institut Valrose Biologie

Université Nice Sophia Antipolis — cnrs — Inserm

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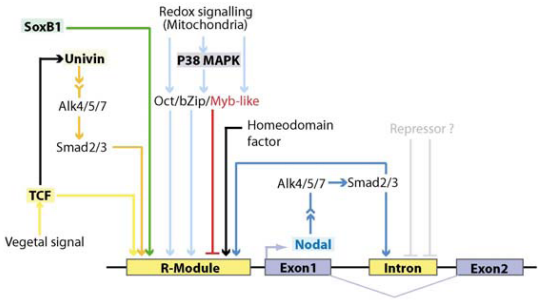

Postdoctoral Fellowship in Developmental Biology

Analysis of the regulatory landscapes associated with Nodal and BMP signaling by Assays for Transposase Accessible Chromatin (ATAC-Seq)

A two-year postdoctoral position supported by the French Foundation for Medical Research (FRM) is available starting September 1st 2018 to work in the group Gene regulatory networks, axis specification and morphogenesis of the sea urchin embryo at the Institute of Biology Valrose in Nice.
The area of research will concern the analysis of transcriptional regulation downstream of Nodal and BMP2/4 signalling in the sea urchin embryo (see Lapraz F, Haillot E, and Lepage,T – 2015 - A deuterostome origin of the Spemann organiser suggested by Nodal and ADMPs functions in Echinoderms; Nature communications and Haillot E, Molina MD, Lapraz F, and Lepage,T (2015) The Maternal Maverick/GDF15-like TGF-β Ligand Panda Directs Dorsal-Ventral Axis Formation by Restricting Nodal Expression in the Sea Urchin Embryo. - 2015 - PLoS Biology.

Project description:
Our laboratory has recently generated high-quality data of chromatin accessibility in wild type embryos and following over-activation of the Nodal and BMP2/4 pathways by ATAC-seq. In addition, we have recently obtained high-quality developmental transcriptomes and a high-quality genome assembly for the Mediterranean sea urchin *Paracentrotus lividus*. The availability of these resources as well as the availability of the genome sequence of several sea urchins offers a unique opportunity to dissect complex gene regulatory networks.
The postdoctoral project will aim at integrating the results of these "omics" screens in the analysis of the dorsal-ventral gene regulatory network of the sea urchin embryo. In particular, the project will focus on exploring the regulatory landscapes associated with Nodal and BMP signaling and at identifying the cis-regulatory modules of the Nodal and BMP2/4 target genes. Another goal is to identify the transcription factors regulating nodal expression identified by ATAC-seq. Finally, this project offers a unique opportunity to investigate how chromatin accessibility is modulated during the process of cell fate specification and determination.

Qualifications
Candidates should have obtained recently a PhD degree. Both national and international candidates are encouraged to apply. Interested candidates should send a Curriculum Vitae, a summary of research interests and goals and contact information for two or three referees to:

Dr Thierry Lepage ✉: tlepage@unice.fr Research team webpage

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