Laboratory of Stem Cells and Cancer- Université Libre de Bruxelles

http://blanpainlab.ulb.ac.be/

PhD student position

4 years grant (2 years renewable), starting October 2022

Our laboratory is located on the medical campus (Erasme) of Université Libre de Bruxelles (Belgium) and is headed by Prof. Cédric Blanpain. This project will be performed under supervision of Dr. Alexandra Van Keymeulen.

Our research focuses on deciphering the cell hierarchy, the cell identities and cell communications in the mammary gland, as well as the cell of origin of breast cancer, cancer progression and tumour heterogeneity. We developed new mouse lines to specifically introduce oncogenic mutations and a fluorescent reporter into the different cell types of the mammary gland. We use state of the art imaging, cellular and molecular biology techniques and transplantation experiments to study the cell fate in physiological conditions and upon oncogenic mutations, to identify the cell of origin of breast cancer, the early steps of tumorigenesis, tumour heterogeneity and cell communications.

Research Project

Evidences supporting endogenous retrotransposon expression during development and cancer are starting to accumulate, yet this process and its implications on development, cell biology and tumorigenesis is still very poorly known. In this audacious project, we will divide the project in 3 aims:

1. Defining whether viral mimicry is occurring during development of mammary gland.
2. Defining whether viral mimicry occurs during breast tumorigenesis.
3. Defining the functional role of viral mimicry in breast development and tumorigenesis.

This project will lead to a better comprehension of the underestimated and poorly known role of endogenous retrovirus expression in development and tumorigenesis and could open doors to completely new areas of research.

Methods: in vivo mouse models of mammary gland and breast cancer, FACS cell sorting, RNAseq, ATACseq, Chipseq, qPCR, 3D cultures, confocal microscopy.

Skills: Master degree in Biomedical science, molecular biology, biochemistry or equivalent, FELASA certification. High motivation, enthusiasm and scientific curiosity are mandatory. Ability to learn fast, to work independently, meticulous, good communication would be appreciated.

Contact: To apply, send a motivation letter, a C.V. and two references with their email address to Alexandra Van Keymeulen (alexandra.van.keymeulen@ulb.be)