



SEMINARIO PRESENCIAL

Viernes, 24 de Marzo de 2023

12:30 h. Instituto Cajal (CSIC) Madrid

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SENSING DEVELOPMENTAL TIMING

Abstract

The timing at which **Juvenile-to-adult developmental transition (JDT)** occurs defines the right moment to tilt the resources from growth to reproduction. JDT is a maturation process arising after the activation of the neuroendocrine axis. Therefore, complex crosstalk between growth/metabolism and the neuroendocrine axis has been established in vertebrates and invertebrates. Nevertheless, **several observations support that JDT timing determination also require the integration of non-metabolic information**. Emblematic examples of this include delayed maturation in isolated rats, advanced development of chickens exposed to high temperatures, and early pupation in infected female mosquitoes. Such unknown non-metabolic integration cries out for an explanation. This seminar will summarize our recent results regarding how the neuroendocrine system integrates non-metabolic environmental signals. For this, we use the *Drosophila model*, in which we and others have established that the neuroendocrine axis shows several structural and functional parallels even with mammals.

Related publications with the topic:

A 2021. Timing the juvenile-adult neurohormonal transition: functions and evolution. Front. Endocrinol. Feb 12. 2021 <https://doi.org/10.3389/fendo.2020.602285>. Review. Barredo CG, Gil-Marti B, Deveci D, ROMERO NM* and Martin FA*. *Corresponding Author

2020. Growth and maturation in development: a fly's perspective. Int J Mol Sci. 2020. Feb 13;21(4):1260. Review. Delanoue R, ROMERO NM*. *Corresponding Author

2019. AstA signaling functions as an evolutionary conserved mechanism timing juvenile to adult transition. Curr Biol. 2019. Mar 4;29(5):813-822.e4. Deveci D, Martin FA, Leopold P, ROMERO NM*. *Corresponding Author

2018. Prothoracicotropic hormone modulates environmental adaptive plasticity through the control of developmental timing. Development 2018. Mar 4;145(6):dev159699. Shimell M, Pan X, Martin FA, Ghosh AC, Leopold P, O'Connor MB, ROMERO NM*. *Corresponding Author