THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY
Division of Life Science

Seminar Notice

"Structure, function, and evolution of bacterial contractile injection systems"

by

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Abstract

Bacterial cell-cell interactions are important for ecological settings including pathogenesis, symbiosis or biofilms. Most interactions are mediated by the translocation of effectors across cell envelopes. The translocation process is accomplished by macromolecular machines.

The goal of the Pilhofer Lab is to establish an understanding of the structure, function, and evolution of these cellular machineries across different scales of resolution. We apply the key technology electron cryotomography, which allows bridging the gap of resolution between Structural Biology and Cell Biology and integrating data from both fields.

Our studies are focused on a diverse group of bacterial phage tail-like assemblies that utilize a contractile mechanism to inject effectors into target cells. These systems function by two different modes of action. Extracellular contractile injection systems (eCIS) are released from the producing cell and function in extracellular space. On the other hand, the type 6 secretion system (T6SS) acts in the bacterial cytoplasm, attached to the cytoplasmic membrane.

I will present our recent discovery and characterization of a novel T6SS (Böck et al, Science, 2017), as well as unpublished data suggesting a third mode of action of a previously unrecognized system. I will also comment on our efforts establishing a cutting-edge sample thinning technology (cryo-focused ion beam milling) that allows us to overcome the restriction of electron cryotomography to thin samples.

Date	**:**	**3 January 2018 (Wednesday)**
Time	**:**	**3:30 p.m.**
Venue	**:**	**Room 4503 (Lifts 25-26)**
		The Hong Kong University of Science & Technology
		Clear Water Bay, Kowloon

(Host faculty: Prof. Mingjie Zhang)

ALL ARE WELCOME!!