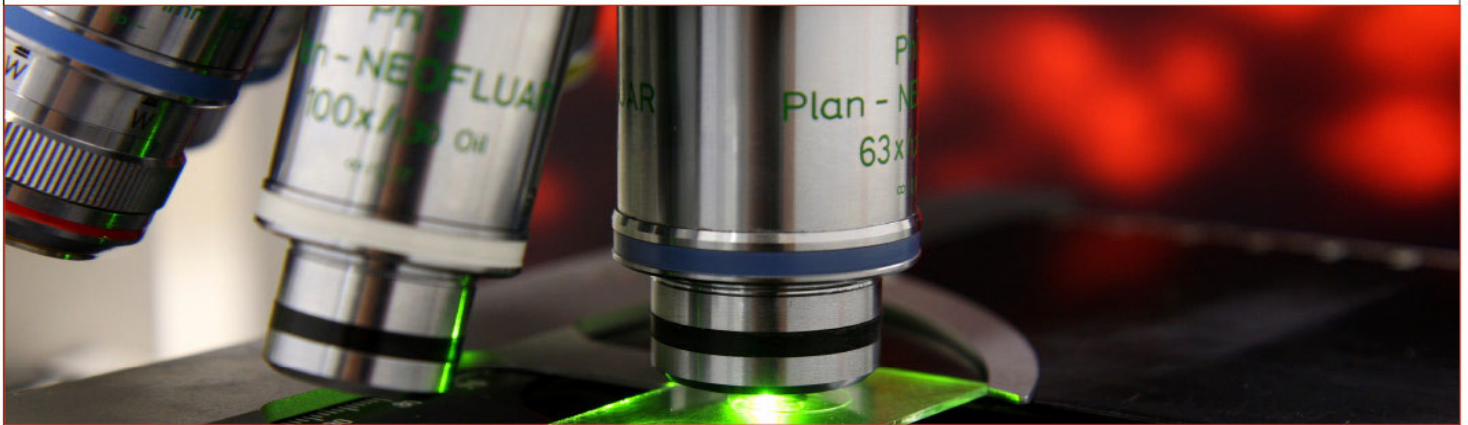


SÉMINAIRES ET CONFÉRENCES



Natalie Zeytuni

Department of Anatomy and Cell Biology, McGill University

« Structural insights into the cytotoxic peptides ATP-driven exporter essential to pathogenicity of drug resistant *Staphylococcus aureus* by hybrid approaches »

Staphylococcus aureus is a major human pathogen that has acquired an alarming broad-spectrum resistance to many of the commonly used antibiotics including beta-lactams such as penicillin. *S. aureus* often causes hospital- and community- associated infections responsible for significant morbidity and death. Staphylococci infections are mediated through a large array of secreted toxins including the phenol-soluble modulins (PSMs). PSMs are amphipathic, α -helical peptides with pronounced surfactant-like properties that have multiple key roles in pathogenesis, including cytolysis of red and white blood cells, abscess formation, biofilm development and trigger receptor-mediated inflammatory response. A specialized ATP-binding cassette (ABC) transport system exports PSMs to the extracellular environment and is essential for bacterial growth by providing an immunity against self-expressed PSMs. Here, we present the structural characterization of the PSM transporter determined by high-resolution single-particle cryo-EM and X-ray crystallography accompanied with functional characterization *in vivo*. The observed alternations between different transport stages provide crucial mechanistic insights and sets the foundation for novel therapeutics design.



Faculté de médecine
Département de biochimie
et médecine moléculaire

Université 
de Montréal

Le lundi 3 mai 2021, 11h30

Invité de Christian Baron