Post-Doctoral Position
Bone marrow supportive niches in B-cell Acute Lymphoblastic Leukemia

Scientific summary:

B-cell acute lymphoblastic leukemia (B-ALL), malignant counterpart of BM differentiating B cells, represents the most common cancer in childhood and, although less frequent, corresponds to a similar number of cases in adults. New combinations of chemotherapeutic agents, have dramatically improved disease outcome in children, but the overall survival of adults at diagnosis and after relapse remains low. Resistance to treatment in B-ALL partially relies on protective cues provided by BM stromal cells.
Using state-of-the-art technologies, our research focus on deciphering the interactions between leukemic cells and the different constituents of the bone marrow microenvironment. Our team has a special interest on the cell-non-autonomous cues influencing leukemogenesis and B-ALL progression. Genetic mouse models available in the lab and strong relationships with the clinical hematology department allow us to address both fundamental and translational questions with the goal of identifying new potential therapeutic targets. The post-doc candidate will have in charge the investigation of elements affecting niche homeostasis and having a potential influence on B-ALL development using transgenic mouse models and patient-derived xenografts.

Lab localization and description:
Rennes is located in Brittany in the west of France. In addition to its Celtic heritage, Rennes is at 1h from St Malo on the Channel, 1h15 from the Mont St Michel, 1h20 from Vannes on the Atlantic Ocean and 1h30 from Paris.
Located in the medical campus of Rennes University, our group belongs to the academic INSERM U1236 research team. Our lab has a major expertise in the pathophysiology and microenvironment of B-cell lymphoproliferation with a special interest in the crosstalk between tumor cells and their supportive niches. The team works together with the clinicians of the service of clinical hematology in Rennes hospital and has a facilitated access to patient samples.
As a post-doc, you will have a full access to several facilities available in the lab and within the BIOSIT core facilities (https://biosit.univ-rennes1.fr) including confocal microscopes, flow cytometry/cell sorter facility, single cell qPCR and scRNAseq plateform…

Candidate profile:

We are seeking a PhD/MD-PhD with a strong experience in mouse models, flow cytometry, confocal microscopy and cell culture. An expertise in hematopoiesis, tumor microenvironment and bioinformatics would be welcome.
We are looking for a highly dynamic, flexible and proactive post doc motivated to guide master and PhD students.

This is a 2-year position with a possible 1-year reconduction available from September 2022.

More information can be found on the webpage of the team:

https://mobidic.univ-rennes1.fr/project-4-bone-marrow-supportive-niches-b-all

Contact:

Applicants are invited to send a CV (with list of publications, research experiences and referees) and a cover letter to:

Dr Stéphane Mancini: stephane.mancini@univ-rennes1.fr
Dr Tony Marchand: tony.marchand@univ-rennes1.fr

Selected references:

- Delahaye MC, Salem KI, Pelletier J, Aurrand-Lions M, Mancini SJC. Toward Therapeutic Targeting of Bone Marrow Leukemic Niche Protective Signals in B-Cell Acute Lymphoblastic Leukemia. ***Front Oncol.*** 2021 Jan 8;10:606540. doi: 10.3389/fonc.2020.606540.

- Marchand T, Pinho S. Leukemic Stem Cells: From Leukemic Niche Biology to Treatment Opportunities. ***Front Immunol.*** 2021 Oct 15;12:775128. doi: 10.3389/fimmu.2021.775128. PMID: 34721441; PMCID: PMC8554324.

- Balzano M, De Grandis M, Vu Manh TP, Chasson L, Bardin F, Farina A, Sergé A, Bidaut G, Charbord P, Hérault L, Bailly AL, Cartier-Michaud A, Boned A, Dalod M, Duprez E, Genever P, Coles M, Bajenoff M, Xerri L, Aurrand-Lions M, Schiff C, Mancini SJC. Nidogen-1 Contributes to the Interaction Network Involved in Pro-B Cell Retention in the Peri-sinusoidal Hematopoietic Stem Cell Niche. ***Cell Rep.*** 2019 Mar 19;26(12):3257-3271.e8. doi: 10.1016/j.celrep.2019.02.065.

- Pinho S, Marchand T, Yang E, Wei Q, Nerlov C, Frenette PS. Lineage-Biased Hematopoietic Stem Cells Are Regulated by Distinct Niches. ***Dev Cell.*** 2018 Mar 12;44(5):634-641.e4. doi: 10.1016/j.devcel.2018.01.016.

- Zidi B, Vincent-Faber C, Pouyet L, Seillier M, Vandevelde A, N'guessan P, Poplineau M, Guittard G, Mancini SJ*, Duprez E*, Carrier A*. TP53INP1 deficiency maintains murine B lymphopoiesis in aged bone marrow through redox-controlled IL-7R/STAT5 signaling. ***PNAS***. 2019. 116(1):211-216. doi: 10.1073/pnas.1809980116.

- Aurrand-Lions M, Mancini SJ. Murine Bone Marrow Niches from Hematopoietic Stem Cells to B cells. ***IJMS***. 2018. 19(8):E2353. doi: 10.3390/ijms19082353.