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FACULTEIT GENEESKUNDE EN FARMACIE

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 Faculteit Geneeskunde & Farmacie, Laarbeeklaan 103, 1090 Brussel

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.

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.