

## Seminar in Microbiology

Monday, 4<sup>th</sup> September, 2017

Salle de séminaire, E07.3347.a, CMU

**11:30 – 12:30**

**Prof. Bavesh Kana**



DST/NRF Centre of Excellence for Biomedical TB Research University  
of the Witwatersrand, Johannesburg, South Africa

### **Can peptidoglycan remodeling reveal novel drug targets and probe for phenotypic complexity in sputum-derived mycobacteria?**

Bavesh Kana was appointed as an Early Career Scientist of the Howard Hughes Medical Institute and was selected as one of the 200 top young South Africans by the Mail and Guardian newspaper. His work addresses fundamental questions on the pathogenesis and clinical manifestation of tuberculosis, with a specific focus on the identification and characterization of differentially culturable tubercle bacteria (DCTB) in individuals. In addition, he studies remodelling of the mycobacterial cell wall to identify new drug targets. As tuberculosis patients harbour drug tolerant DCTBs that are unable to grow on solid media but whose growth can be recovered in liquid media supplemented with resuscitation promoting factors (Rpf), Dr. Kana's lab is also studying Rpf and they found operationally distinct bacterial subpopulations from the sputum of individuals that have variable dependency on Rpf, including a Rpf-independent subclass. This new work will be discussed.

#### **Recent publications:**

- An Amidase\_3 domain-containing N-acetylmuramyl-L-alanine amidase is required for mycobacterial cell division. Senzani et al. *Sci Rep.* 2017.
- Relapse, re-infection and mixed infections in tuberculosis disease. Mclvor et al. *Pathog Dis.* 2017.
- The essential mycobacterial amidotransferase GatCAB is a modulator of specific translational fidelity. Su et al. *Nat Microbiol.* 2016.
- Cleavage of the moaX-encoded fused molybdopterin synthase from *Mycobacterium tuberculosis* is necessary for activity. Narrandes et al. *BMC Microbiol.* 2015.
- bis-Molybdopterin guanine dinucleotide is required for persistence of *Mycobacterium tuberculosis* in guinea pigs. Williams et al. *Infect Immun.* 2015
- Comparative genomics for mycobacterial peptidoglycan remodelling enzymes reveals extensive genetic multiplicity. Machowski et al. *BMC Microbiol.* 2014.

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