Research Centre CHU Sainte-Justine Mother and Child University Hospital Centre
Université de Montréal

Project title	**Elucidating cytomegalovirus reinfection and strain-specific immunity**		
Study level(s)	☒ MSc	☒ PhD	☒ Postdoctorate
Principal investigator	Soren GANTT, MD PhD MPH		
Project duration	5 years		
Start date	From Jan 2024 to Dec 2029		

Date of posting: 2023-11-24

Research laboratory presentation

The Gantt Lab has a number of projects related to CMV virology and immunology that aim to better understand how the virus is transmitted, in order to inform the development of effective prevention strategies, including the development of an effective vaccine. These studies use a wide variety of approaches: using samples from human longitudinal cohort studies of mother-infant CMV transmission pairs, mouse models of infection using recombinant murine CMV constructs, mathematical modeling, and clinical trials of CMV vaccines.

Research project description

This project focuses on a mouse model of CMV infection to understand the viral and host determinants of reinfection. Human CMV is highly variable, and many different strains circulate and cause infection and reinfection. CMV reinfection with different viral strains occurs frequently, including during pregnancy, which often causes fetal infection. There is little understanding of the importance of CMV strain variation or how CMV is able to avoid host immunity and cause reinfection. There are also numerous strains of murine CMV (MCMV) that have been isolated, that we use to infect and reinfect mice. We use luciferase recombinant reporter viruses to quantify viral replication by bioimaging in live mice, and a variety of immunologic methods (e.g., flow cytometry) to analyze the strain-specific immune responses. Thus, we are able to determine the specific strain differences that allow immune escape and reinfection as well as the immune responses that are most important for cross-strain protection.

Required training and profile

Training: A strong background in virology and immunology is required.

General: The ideal candidates will have outstanding general lab skills and attention to detail, work well with others, be industrious, reliable, conscientious, intellectually curious, able to solve problems independently, and communicate well.

Specific expertise: Experience with mouse experiments, viral culture and/or flow cytometry is highly desirable.

Conditions

The candidate must register at the Université de Montréal in the relevant Program in Microbiology and Immunology (MSc, PhD or Postdoctoral fellowship).

Research Centre
CHU Sainte-Justine
Mother and Child University Hospital Centre
Université de Montréal

Funding will be provided for the duration of the degree program for MSc and PhD students, or for a minimum of 2 years for a postdoctoral fellow. All trainees will nonetheless be required to apply for scholarships and salary awards.

Submit your application

Candidates must send the required documents to **Dr. Soren GANTT** at soren.gantt@umontreal.ca

Please provide:

√ *Curriculum vitæ*
√ Most recent transcripts
√ Cover letter
√ References

Soren GANTT, MD PHD MPH
Centre de recherche du CHU Sainte-Justine
3175 Côte Sainte-Catherine
Montréal Qc H3T 1C5
Canada

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