Graduate Schools
Infection Immunity and Cancer, UniGe & UniL: CUS
Biology & Medicine, CMU

Seminar in Microbiology

Monday, 6th June, 2016

Salle de séminaire, E07.3347.a, CMU

11:30 – 12:30

Prof. Dr. Regine Hengge

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Physiological stratification and c-di-GMP signaling in the control of *E. coli* biofilm architecture and morphogenesis.

Regine Hengge's group elucidates the signal transduction pathways and regulatory networks that underlie biofilm formation and architecture in the model organism *Escherichia coli*, including the important pathogen *E. coli* O104:H4. Specifically, the Hengge group is exploring how the bacterial second messenger cyclic-di-GMP controls biofilm formation through a complex and cooperating cyclic-di-GMP regulatory network via of 29 enzymes that control its levels and the c-di-GMP-binding effector proteins. As cyclic-di-GMP is used by most bacteria, understanding its production and function holds promise for the development of anti-biofilm drugs.

Recent publications:

- The green tea polyphenol EGCG inhibits E. coli biofilm formation by impairing amyloid curli fibre assembly and down-regulating the biofilm regulator CsgD via the σE -dependent sRNA RybB. ***Mol Microbiol,*** (2016).
- Genome-Based Comparison of Cyclic Di-GMP Signaling in Pathogenic and Commensal Escherichia coli Strains***. J Bacteriol,*** (2015).
- C-di-GMP signaling and biofilm-related properties of the Shiga toxin-producing 2011 German outbreak Escherichia coli O104:H4. ***EMBO Mol. Med,*** (2014).
- The EAL protein YciR is a trigger enzyme in a c-di-GMP signaling cascade in E. coli biofilm control. ***EMBO J,*** (2013).
- Cellulose as an architectural element in spatially structured Escherichia coli biofilms. ***J. Bacteriol***., (2013).
- Principles of cyclic-di-GMP signaling. ***Nature Rev. Microbiol,*** (2009).
- The BLUF-EAL protein YcgF acts as a direct anti-repressor in a blue light stress response of E.coli. ***Genes Dev***. (2009).
- Inverse regulatory coordination of motility and curli-mediated adhesion in Escherichia coli. ***Genes Dev. (***2008).

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