

IGFL External Seminar

Patrick LEMAIRE (CRBM Montpellier)

Making similar embryos with divergent genomes

Monday 30 September @ 11.00

Salle des Theses

The relationships between genotype and phenotype during evolution are complex and poorly understood. Surprisingly dissimilar genotypes and developmental programmes can translate into very similar phenotypes, which may explain how some species can remain morphologically similar for long periods of time in spite of genome drift. Ascidian embryos constitute a remarkable system to study this phenomenon. Slow evolution of their stereotyped embryonic morphologies, based on invariant cell lineages, allows comparison of the same developmental processes across hundreds of millions of years. Extreme genome intra-specific polymorphism and inter-specific divergence suggests an astounding level of plasticity in the underlying developmental pathways.

During my talk, I will present the imaging tools that we have developed to quantify embryonic morphologies and their variability in live embryos. I will then give a preliminary assessment of genome and transcriptome divergence within and between genera. I will conclude by presenting *cis*-regulatory mechanisms that explain, in part, how divergent genomes can be compatible with morphological invariance.

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