

2 years postdoctoral position in bioinformatics at the Bordeaux Institute of Oncology

Start date: September 1st, 2023

Recruiting Team: «Translational Research In Oncodermatology and Orphan skin diseases», at the Inserm/University of Bordeaux Unit 1312-BRIC (<https://www.bricbordeaux.com/bric-team>)

Project description

Sézary Syndrome (SS) is a rare but an aggressive epidermotropic cutaneous T-cell lymphoma defined by erythroderma, pruritis and a circulating atypical CD4+ T-cell clonal population. Our team has developed Sézary cells (SC) cell lines derived from fresh SS cell patients to evaluate their functional hallmarks and response to therapy. In recent years, both phenotypic analysis and next-generation sequencing have revealed significant interpatient diversity of Sézary Syndrome. Indeed, in addition to their phenotypic diversity, SC have a great heterogeneity of mutations involving oncogenes, tumor suppressor genes or epigenetic modulators with a mixture of drivers and passengers events at various rates. SC cell lines confirmed genomic and immunophenotypic inter-individual diversity and revealed different subpopulations among original clonal T-cells of the same patient. **The project will decipher SS heterogeneity for a better understanding of the disease and to help therapeutic approach.**

Responsibilities

Exploration of tumor heterogeneity of SC cell lines to characterize subpopulations with specific properties thanks to **single-cell transcriptional profiling**. Establishment of **pseudotime trajectories** to explore proliferation and differentiation statement of subpopulations.

Exploration of genomic heterogeneity on tumor patients samples and its evolution from cancer initiation to dissemination with **deconvolution algorithmic models** using acquired whole exome sequencing data for a better understanding of lymphoma initiating cells and subclones involved in lymphoma progression.

Candidate profile :

- PhD with at least one first author publication
- Enthusiastic and highly motivated researcher with strong interest in biology
- Ability to work with a good team spirit (communication, cooperation) with the team and external research groups
- Ability to participate in determining research strategies and new research directions
- Experiences in NGS data (handling, processing, and analysis), in single cell is a plus
- Familiar with biological databases
- Good programming skills (languages Python, Perl, R)
- Cancer biology background is a plus (cancer metabolism, tumour genomics, innate immune responses)

Work environment :

The candidate will benefit from the high-level scientific environment of the newly created BRIC Unit and of state-of-the-art technological platforms. The lab is located in Bordeaux, Southwestern France, an international tourist destination for its architectural and cultural heritage and a world wine capital.

How to apply :

Interested candidates should send a CV, cover letter summarizing research interests, professional experience, and career goals and the names of two referees to audrey.gros@chu-bordeaux.fr and macha.nikolski@u-bordeaux.fr

Deadline for applications: May 1st, 2023