

Seminar in Microbiology

Monday, 19th June, 2017

Salle de séminaire, E07.3347.a, CMU

11:30 – 12:30

Dr Charlotte Odendall

Programme in Infection and Immunity,
King's College London, UK



Interferons: Tug of War between Host and Pathogen

Microbes are detected by receptors of the innate immune system, resulting in the production of inflammatory cytokines and interferons. Together, these products contribute to the eradication of most microbes, either directly or through activation of adaptive immunity. In turn, pathogens are able to circumvent these mechanisms. For example, many Gram-negative bacteria encode type III secretion systems (T3SSs), molecular needles that enable the transport of virulence proteins into the host cell cytosol. These effector proteins hijack the cell machinery, and enable bacteria to parasite host cells, and/or to hide from the innate immune system. The Odendall group is interested in both sides of this interaction. We study the signalling pathways that drive the expression of interferons and cytokines, as well as the effects these factors have on bacterial infections. We also aim to identify virulence mechanisms that enable bacteria to inhibit host processes, in particular innate immune pathways.

Key publications:

- Odendall and Kagan (2017) Activation and pathogenic manipulation of the sensors of the innate immune system. **Microbes and Infection**
- Rosadini et al, (2015) A single immune evasion strategy dismantles the entire transcriptional response induced by Toll-like Receptor 4. **Cell Host and Microbe**
- Odendall and Kagan (2015) The unique regulation and functions of type III IFNs in antiviral signaling, **Current Opinion in Virology**
- Odendall et al, (2014) Diverse intracellular pathogens activate type III Interferon expression from peroxisomes, **Nature Immunology**
- Odendall and Kagan (2013) Peroxisomes and the antiviral responses of mammalian cells, **Subcellular Biochemistry**
- Odendall et al (2012) The *Salmonella* kinase SteC targets the MAP kinase MEK to regulate the host actin cytoskeleton, **Cell Host and Microbe**
- Dixit et al (2010) Peroxisomes are signaling platforms for antiviral innate immunity, **Cell**

Contact: Thierry Soldati