UNIVERSITÀ DEGLI STUDI
DI TRENTO

Centre for Integrative Biology - CIBIO

PhD position: Profiling 3D Chromatin topology with high-throughput super-resolution microscopy in breast cancer

A three year PhD position is now opening at the Center for Integrative Biology CIBIO, University of Trento and the project will be carried out at the laboratory of Chromatin Biology & Epigenetics, headed by Dr. Alessio Zippo.

The project

Within the framework of the H2020-RIA "PROCHIP" consortium, the project for the PhD activity is centered on determining the contribution of chromatin organization in cancer cell heterogeneity and tumor progression. Epigenomic reprogramming plays a central role in cancer progression and metastasis formation, supporting tumour heterogeneity, which represents a challenge for precise diagnosis and targeted therapy. Defining the 3D-organization of cancer-associated chromatin domains at single cell level represents a new frontier to decipher tumor heterogeneity, acquired drug resistance and to predict the best therapeutic options.
The herein program aims to solve chromatin domains by super-resolution imaging, gaining insights on epigenetic plasticity and its impact on tumor progression and metastasis formation. The PhD student will gain skills in cancer cell biology and epigenetics by using cutting edge technologies in chromatin biology and super-resolution imaging. By using a pre-clinical model of basal-like breast cancer, the PhD student will develop new approaches to define and solve chromatin domains to investigate their function in promoting cancer cell plasticity. His/her project will benefit from working within an interdisciplinary framework of five European research groups, 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 experience on methods of cell biology and molecular biology to address chromatin changes at single cell level. The PhD student will experience both wet-lab and computational work, supporting candidates in establishing a unique skill set that it would be required for future quantitative biology studies. Availability to learn methodologies based on using animal models is also requested. Given the international framework, the candidate should also have good communication skills in English, and a team-oriented working attitude.
For additional information please contact Dr. Alessio Zippo (alessio.zippo@unitn.it).

Qualifications:

- A high level of motivation and interest.
- Master degree in Biology, Biotechnology, Computational Biology or in a related field
- Prior research experience in cell and molecular biology
- Experience in quantitative advanced imaging and/or NGS data analysis will be a plus
- Excellent communication skills and good team spirit with the ability to solve problems independently
- High level of English speaking and writing skills.
- International mobility will be considered a major plus.

The environment

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. In particular, we are investigating the contribution of epigenetic reprogramming in in driving cell plasticity during tumor progression and metastasis. Within the international and vibrant context of the Center of Integrative Biology (CIBIO) in Trento, PhD students joining the lab gain access to the Institute's advanced research training as part of the PhD program in Biomelecular 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). This position is available starting from November 2018.

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