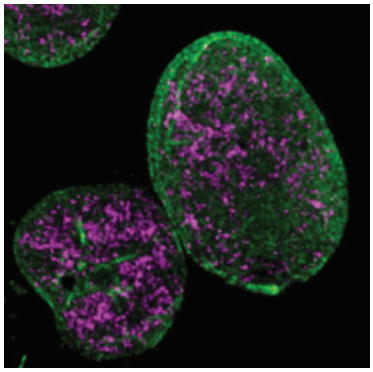
UNIVERSITÀ DI TRENTO | Department of Cellular, Computational and Integrative Biology | CIBIO

Role of Chromatin-associated condensates in genetic diseases

The project



Mutations in chromatin regulators can lead to multiple pathological conditions which are commonly referred as chromatinopathies (CPs). The project –funded by Telethon Foundation- is centered on determining the mechanisms and functional implications of mutations in chromatin regulators observed in CPs. The herein program aims to define the role of chromatin-associated condensates in determining the nuclear mechanical properties and their impacts on nuclear architecture in CPs. The PhD student will combine biochemical and single-molecule dynamics technologies with quantitative data analysis to define the role of RNAs in guiding liquid-liquid phase separation of chromatin condensates. His/Her project will benefit from working within an interdisciplinary framework, favoring cross-contamination of ideas and research discussions.

The candidate

We are seeking highly motivated and enthusiastic candidates, willing to challenge an innovative project by adopting a pro-active attitude and an analytical approach. The candidate is requested to have vivid interest in investigating the molecular mechanisms governing the dynamic assembly of chromatin condensates and their impacts on mechano-signaling. The successful candidate will be involved in an interdisciplinary project with research being conducted at the crossroad between molecular biology, biophysics, and mechanobiology. Given the international framework, the candidate should also have good communication skills and a team-oriented working attitude.

Qualifications:

- A high level of self-motivation and scientific curiosity.
- Master's degree in biology, Biotechnology, Bioengineering, Physics, or in related fields
- Prior research experience in one of these topics: cell biology, molecular biology, phase transition, and/or macromolecule biophysics.
- Proficiency in scripting environments for statistics and data analysis, and/or able to quickly acquire Bioinformatics computational skills will be considered a relevant plus.
- Excellent communication skills and good team spirit with the ability to solve problems independently
- Knowledge in chromatin biology or mechanobiology will be considered a relevant plus.

The environment

Within the international and vibrant context of the Department of Cellular, Computational and Integrative Biology (CIBIO) in Trento (Italy), the lab of Chromatin Biology and Epigenetics is interested in determining the contribution of epigenetic changes to stem cell function, both in physiological and pathological settings. We are investigating the contribution of chromatin factors in the onset of rare genetic disease (Fasciani A. et al., *Nature Genetics 2020*). PhD student joining the lab gain access to the Institute's advanced research training as part of the PhD program in Biomolecular Sciences (https://www.unitn.it/drbs/). CIBIO offers the possibility to work in a young, highly dynamic and stimulating research environment thanks to a streamlined organization, which can support researchers to readily adapt to new scientific challenges through cutting-edge research infrastructures. At CIBIO, research goals are pursued in the frame of an integrative view of basic biological processes and of their derangement in disease, whereby basic science co-exists with biomedical oriented translational approaches.
Qualified and interested candidates should submit their application including CV, a motivation letter describing how her/his background would best fit this position, and the contact information of at least two referees. Please send all documents to Dr. Alessio Zippo (alessio.zippo@unitn.it).

via Sommarive, n° 9 - 38123 Trento, Italy - ph. +39 0461 283735, fax +39 0461 283937
e-mail: alessio.zippo@unitn.it