

Promotor

Prof. Johan Smitz

Klinische Chemie en RIA, UZ Brussel
Vrije Universiteit Brussel

Leden van de examencommissie

Prof. em. Robert van den Hurk

Department of Farm Animal Health
Utrecht University, Nederland

Dr. Anne Van Langendonck

Laboratoire de Gynécologie
Université Catholique de Louvain (UCL)

Dr. Isabelle Demeestere

Research Laboratory on Human Reproduction
Free University of Brussels (ULB)

Prof. Jean De Schepper

Pediatrie, UZ Brussel
Vrije Universiteit Brussel

Prof. Martine Vercammen

Klinische Chemie en RIA, UZ Brussel
Vrije Universiteit Brussel

Prof. Chris Van Schravendijk, voorzitter

Diabetes Research Center
Vrije Universiteit Brussel



Vrije Universiteit Brussel

FACULTEIT GENEESKUNDE EN FARMACIE

Doctoraat Medische Wetenschappen

Academiejaar 2007-2008

UITNODIGING

Voor de openbare verdediging van het
doctoraatsproefschrift van

Jean Clair SADEU

maandag 30 juni 2008

U wordt vriendelijk uitgenodigd op de openbare verdediging van het proefschrift van

Jean Clair SADEU

**'Fertility Preservation in Female Cancer Patients:
A First Approach to Culture Early Stage Human Follicles after Cryopreservation'**

Op **maandag 30 juni** om **17 uur** in auditorium **P. Brouwer** van de Faculteit Geneeskunde & Farmacie, Laarbeeklaan 103, 1090 Brussel

Situering van het proefschrift

For some cancers, there are concerns about cryopreserved ovarian tissue transplantation because ovarian tissue grafts may harbor malignant cells, causing relapse of the disease. In that respect, in vitro growth of oocytes within ovarian tissue is the safest possible option.

The overall aim of this research project was to explore models for developing a technique for in vitro growth of early stage human follicles from cryopreserved ovarian tissue.

Morphological and morphometric parameters of follicular development in vivo in guinea pig were determined for the set up of a follicle culture system in this species as a model for human follicle culture.

A defined culture medium was tested for its efficacy to allow the initiation of follicular growth, development, and viability during culture of frozen-thawed human fetal follicles, as well as frozen-thawed human pre-pubertal/adult follicles. The expression of some important markers of granulosa cells (AMH) and oocytes (GDF-9) was assessed for the characterization of the culture system.

Better understanding of AMH, GDF-9, and BMP-15 implication in follicular development in vitro was studied in cultured mouse primary follicles, and ovaries.

A culture system that leads to the growth of cryopreserved human primordial follicles to secondary follicles was determined. It supports oocytes and granulosa cells functions over a relatively long period of culture in vitro. The pattern of differentiated gene expression (GDF-9, AMH & BMP-15) in primary follicles grown in vitro remained comparable to the in vivo situation.

Curriculum Vitae

Born 29 June 1971 in Yaoundé Cameroon. Graduate training included internship in internal medicine, Department of Gastroenterology at Leicester General Hospital, UK (July-Aug 1998), St. James's Hospital Leeds, UK (July-Aug 1999), and residency at the Hospital for railway Workers, Kharkov, Ukraine (1999-2000). Graduated from School of Medicine (MD), Kharkov National University, Ukraine (1993-2000). Then earned a master degree in Medical and Pharmaceutical Research in 2002 at Vrije Universiteit Brussel. From 2002, PhD training at Vrije universiteit Brussel.