OFERTA de CONTRATO PREDOCTORAL en el IHSM LA MAYORA (Málaga, España)

PhD STIPEND for IHSM La Mayora (Málaga, Spain)

We offer a PhD stipend at **Instituto de Hortofruticultura Subtropical y Mediterránea La Mayora (IHSM)**, a hybrid institute between **Universidad de Málaga** and **CSIC,** for a project funded by the Spanish ministry of science, innovation and education (**Ministerio de Ciencia, Innovación y Universidades**).

Principal investigator: **Laura Arribas-Hernández** (https://www.ihsm.uma-csic.es/investigadores/1155)

Project description

Title: SPROUT (Switching the Growth of Plant Buds by an RNA Code of Untranslatable Chemical Marks)

ID: PID2024-156806NA-I00

Summary

While dormancy of plant buds is essential for plant survival during winter, explosive growth upon awakening is necessary to overgrow competitors, and to complete the reproductive cycle before the end of the favourable season. The activation of a subset of dormant buds also determines plant architecture, as they give rise to branches that support leaves, fruits and grains. That is why this process has a direct impact on crop yield, not only because it determines nutrient allocation but also because harvesting efficiency largely depends on plant shape.

In each dormant bud, the decision between remaining quiescent or resume growth largely results from local integration of hormonal signals originating from distal parts of the plant, and involves reprogramming of gene expression inside the bud. While the control of this process at the level of DNA transcription is well understood, its post-transcriptional components are understudied. This project sets out to study how bud dormancy is controlled by chemical marks deposited in messenger RNAs (mRNAs) of genes that regulate plant growth. More specifically, we will use the model plant *Arabidopsis thaliana* to study how this control is exerted by the methylation of Nitrogen 6 of internal Adenosines in mRNAs, typically abbreviated as m^{6}A. These marks constitute a code that cannot be directly translated like the RNA sequence, but it has the regulatory power of switching on and off growth-related genes in plants and in animals. Comparable to Epigenetics but acting at the mRNA rather than the DNA level, this mode of gene regulation is generally called Epitranscriptomics.

Keywords: Epitranscriptomics, m^{6}A, RNA, axillary bud, dormancy, Arabidopsis.

Related articles:

Brodersen, P., and Arribas-Hernández, L. (2024). The m^{6}A-YTH regulatory system in plants: A status. Current Opinion in Plant Biol. 82, 102650. https://doi.org/10.1016/j.pbi.2024.102650

We offer:

A **4-year PhD** will be primarily conducted at the facilities of the Teatinos building of **IHSM La Mayora** (Bulevar Louis Pasteur 49, Málaga, Spain), under the regulations of the PhD program of **University of Málaga** (UMA), and the **FPI** legislation (Formación de Personal Investigador predoctoral asociado a Proyectos de Generación de Conocimiento del Ministerio de Ciencia, Innovación y Universidades).

In addition to the experimental work in the laboratory and greenhouses at the IHSM La Mayora, the PhD student is expected to read the scientific literature relevant for the project, participate in journal club, write reports, present their own progress during lab meetings, and attend seminars. The PhD candidate will also attend national and international meetings to present results, and is expected to spend a total of ~3 months working with collaborating research groups at the CNB in Madrid (Spain) and the University of Copenhagen (Denmark).

The approximate starting date is March 2026.

Candidate Profile:

Mandatory requirements

- BSc and MSc in Molecular biology, Biochemistry or Biotechnology.
- English proficiency for adequate verbal and written communication, and oral presentations.

Valuable skills

- Lab experience handling plants and/or with lab methods such as cloning, genotyping, DNA/RNA/protein purification, or microscopy.
- R, data analysis.
- Personality traits such as team work spirit, scientific curiosity, positive attitude, and a liking for learning, facing challenges and growing plants will be valued.

Contact:

Interested candidates, please send your **CV** with a **motivation letter** to: **laura.arribas@csic.es**

Deadline for application:

September 30th, 2025