Promotor
Prof. dr. Karen Sermon
Department of Embryology and Genetics
Vrije Universiteit Brussel

Copromotoren
Prof. dr. Inge Liebaers
Department of Embryology and Genetics and Centre for Medical Genetics, UZ Brussel
Vrije Universiteit Brussel

Em. prof. dr. André Van Steirteghem
Department of Embryology and Genetics and Centre for Reproductive Medicine, UZ Brussel
Vrije Universiteit Brussel

Leden van de examencommissie
Prof. dr. Anna Veiga
Centre de Medicina Regenerativa de Barcelona
Spain

Prof. dr. Carlos Simon
Centro de Investigation Principe Felipe
Valencia University, Spain

Prof. dr. Petra De Sutter
Afdeling Reproductieve Geneeskunde UZ Gent
Universiteit Gent

Prof. dr. Leo van Grunsven
Department of Cell Biology
Vrije Universiteit Brussel

Dr. Sarah Snykers
Department of Toxicology, Dermato-cosmetology and Pharmacognosy
Vrije Universiteit Brussel

Prof. Chris van Schravendijk, voorzitter
Diabetes Research Center
Vrije Universiteit Brussel

Doctoraat in de Medische Wetenschappen
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UITNODIGING
Voor de openbare verdediging van het doctoraatsproefschrift van

Ileana Mateizel

dinsdag 2 maart 2010
U wordt vriendelijk uitgenodigd op de openbare verdediging van het proefschrift van

**Ileana MATEIZEL**

*‘Human Embryonic Stem Cells: challenges and novel approaches’*

Op **dinsdag 2 maart 2010 om 17 uur**
in auditorium **P. Brouwer** van de Fachuit 7eke, Brussel

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**Situering van het proefschrift**

Human ESC are pluripotent cells derived from the preimplantation embryos that have unlimited self-renewal and differentiation potential and therefore represent a highly attractive, renewable source of cell populations for different applications.

The thesis presents the successful derivation of 22 hESC lines derived at the VUB/UZ Brussel from In Vitro Fertilization (IVF) and Preimplantation Genetics Diagnosis (PGD) embryos, as well as from single blastomere embryos.

Culture conditions for hESC are still suboptimal and may induce chromosomal abnormalities. We have demonstrated that CD30, a marker previously reported to identify the chromosomally abnormal hESCs, is expressed in all hESC lines and is not correlated with the presence of chromosomal abnormalities. We concluded therefore that CD30 is not a good tool for purging abnormal cells from hESCs cultures and that other biomarkers should be investigated.

In addition, we reported the efficient differentiation of hESCs into a highly homogenous population of osteoprogenitor-like cells that may facilitate the large-scale production of differentiated cells for different applications, including cell-based therapy.

The last part of the thesis points to the major challenges that need to be addressed during the translation from bench to clinic, and to the novel approaches that are being developed to meet those challenges.

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**Curriculum Vitae**

Ileana Mateizel was born in Bucharest, Romania on 8 November 1967. She graduated from the University of Bucharest and received an MSc in Medical and Pharmaceutical Research at the Vrije Universiteit Brussels in 2002. In the same year she started her PhD studies in the Department of Human Embryology and Genetics (EMGE) of the Vrije Universiteit Brussel. Together with her colleagues she started the first human embryonic stem cell laboratory at the VUB and derived the first human embryonic stem cell lines in Belgium.

She was involved in research on different aspects of human embryonic stem cells, such as derivation from embryos diagnosed as carrying monogenic disorders after preimplantation genetic diagnosis, culture and differentiation. Her research activities resulted in 7 publications in international peer-reviewed journals, in 4 of which she was the first author. Since September 2009 she is working as a clinical embryologist in the Centre for Reproductive Medicine of the UZ Brussels.