conventional ART based on controlled ovarian stimulation (COS), although modifications to the in vitro culture system and the clinical protocol have resulted in improved success rates. Because of the low hormonal burden and the minimal need for cycle monitoring compared to COS, IVM has been advocated as a more "patient-friendly" ART, especially in patients with PCOS. Recently, there has been an emerging role for IVM in fertility preservation for cancer patients who have no time to undergo COS.

With this doctoral study, multiple endeavors to enhance the clinical application of IVM in patients with PCOS are described. That observation that in a non-hCG-triggered IVM system, vitrified-warmed embryo transfer performs better than fresh embryo transfer has led us to suggest that endometrial receptivity in IVM cycles may be impaired. This observation was supported by immunohistochemical studies of steroid receptor expression in the endometrium during the IVM cycle, showing that the mid-secretory signature of the endometrium on day 5 or 6 after IVM is absent in patients with PCOS and women with normo-ovulatory cycles.

Analysis of the endocrine profile in patients with PCOS who underwent egg retrieval for IVM demonstrated a significant, but transient impact on serum androgen and AMH levels.

## Curriculum Vitae

Carolina Ortega Hrepich was born in Colombia in October 1976. She received her medical degree in 2001 from Universidad de La Sabana in Bogotá, Colombia, and graduated with honors as obstetrician gynecologist in 2006 at Universidad de Los Andes in Santiago, Chile.

In 2009 she graduated as a specialist in Reproductive Medicine at Universidad del Desarrollo and Clínica Alemana de Santiago in Chile.

From 2009 until 2013 she was part of the CRG team in UZ Brussel as a clinical staff member. During that period, she started her PhD studies on in vitro maturation of human oocytes.

Currently she lives in Santiago, Chile, where she works as a gynaecologist and specialist in Reproductive Medicine in Clínica Monteblanco, Redsalud Vitacura and Redsalud Arauco. She is also OBGYN teacher at Universidad Finis Terrae in Santiago, Chile.