

Seminar in Microbiology

Monday, 21st November, 2016

Salle de séminaire, E07.3347.a, CMU

11:30 – 12:30



Prof. Hubert Hilbi

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Virulence and communication of the amoeba-resistant pathogen *Legionella*.

The Hilbi lab uses macrophages and environmental protozoa, including the genetically tractable amoeba *Dictyostelium discoideum*, as well as phagocytes of the fruit fly *Drosophila melanogaster*, to analyze with biochemical, molecular and cell biological methods the infection mechanisms of *Legionella pneumophila*, an intracellular gamma-proteobacterium causing pneumonia “Legionnaires’ disease. They explore how bacterial and host factors interact, how and when intracellular vacuoles containing *L. pneumophila* form and how these bacteria communicate among each other and with different microorganisms via small signaling molecules to regulate virulence, adhesion and growth. The research of the Hilbi group contributes to identifying novel factors against amoebae-resistant bacteria and to controlling the growth of these pathogens in water systems.

Selected recent publications:

- *Legionella pneumophila* S1P-lyase targets host sphingolipid metabolism and restrains autophagy. **Proc Natl Acad Sci U S A.** 2016
- Metabolism of myo-Inositol by *Legionella pneumophila* Promotes Infection of Amoebae and Macrophages. **Appl Environ Microbiol.** 2016.
- Pathway analysis using (13) C-glycerol and other carbon tracers reveals a bipartite metabolism of *Legionella pneumophila*. **Mol Microbiol.** 2016.
- The α -hydroxyketone LAI-1 regulates motility, Lqs-dependent phosphorylation signalling and gene expression of *Legionella pneumophila*. **Mol Microbiol.** 2016.
- Inter-kingdom Signaling by the *Legionella* Quorum Sensing Molecule LAI-1 Modulates Cell Migration through an IQGAP1-Cdc42-ARHGGEF9-Dependent Pathway. **PLoS Pathog.** 2015.
- Phosphatidylinositol 4-phosphate and phosphatidylinositol 3-phosphate regulate phagolysosome biogenesis. **Proc Natl Acad Sci U S A.** 2015.