Study of aberrant Super Enhancers activation in the transformation and maintenance of Acute Myeloid Leukemia

A post-doctoral position is available in the Group "Genetic and Epigenetic control of normal and malignant hematopoiesis" headed by Dr. Camille Lobry in the "Genomes and Cell Biology of diseases" Unit (Inserm U944/CNRS UMR7212) located in the Saint Louis Hospital Campus in Paris.

Acute Myeloid Leukemia (AML) is the most common acute leukemia diagnosed in adults and is accounted for approximately 25000 new diagnosed cases per year in Europe. Despite the use of chemotherapy and stem cell transplantation, AML has a dismal overall 5-year survival of 24% and almost 50% of AML patients relapse after treatment. Currently, there are no targeted therapy for this disease making the study of the molecular mechanisms of its induction and progression of biological and clinical significance. To date, most efforts in understanding AML induction and progression have focused on the study of isolated oncogenes or the combination of few genes. Study of the dynamic interplay between DNA regulatory elements, such as enhancers, and gene expression program could unravel novel collaborative oncogenic mechanisms and help design more effective combinatorial therapeutics. Recently, Super-Enhancers (SE) have been characterized as a particular class of enhancers controlling cell type specific gene expression programs. Particularly, SE tend to be enriched around and control genes known to play oncogenic functions. Therefore, identification of the direct functional and physical relationship between SE and their target oncogenes could help decipher complex coordinated gene expression programs that lead to leukemogenesis.

Our goal is to study mechanisms of SE formation in leukemic context, interrogate their functional activity using high throughput screening technologies, identify genes directly regulated by these SE using genome-wide chromosome conformation capture approaches and validate their importance *in vivo*. These experiments will allow characterization of molecular mechanisms involving essential SE for AML maintenance and could help identify novel signaling pathways and design novel therapies.

Applicants should hold a PhD, be highly motivated and able to work independently. Applicants should have experimental expertise in molecular biology and cell culture techniques. Conceptual and technical background in hematology, FACS, mouse handling techniques, Chromatin-immunoprecipitation as well as basic understanding of bioinformatics would be greatly appreciated.

Our lab is located in the Jean Bernard building located in the campus of the Institut de Recherche Saint Louis in Saint Louis Hospital and benefits from the top-level scientific environment in the fields of leukemia research, virology, cellular and molecular biology, as well as of state-of-the-art technological facilities.

The position is funded for 3 years by Inserm through INCa PLBIO grant
To apply, please send: curriculum vitae, motivation letter and the names/contact information of two referees to Dr **Camille Lobry**

email : camille.lobry@inserm.fr
Web page: https://gencelldis.fr/c-lobry-team/

Inserm U944 / CNRS UMR 7212
Team *Genetic and Epigenetic control of normal and malignant hematopoiesis*
Institut de Recherche Saint Louis
16 rue de la Grange aux Belles
75010 Paris
camille.lobry@inserm.fr