



**Postdoctoral researcher opportunity for the study of epigenetic mechanisms associated with stress and exercise at the Neuroscience Institute of Alicante (Femenía Lab).**

Our team is dedicated to studying novel mechanisms involving the crosstalk between metabolic and immune pathways in regulating brain circuits relevant to psychiatric and neurological disorders. In particular, we aim to determine how the innate immune system regulates emotional and cognitive functions, and the molecular mechanisms associated with peripheral-to-brain communication in the context of stress, inflammation, and metabolic disorders. We are also interested on how environmental factors, such as physical exercise or diet, can protect the brain from these insults, and to reveal novel cellular and molecular mechanisms regulating cell plasticity and behavior during health and disease.

We employ a multidisciplinary approach in mice using cell genetic strategies and viral-vectors to molecular and pharmacological methods (both *in vitro* and *in vivo*), microscopy, local brain injections, stereotaxic surgery and behavioral analysis.

The applicant will have the opportunity to participate in a pre-clinical study with potential translational implications aiming at:

- 1) To identify miRNA Patterns during chronic stress, diet and exercise and its correlation with emotional and cognitive function.
- 2) To understand the functional effects of specific miRNAs and their connection with TLR9 signaling pathways.
- 3) To characterize the Gut Microbiome during stress, diet, exercise, and miRNA interventions.

Candidates must have a strong molecular biology background and rodent behavioral skills. More specifically, the applicant must have documented experience in rodent behavior, brain delivery of viral vectors, and molecular techniques, such as gene and protein expression, immunohistochemistry, microscopy and cell culture required for this project as well as a basic understanding of neuroscience. Lastly, the researcher will also have the opportunity to participate in other projects in our team and collaborations.

This opportunity is open to candidates with a PhD, or equivalent experience.

For more info, please communicate with lead contact, Dr. Teresa Femenia.

Please include:

- a short cover letter (max 1 page)
- detailed CV
- the names of two references

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