

Seminar in Microbiology

Monday, 12th September, 2016

Salle de séminaire, E07.3347.a, CMU

11:30 – 12:30

Prof. Dr. Josep Casadesús



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Luria and Delbrück revisited: non mutational preadaptation to lethal selection.

Josep Casadesús' group explores how epigenetic mechanisms contribute to the regulation of phenotypic heterogeneity, antibiotic protection and regulation of gene expression. A particular focus is on the role of DNA adenine methylation in these mechanisms, investigated using the methyltransferase Dam as model that is encoded in the Gram-negative pathogen *Salmonella enterica* where it contributes to variety of virulence- and stress-related phenotypes. Recent work has determined how Dam-regulated genes affect the *S. enterica* cell envelope, especially modifications of the lipopolysaccharide (LPS) and peptidoglycan (PG) layers.

Selected recent publications:

- OxyR-dependent formation of DNA methylation patterns in OpvABOFF and OpvABON cell lineages of *Salmonella enterica*. **Nucleic Acids Res.** (2016).
- Epigenetic Control of *Salmonella enterica* O-Antigen Chain Length: A Tradeoff between Virulence and Bacteriophage Resistance. **PLoS Genet.** (2015).
- Small RNA-based feedforward loop with AND-gate logic regulates extrachromosomal DNA transfer in *Salmonella*. **Proc Natl Acad Sci U S A.** (2015).
- Virulence Gene Regulation by L-Arabinose in *Salmonella enterica*. **Genetics.** (2015).
- Bile-induced peptidoglycan remodelling in *Salmonella enterica*. **Environ Microbiol.** (2015).
- A eukaryotic-like 3' untranslated region in *Salmonella enterica* hld mRNA. **Nucleic Acids Res.** (2014).
- Contribution of phenotypic heterogeneity to adaptive antibiotic resistance. **Proc Natl Acad Sci U S A.** (2014).