Postdoctoral fellowships on mitochondria, mechanotransduction, and metabolism

We are seeking two post-docs to join our group and push forward published and unpublished work on the role of mitochondria as transducers of mechanical signals in physiology and disease. We have competitive three-year positions fully funded by AIRC and CARIPARO.

The lab:
The laboratory of Prof. Sirio Dupont in the Department of Molecular Medicine of the University of Padova is interested in understanding how the mechanical tissue mitcoenvironment regulates key signaling processes and metabolic pathways, and the importance of such regulations towards the development of novel therapeutic approaches to combat metastasis relapse.
Prof. Dupont spearheaded the discovery that YAP/TAZ proteins respond to the mechanical properties of the extracellular matrix, and how this pathway regulates homeostasis and cancer development in the mouse liver (Dupont Nature 2011; Aragona Cell 2013; Pocaterra J.Hepatology 2019; Pocaterra Comms Bio 2021).
More recently we discovered how mechanical cues profoundly shape cell metabolism and contribute to cancer cell metastatic dissemination (Romani Nat. Cell Biol. 2019; Romani Nat. Rev. Mol. Cell Biol. 2020; Romani Nat. Cell Biol. 2022; Dupont and Wickstrom Nat. Rev. Gen. 2023)
We now identified mitochondrial morphology as a key response to mechanical signals and as a key transduction mechanism that coordinates the metabolic and transcriptional responses to mechanical stimuli to control cell fate (Romani Nat. Cell Biol. in publication).

Open projects:
We want to characterize the mechanisms underlying the regulation of mitochondrial morphology in response to mechanical stimuli, the effects of such regulation on mitochondrial functions, and how this mitochondrial remodeling affects signaling pathways and nuclear gene expression. We have developed mouse alleles to study the physiological role of such "mitochondrial mechanotransduction" signalling pathway in mice. We identified small-molecule compounds that modulate mitochondrial mechanotransduction and plan to optimize them into lead compounds to prevent breast cancer metastatic relapse.

The positions:
The Postdoctoral positions are opened immediately and will be filled as soon as a suitable candidates are found. The positions are for three years, with a one-year starting contract and a two-year extension already covered by available grants. The net salary is equivalent to that of an Italian entry-level Assistant Professor, and adequate to comfortably support a foreign worker in Italy. Fellows will be encouraged to apply for competitive National and International Fellowships (e.g. Marie Curie, EMBO), as well as to young investigators grants towards scientific independence (e.g. University of Padua STARS Grant).

The applicant should have a PhD in biological, biotechnology, or pharmaceutical sciences. They should have a strong background in cell culture, imaging techniques, and basic molecular biology. Good communication skills and the ability to work both independently and as part of a team are required. Previous experience in metabolism studies and/or a certificate in animal experimentation is a plus. Priority will be given to candidates with a proven record of scientific publications (preprinted, published, or under review in international peer-reviewed journals).

We are a growing laboratory, and we are seeking for highly motivated individuals with a a passion for science to push forward the next step in our research. We have several projects at advanced stages of development with the possibility of immediate contribution. We have an extensive network of National and International collaborations providing us with state-of-the-art experimental techniques and approaches. The University of Padua is one of the top biomedical research campuses in Northern Italy, and it is committed in developing an Academic environment where all talents can flourish regardless of gender, cultural background, nationality, or impairments (https://www.unipd.it/en/hr-excellence-research).

Inquiries and applications can be sent to patrizia.romani@unipd.it and sirio.dupont@unipd.it explaining why you are interested in joining the lab, including a CV with a brief research synopsis, and complete contact information for 2 references.

Sirio Dupont
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Lab website: https://www.medicinamolecolare.unipd.it/labdupont
Lab publications: https://www.ncbi.nlm.nih.gov/myncbi/sirio.dupont.1/bibliography/public/
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