



Funded doctoral (PhD) position at the Institute of Metabolic and Cardiovascular Diseases, Toulouse, France
Prof. Dominique Langin at I2MC is seeking application for a doctoral position related to the European Research Council-funded SPHERES project. The position is opened from October 2020 (3-year contract).

About SPHERES (Lipid droplet hypertrophy: the link between adipocyte dysfunction and cardiometabolic diseases)

The goal of SPHERES is to understand the dynamics and consequences of adipocyte hypertrophy (enlargement) through investigation of its large lipid droplet (LD). SPHERES PIs (Langin at Paul Sabatier University, Rydén at Karolinska Institutet, Antonny at CNRS) postulate that disturbances in the interactions between LD proteins and LD lipid composition lead to adipocyte hypertrophy and its deleterious consequences. Spanning from molecular, cellular to the whole-body level, SPHERES will link new knowledge on the formation and maintenance of large adipocyte LDs to the deleterious impact of adipocyte hypertrophy.

Duties *Characterization of LD-associated protein interactomes*

Enzyme-catalyzed proximity labeling has emerged as a new approach to investigate protein-protein interactions in the proper cellular compartment of a living cell. In SPHERES, we will use the very recently described proximity-dependent biotinylation identification method TurboID. Using TurboID and other techniques (immunoprecipitation coupled to mass spectrometry, proximity ligation assays,...), the applicant will characterize protein-protein interactions in 2D, and subsequently 3D (spheroid), adipocyte cultures. The involvement of these interactions in adipocyte metabolism will be evaluated using pathway-specific assays. The *in vivo* relevance of the findings will be assessed on adipose tissue samples from protocols in mice and humans.

Entry requirements

The applicant must hold master degree (M2R or equivalent). Candidates must have a strong training and knowledge in mammalian cell culture, protein biochemistry and related molecular techniques. Experience on metabolism and mouse models will be considered.

B2 (upper-intermediate) levels in the French and English languages are required. The candidate needs excellent communication and organizational skills and be motivated by collaborative work with colleagues at I2MC and ERC collaborators.

Application process

The application must contain the following documents in English: 1. Curriculum vitae incl. ranking at various university levels and, if relevant, list of publications/communications, 2. Summary of research experience (no more than one page), and 3. Contact details for two referees

Please, send application files to: dominique.langin@inserm.fr

Selection process

A first round of selection will be performed based on documents sent by the candidates. Selected candidates will be interviewed by the PhD supervisors (Prof. Langin and Dr. Montastier).

About the Institute of Metabolic and Cardiovascular Diseases (I2MC)

I2MC is one of the largest Research Centre in metabolic and cardiovascular diseases in Europe with 15 laboratories and a work force of about 300. Basic scientists and clinicians are working on metabolic risk factors (obesity, diabetes and dyslipidemia) and their cardiovascular complications (thrombosis, atherosclerosis, cardiac and renal failure). The expertise combines cell biology, mouse models and clinical work supported by facilities in lipidomics, genomics, proteomics, animal phenotyping and cell imaging.

About Toulouse

Toulouse is located in Southwestern France close to the Pyrenees Mountains and Spain with flight and train connections to many French and European cities. With more than 100,000 students and praised quality of life, it is regularly ranked as one of the best places to live and study in France.