IMCB Invited Speaker



Speaker : **Dr. Noémi Van Hul**

Postdoctoral Research Assistant, Université Catholique de Louvain (UCL) Brussels, Belgium

Date : 1 November 2013, Friday

Time : 11:00AM - 12:00PM

Venue : IMCB Seminar Room 3-46, Level 3, Proteos, Biopolis

Host : Dr. Philipp Kaldis

Seminar :

Role of liver progenitor cells during chronic liver injury

Injury of the healthy liver elicits a rapid regenerative response from mature hepatocytes and other cell types. However, when the injury is more severe and becomes chronic a facultative compartment of liver progenitor cells (LPC) is activated, giving rise to cords of bipotential transit-amplifying cells (a process often called oval cell reaction in rodents and ductular reaction in humans), which are believed to ultimately differentiate into hepatocytes or biliary cells. Themechanisms controlling progenitor cell activation, expansion and differentiation are under intense investigation as LPC could represent a facultative reservoir for generating mature hepatocytes for alleviating liver insufficiency. Recapitulation of the differentiation process in stem cells may generate cells for liver-cell therapy, which is undergoing growing demand due to organ shortage for liver transplantation.

By using two widely used mouse models of liver progenitor cell activation (CDE and DDC dietary models), we characterized the LPC expansion and identified the role of mesenchymal cells, inflammatory cells and extracellular matrix by modulating these components of the LPC microenvironment. To examine the fate of LPC in vivo, we performed lineage-tracing studies using double transgenic OPN-iCreERT2;ROSA26RYFP allowing us to permanently label the LPC (and cholangiocytes) with a YFP-tag. We observed that LPC gave rise to a small proportion of hepatocytes that are well differentiated, polarized and responding to pro-proliferative stimuli as normal native hepatocytes.

About the Speaker :

After completing my Master's studies in Biomedical Sciences and in Cellular Biotechnology at the Katholieke Universiteit Leuven (KUL, Belgium), I was accepted as a PhD student in the laboratory of gastroenterology at the Université catholique de Louvain (UCL, Belgium) under the supervision of Prof Leclercq. There, I started the department of 'liver progenitor cells' and implemented mouse models of LPC activation and IHC staining techniques. My main focus was to investigate the role of the microenvironment on the behaviour of the LPC. Rapidly, I was joined by two other PhD students working on the field of the differentiation process and the transplantation capacity. After my PhD, I spent 6 months at the Laboratory of Prof Roskams at the KUL, where I learned about microdissection. Currently, I am back at the laboratory of my PhD, to finish my work in the OPN-iCreERT2ROSA26RYFP mice.

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