



Opening of 3 Ph.D. positions at UniTRENTO within ROPES

ROPES - ROle of EPitranscriptomics in DiseaseS – GA nr 956810

The European Training Network named [ROPES](#) (ROle of EPitranscriptomics in DiseaseS) has been granted in the framework of the Horizon 2020 Marie Skłodowska-Curie Action for Innovative Training Network (ITN). The project is coordinated by the University of Trento (CIBIO) and it involves ten European laboratories and one biotech company from nine different countries, including: the Medical University of Wien (Austria), the University of Lausanne (Switzerland), the International Institute of Molecular and Cell Biology (Poland), the Umea University (Sweden), the German Cancer Research Center DKFZ (Germany), il Consiglio Nazionale delle Ricerche (Italy), the Centre for Genomic Regulation (Spain), CEITEC- University of Masaryk (Czech Republic), IMMAGINA Biotechnology Srl (Italy), Free University of Bruxelles (Belgium).

The project aims to unravel the role of epitranscriptomics in diseases and to exploit it for novel therapies. ROPES, awarded with 3M € from the European Commission, started on December 2020, and will recruit Early Stage Researchers to perform innovative research projects in cooperation with leading universities in Europe and the United States of America.

Twelve Early-Stage Researchers (ESRs) will be recruited to work in laboratories with expertise in RNA modification, development, bioinformatics, cancer, immunology, drug development.

The [Department of Cellular, Computational and Integrative Biology – CIBIO at the University of Trento](#) (UniTrento - Italy), will recruit and host two ESRs:

- **ESR01 (WP2-3): Drugging the YTH reader proteins in m6A epitranscriptomic signalling.**
- The focus of this PhD program is to develop molecules endowed with the ability to inhibit the signaling mediated by the YTH proteins when binding their ligand, N6-methyladenosine (m6a), and to test these molecules in at least one relevant disease condition for a potential therapeutic effect in an in vivo model. This first condition will be the developmental tumor neuroblastoma. On the best molecule candidate, the study will also establish the basis for the action with respect to possible selectivity amongst the 5 YTH human proteins and their physiological role. The ESR (Early-stage Researcher) will be contractually employed for 36 months by the University of Trento and will be covered under the Italian social security scheme. The research will be carried out as a doctoral candidate within the PhD programme in Biomolecular Sciences. Therefore, in addition to their individual scientific projects, the successful candidate will benefit from further continuing education, which includes internships and secondments, a variety of training modules, as well as courses on transferable skills and active participation in workshops and conferences.
- **ESR12 (WP1-2): Cooperative/competitive interactions between effectors of the RNA m6A modification in cancer.**

Develop computational tools to identify cooperative/competitive interactions between effectors of the RNA m6A modification and apply these tools to cancer datasets. The ESR (Early stage Researcher) will be contractually employed for 36 months by University of Trento and will be covered under the Italian social security scheme. This research will be carried out as a doctoral candidate within the PhD programme in Biomolecular Sciences. Therefore, in addition to their individual scientific projects, the successful candidate will benefit from further continuing education, which includes internships and secondments, a variety of training modules, as well as courses on transferable skills, and active participation in workshops and conferences. Three

secondments are planned in the fellowship (Chicago, USA, 4 months; Umea, Sweden, 3 months; CNR Pisa, Italy, 4 months). The related expenses will be reimbursed to the ESR through the internal mission reimbursement procedures. Other eventual missions, longer than 6 months, will be charged on the ESR monthly mobility allowance.

[IMMAGINA Biotechnology srl](#) (Trento - Italy) will recruit and host one ESR (who will be hosted as PhD candidate also at UniTRENTO):

- **ESR10 (WP1, WP3): New technologies to map RNA modifications genome-wide.**
 - **Objectives:** (1) The creation of a bioinformatic pipeline to integrate RNA editing signatures with parallel Ribo-seq and RNA-seq data from MSCA-ITN network data; (2) the use of proprietary wet lab technologies to detect RNA signatures
 - **Description:** The Early Stage Researchers (ESRs) will be recruited and trained to join a biotech company to advance the knowledge on the role of RNA modifications on different diseases and models, thanks to a large collaboration in the MSCA-ITN network. The position will advance knowledge on RNA modifications and potential applications for novel therapies and diagnostic strategies
 - **Expected Results:** We expect to get a deeper insight into the mechanisms of how post-transcriptional modifications affect ribosome function. This will be of relevance for understanding pathological conditions affected by alteration of protein synthesis caused by RNA editing and related defects in translation efficiency
 - **Profile:** The candidate should have a knowledge of programming with R and python. Knowledge of some bioinformatics pipelines for Next Generation Sequencing Analysis on large datasets, including the creation of software packages (preferential: Cutadapt, RiboWaltz, STAR, Bowtie). Team player and bio-related curiosity (better if you have some biotech background)!

To be eligible, candidates must comply with mobility requirements. Please see the "[Horizon 2020 Work Programme 2018-2020](#)" for details.

More information and application at: <https://www.unitn.it/en/ateneo/1961/announcement-of-selection> The application deadline is at 4 pm (Italian time, GMT +2) of 22/07/2021.

Funding

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