CRBM external seminar

Thursday, April 9th at 11:00 am Salle Marcel Dorée

From sequence to function: Insights from Hox Proteins

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Yacine Graba, a CNRS Research Director, is leading together with Andrew Saurin a team at the Developmental Biology Institute in Marseille. Projects developed aim at grasping structural and mechanistic insights into transcription factor activity, often focusing on evolutionary conserved Hox proteins, and frame findings within organismal development and physiology, with a recent emphasis on fat body and muscles.

Abstract

How function emerges from protein sequence is a fascinating question in biology. We address this question focusing on a widely conserved transcription factor family, the Hox proteins, that sets developmental information required for proper embryonic patterning in metazoans. The talk will summarize how the study of structurally organized and conserved Hox protein domains, and more recently, poorly conserved disordered sequences (often referred to as IDRs) that proved difficult to study, endow function to Hox proteins within the frame of *Drosophila* embryogenesis.

Selected publications

- J. R. Curt, P. Martín, D. Foronda, B. Hudry, R. Kannan, S. Shetty, S. Merabet, A. Saurin, Y. Graba* and E. Sanchez Herrero* (2025). Ambivalent partnership of the Drosophila posterior class Hox protein Abdominal-B with Extradenticle and Homothorax. ***PLoS Genetics.*** 2025 Jan 13;21(1):e1011355. *(*corresponding authors)*
- G. Poliacikova, A Aouane, N. Caruso, N. Brouilly, C. Maurel-Zaffran, Y. Graba* and A. Saurin* (2024). The Hox protein Antennapedia orchestrates Drosophila adult flight muscle development***. Science Advances.*** Nov 29;10(48). *(*team co-head)*
- G. Poliacikova, M. Barthez, T. Rival, A. Aouane, N. Miguel Luis, F. Richard, N. Brouilly, F. Schnorrer, C. Maurel-Zaffran, Y. Graba* and A. J. Saurin*. M1BP is an essential transcriptional activator of oxidative metabolism during *Drosophila* development (2023). ***Nature Communications***. Jun 2;14(1):3187. *(*team co-head)*