

PhD Thesis Project Offer

(valid during the calendar year 2025)

Provisional Title of the Doctoral Thesis

Advancing the knowledge of new mediators, mechanisms and tissue interactome in
Insulin resistance situations.

Subject area* / Research line

Sciences of health
Insulin resistance, obesity, chronic kidney disease

Summary of the Doctoral Thesis (maximum 300 words)

The **MOIR-ACTOME** project focuses on studying the molecular causes of insulin resistance and related diseases such as obesity, type 2 diabetes, gestational diabetes, and metabolic syndrome. It aims to identify new molecular factors involved in insulin resistance, understand how different tissues interact, and search for biomarkers in biological fluids. The project seeks a better understanding of this metabolic defect, which is present in diseases like obesity and diabetes, through a communication network between organs mediated by hormones, inflammatory molecules, RNAs, and extracellular vesicles. The goal is to find new targets for treatments, biomarkers for early detection, and preventive methods, addressing the need for pharmacological treatments beyond lifestyle changes.

The **MOIR-ACTOME** consortium implements a range of advanced research methodologies, including in vitro studies in cell cultures, in vivo assays using animal models, and clinical applications. Its expertise extends to collaborations with various academic and corporate entities nationally and internationally, fostering the integration of multidisciplinary approaches and knowledge transfer between the academic sector and industry. Additionally, the consortium establishes partnerships with high-level hospitals in the Community of Madrid to address the translational approach of human biology and pathophysiology. A notable collaboration is carried out with ALCER-Madrid, a patient association, to facilitate the incorporation of patient perspectives in research and promote the direct application of scientific advances in improving the care and treatment of patients affected by the studied conditions.

Is the development of this thesis associated with the execution of any research project? If so, provide details of the project (title, funding entity, and execution period)

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Insulin resistance situations.

Comunidad de Madrid 2022-2026

Academic Profile of the Student (maximum 200 words)

Candidates will preferably have degrees in **Pharmacy, Biochemistry, Biology, Medicine** or in any discipline in the branch of Life Sciences. Academic record greater than 2.2 (scale 1-4), with specific training and experience in animal models being assessed. Training already completed in Master's or DEA and English language will be valued.

We are looking for candidates who are highly motivated by research and interested in physiology and molecular biology. The ideal candidate must have a good knowledge of the English language, teamwork skills and ease of communication. He is also motivated by teaching related subjects in Bachelor's Degrees of the Faculty of Health Sciences.

Contact: institutional email of the Supervisor

Gema Medina Gómez gema.medina@urjc.es

Institutional Website of the Supervisor

<https://gestion2.urjc.es/pdi/grupos-investigacion/lipobeta>

*See the Subject Areas at <https://www.urjc.es/informacion-practica#oferta-proyectos-de-tesis>.
Each project will be included in a single subject area.