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A PAHO/WHO Collaborating Centre for Tuberculosis Research

TB Seminar

Friday, Mar. 12, 2021

Time: 1–2 PM

Please note that this seminar will be 60 minutes.

By Zoom

Meeting ID: 814 301 0609

Passcode: 91SDws



Dr. Nargis Khan, PhD

Dr. Nargis Khan completed her PhD at IMTECH-Jawaharlal Nehru University, New Delhi, India. Currently, she is a postdoctoral fellow with Dr. Maziar Divangahi at Meakins-Christie Laboratories at MUHC, McGill University. Her PDF research study at McGill is focused on three conceptual frameworks of immunity to TB: Host Resistance, Disease tolerance and Trained immunity. Through her PDF program, she has been a proliferative investigator with outstanding publications in Cell, Science Immunology, Mucosal Immunology. She received numerous awards, including FRQS and CIHR.

Reprogramming of hematopoietic stem cells: New insights into the evasion of host innate immunity by *Mycobacterium tuberculosis*

Mycobacterium tuberculosis (Mtb) is primarily a respiratory pathogen. However, the growth of *Mtb* is not limited to the lungs but also disseminate to peripheral lymphoid organs and even the bone marrow (BM). Considering the BM is home to hematopoietic stem cells (HSCs), the earliest precursor of immune cells including monocytes and macrophages, translocation of *Mtb* to this *privileged site* may have significant consequences on the pathogenesis and chronicity of TB. Interestingly, BM suppression in TB was documented in the late 1980s, and it has been shown that *Mtb* persists in the BM by exploiting mesenchymal stem cells as a niche for its survival. However, the effect of *Mtb* on HSC function and the subsequent immune response are incompletely understood. This talk will discuss about the impact of *Mtb* on the hematopoiesis in the BM and its consequences on trained immunity. Accesses of *Mtb* in the BM specifically target innate immunity via imprinting HSC populations with a unique transcriptomic profile that suppresses myelopoiesis and generates impaired trained immunity via IFN- γ /iron axis to promote *Mtb* infection.

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