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Geneeskunde & Farmacie

GF

PhD in Pharmaceutical Sciences
2015-2016

INVITATION to the Public defence of

Eva RAMBOER

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

Development of a differentiated hepatic *in vitro* system for long-term pharmaco-toxicological studies based on (epi)genetic modification of primary hepatocytes

Thursday 15 October 2015
Auditorium **Vanden Driessche**, 17:30
Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

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Summary of the dissertation

Before any new pharmaceutical can enter the market, its efficacy and safety must be ensured through rigorous testing. Over the years, animal studies have been routinely conducted for this purpose. However, the use of living animals for pharmaco-toxicological research has been highly criticized and seems no longer acceptable. Increasing attention currently goes to the development and use of appropriate *in vitro* models, especially liver-based testing platforms. Among all the hepatic *in vitro* models available today, cultures of primary human hepatocytes still remain the gold standard *in vitro* tool for pharmaco-toxicological studies. Nevertheless, their use is largely impeded by the occurrence of dedifferentiation and the ubiquitous shortage of primary human hepatocytes for research purposes. The present doctoral thesis project tried to contribute to these two yet unresolved difficulties in the field of liver-based *in vitro* modelling. In the first part, the use of epigenetically-stabilized primary hepatocyte cultures for long-term testing purposes was explored, with special focus on hepatic drug transporters. The second part was focused on the development and characterization of a new human hepatic cell line.

Curriculum Vitae

Eva Ramboer was born on March 19th 1987 in Brussels-Belgium. In 2005, she started the study of Pharmaceutical Sciences at the Vrije Universiteit Brussel (VUB) and graduated as a Pharmacist and Master in Drug Development in 2010 with the highest distinction. She was rewarded for her academic achievements with the "Pharmacien et Doctoresse Nedeljkovitch" price by the Belgisch Genootschap voor Farmaceutische Wetenschappen. During her master thesis work, performed at the Department of *In Vitro* Toxicology and Dermato-Cosmetology, she became interested in the development of liver-based *in vitro* test systems. After her graduation, she obtained a grant from the Research Foundation Flanders (FWO) and started her PhD under promotorship of Prof. Mathieu Vinken, Prof. Tamara Vanhaecke and Prof. Vera Rogiers in October 2010. Her core scientific interests and experiences are situated in the field of *in vitro* toxicology, drug transporters, cellular immortalization and molecular biology. Eva is author of eight publications in peer-reviewed journals and books among which five as first author. Her work was presented at national and international scientific congresses orally and by poster, and she obtained the award for best oral presentation of the student session at the European Society of Toxicology *In vitro* Congress 2012 in Lisbon-Portugal. In addition, she supervised three master theses in Pharmaceutical Sciences and 1 master thesis in Biomedical Sciences. After her PhD, she would like to pursue a career within the pharmaceutical industry.