



Project title	Targeting metabolic dependencies in leukemia		
Study level(s)	<input checked="" type="checkbox"/> MSc	<input checked="" type="checkbox"/> PhD	<input type="checkbox"/> Postdoctorate
Principal investigator(s)	Marissa Rashkovan		
Project duration	2-4 years		
Start date	Winter or summer 2024		

Date of posting: 2023-08-14

Research laboratory presentation

The laboratory of Dr. Rashkovan opened in January 2023 at the CHU Sainte-Justine Research Center. Our research focuses on the study of the metabolism of early T cell leukemias. We study the metabolic changes that occur in these leukemias, and the interaction of metabolic pathways with epigenetic regulation and cell signaling pathways. To do this, we use many different technologies, including flow cytometry, culture of both cell lines and primary patient blasts, CRISPR screens and editing technology, pharmacodynamic studies both *in vitro* and *in vivo*, RNAseq, ATACseq, and ChIPseq. We are looking for enthusiastic, motivated students to join our team!

Research project description

In vitro genome-wide CRISPR screens have identified multiple metabolic genes as druggable targets in ETP-ALL. However, *in vitro* screens do not consider input from organ systems and the tumor microenvironment. In this context, CRISPR/Cas9 technology offers a unique opportunity to screen a broad range of leukemia cell lines and patient-derived xenografts *in vivo*. This project will make use of inducible Cas9-expressing cell lines and patient-derived xenografts to profile the *in vivo* metabolic vulnerabilities of ETP-ALL and T-ALL using CRISPR. The applicant will engineer some of the inducible cell lines, perform the *in vivo* CRISPR screens, analyse the results from the screens, and prioritize targets for therapies.

Required training and profile

A background in immunology or molecular biology is preferred, but not necessary. Above all, we are looking for a highly motivated student who is enthusiastic, ready to learn, and works well as part of a group.

Submit your application

Candidates must send the required documents before **10/2023** to **Marissa Rashkovan** by email at marissa.rashkovan.hsj@ssss.gouv.qc.ca

Please provide:

- ✓ *Curriculum vitæ*
- ✓ Most recent transcripts



✓ Cover letter

✓ References

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Equity, diversity and inclusion

The masculine gender is used without discrimination and for the sole purpose to facilitate reading. The CHU Sainte-Justine subscribes to the principle of equal access to opportunities and invites women, members of visible and ethnic minorities, persons with disabilities and Indigenous people to apply. We would appreciate it if you could inform us of any disabilities that would require technical and physical accommodation adapted to your situation during the selection process. Please be assured that we will treat this information as confidential.

Studies at the CHU Sainte-Justine Research Center

Pursue your [graduate or postdoctoral studies](#) at the **CHU Sainte-Justine Research Center**, and be one of the 500 students, fellows and interns involved in accelerating the development of knowledge in the field of maternal, child and adolescent health, whether in basic or clinical research. Under the supervision of prominent scientists, especially in leukemia, rare pediatric diseases, genetics, perinatology, obesity, neuropsychology and cognition, scoliosis and rehabilitation, you will have the opportunity to work with multidisciplinary scientific teams and collaborators from all over the world.

About the CHU Sainte-Justine Research Center

CHU Sainte-Justine Research Center is a leading mother-child research institution affiliated with Université de Montréal. It brings together more than 200 research investigators, including over 90 clinician-scientists, as well as 500 graduate and postgraduate students focused on finding innovative prevention means, faster and less invasive treatments, as well as personalized approaches to medicine. The Center is part of CHU Sainte-Justine, which is the largest mother-child center in Canada and the second most important pediatric center in North America. More on research.chusj.org

