



UNIVERSITÀ
DEGLI STUDI
DI PADOVA



MARIE SKŁODOWSKA-CURIE ACTIONS

Research Fellowship Programme

Post-doctoral position in

DECODING mRNA TRANSLATION IN ANGIOGENESIS

The laboratory of Prof. Massimo Santoro at Dept. of Biology, University of Padua and Venetian Institute Molecular Medicine (<https://massimosantorolab.com>) is seeking for a postdoc fellow to address the role of localized mRNA translation in the context of angiogenesis.

Angiogenesis, or the emergence of new blood vessels, is a complex biological process that involves the coordinated migration of endothelial cells. As they navigate through tissues, leading endothelial cells present at the tip of new sprouting vessels are guided by environmental signalling factors. These cues are critical modulators of the molecular and cellular responses triggered during angiogenesis. Amongst other factors, messenger RNAs are asymmetrically distributed within endothelial cells. Some of these messenger RNAs are transported to the front of these cells where they may be locally translated into proteins that actively participate in cell motility. How and why this happens is still unknown. In this project you will investigate 1) the role of mTOR-mediated localized translation in endothelial cells; 2) the nature of the newly synthesized endothelial growth factor receptors, and 3) the signalling machinery that modulates messenger RNA translation in the context of angiogenesis. To explore these themes, you will take advantage of a wide range of in vivo animal models and cell culture techniques. These will be used in combination with genome editing, metabolomic, proteomics and spatial transcriptomic approaches designed to explore how and why particular messenger RNAs are translated (translatome) into proteins at the front of endothelial cells.

Our laboratory have acquired strong experience in biochemistry, genetic, molecular and cellular biology of endothelial and mural cells in different vertebrate animal models and human primary cells (Donadon and Santoro, *Development*, 2021; Camillo et al., 2021, *J. Cell Biol.*; Facchinello et al., 2022, *Nature Metabolism*; Oberkersch et al., 2022, *Developmental Cell*, Astone et al., 2023, *Cardiovascular Research*). Mouse and zebrafish animal facility, translatome analyses, STED, multiphoton and light sheet microscopy equipment, Atomic Force Microscopy and metabolic/proteomic core facilities are available in the laboratory and department for these studies.

The **post-doc candidate** must be highly motivated, enthusiastic and efficient researcher with a PhD in a relevant discipline and experience in genetic, molecular and cellular biology methods (priorities will give to candidates with already established expertise in mouse genetic). The candidate needs a publication record in peer-reviewed international journals (including at least one paper as a first author). The candidate must be capable of working in a team as well as independently.

University of Padua is at the top Italian institutions with over 30 ERC grantees. Our university combines a strong tradition in cell biology with interdisciplinary approaches and represents an idyllic environment for life science research. Padova is a historical university city, located in the North-East of Italy, near Venice, close to the Mediterranean sea and the Dolomites enabling a healthy work-life balance.

Please visit this website for further information about us: www.massimosantorolab.com.

Contact

Please send your CV, letter of motivation, and the contact information of at least two references to Prof. Massimo Santoro at massimo.santoro@unipd.it. The position is starting in October 2023.