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PhD in Medical Sciences
2016-2017

INVITATION to the Public defence of

Lisbet Van Landuyt

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

**Vitrification of cleavage stage embryos and blastocysts in
ART practice**

Thursday 15 December 2016

Auditorium **Vanden Driessche**, 17:00

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

How to reach the campus Jette:

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

Summary of the dissertation

The importance of cryopreservation in ART steadily increased over the last decades due to the introduction of single embryo transfer to avoid high risk multiple pregnancies. The general aim of this thesis was to optimize the cryopreservation program for cleavage stage embryos (day 3) and blastocysts (day 5/6) at the Centre for Reproductive Medicine (CRG) of UZ Brussel. Vitrification using a closed high security device was implemented in our IVF centre in 2008 for blastocysts and in 2010 for cleavage stage embryos in order to improve the efficiency of our cryopreservation program in terms of embryo survival (and quality) on the one hand and implantation rate on the other hand.

The outcome of the first two years of blastocyst vitrification was evaluated. It was concluded that vitrification was successful for blastocysts with or without blastomere biopsy on day 3. To further improve the results of the blastocyst vitrification program, a randomised controlled trial aimed to investigate the effect of laser-induced artificial shrinkage on survival, quality and implantation potential of vitrified-warmed blastocysts. It was concluded that applying artificial shrinkage before vitrification further increased the efficiency of the vitrification program. For day 3 cleavage stage embryos, the consequence of post-warming cellular loss for the further developmental potential of multicellular embryos was investigated and compared for the existing slow freezing (DMSO) protocol and the newly introduced vitrification method. Vitrified day 3 embryos showed higher survival rates and better development after overnight culture than slowly frozen embryos, regardless of the number of cells lost.

Curriculum Vitae

Lisbet Van Landuyt is born on May 8, 1973 in Dendermonde. She studied Latin-Sciences at St-Vincentiusinstituut, Gijzegem, followed by Biological and Pharmaceutical Techniques at Hoger Instituut St-Lieven, Gent where she graduated cum laude in 1994.

She then studied Biomedical Sciences at the Vrije Universiteit Brussel where she graduated magna cum laude in 1997. The title of her thesis was 'Micromanipulation-assisted Insemination of Mouse Oocytes' that she completed after her internship at the Centre for Reproductive Medicine (CRM) under the promotorship of Prof. Dr. A.C. Van Steirteghem and Dr. P. Nagy.

Since 1997 she is working as a clinical embryologist at the Centre for Reproductive Medicine. In 2008 she obtained the ESHRE embryology certificate of senior clinical embryologist.

She is author and co-author of 34 peer-reviewed articles in international journals in the field of reproductive medicine and is appointed as associate editor of Human Reproduction since 2014.

She was a board member of the 'Vlaamse Vereniging van Klinisch Embryologen' (VVKE) (2012-2015) and of the 'Belgian Society for Reproductive Medicine' (BSRM) (2014-2017).

She is proud mother of two sons Jan (11) and Lieven (9).