3-year RESEARCH ENGINEER position in human iPSC cell biology in the "Neurocardiac Coupling" group at the INSERM U1046, PhyMedExp Lab, Montpellier, France

Job summary

A Research Engineer position supported by an ANR grant (NEUROCARD) is opened for 18 months, renewable once for 18 months), starting in the first quarter of 2022 to develop and characterize an innovative cellular modeling of the neurocardiac communication. The goal is to establish and validate, using the microfluidics technology, a biological assay of the functional interaction between the autonomic neurons and cardiomyocytes that allows compartmentalized pharmacological investigations. The neurons and cardiac cells will be derived from patient-iPSC cells to investigate disease conditions, such as the genesis of Torsades de Pointes and Long QT syndrome. The project is conducted by a multidisciplinary consortium gathering two academic labs (PhyMedExp and IGF, campus Arnaud de Villeneuve, Montpellier, France) with established expertise in electrophysiology and Ca^{2+} signaling, in cardiac and neuronal hiPSC and a private company (MicroBrain Biotech). The recruited candidate will be in charge of the development and the characterization of the cellular models using complementary molecular and cell biology approaches, as well as the set-up of the functional investigations. He/she will work in the two research institutes (PhyMedExp and IGF, Montpellier) to fully benefit from respective the know-how and equipments.

Primary responsibilities

- Develop and optimize the advanced-cell culture and molecular biology approaches related to stem cells maintenance and differentiation into neuronal and cardiac cells.
- Adapt human IPSC-derived cell culture conditions to microfluidic chambers.
- Set-up and contribute to the functional assays (electrophysiology, imaging).

Other responsibilities

- Organize the cross-functional activities including hand-offs to various teams, compiling data, and presenting.
- Communicate and collaborate effectively with scientists, students and engineers involved in the project.
- Prepare regular reports and presentations of the results and project progress.
- Read, disseminate and discuss the relevant publications/literature of the field.

Required qualifications

- A strong background and skills in cell biology/stem cell biology is required. Ideally, a Ph.D. in stem cell biology. Possibly a PhD in developmental biology, bioengineering, or a related scientific field, but with particular interest/skills in cell biology, stem cell biology, electrophysiology and cellular imaging.

- Experience with culture and handling of induced pluripotent stem cells and differentiation protocols.

Other qualifications

- Good knowledge in cardiac physiology, or neuroscience, or electrophysiology and imaging, or tissue engineering, or experience in performing and optimizing quantitative cell-based assays will be a plus.
- Strong organizational, project-management and problem-solving skills in a team environment.
- Highly adaptable and responsive, as well as strong ethical commitment.
- Ability to communicate and to collaborate in a multi-team environment.
- Excellent written, verbal, and interpersonal communication skills.

Work Environment

The job is a joint position between INSERM U1046, *Physiology and Experimental Medicine: muscle and heart (Dynacar 'Cardiac coupling dynamics' team, J Thireau)* and CNRS UMR5203, INSERM 1191*, Institut de Genomique Fonctionnelle (Ion Channels in Neuronal Excitability and Diseases team, P Lory)*. Responsibilities of this position are performed on-site at Montpellier (France), including in BSL2 laboratory environment. Some weekend/evening work may be required as needed.

To apply

Highly motivated and talented candidates should apply on the institutional website. We encourage all applicants to express their preferences and own ideas in their personal motivation letter in addition of a minimum of 2 reference letters. INSERM is part of the Strategy for Researchers incorporating the Charter and Code Principles (HRS4R), which ensures optimal human resources policies.

For questions regarding this position, please email jerome.thireau@inserm.fr and philippe.lory@igf.cnrs.fr.

Also visit the websites **NeuroCardiac Coupling** and **Ion Channel In Neuronal Excitability and Diseases**.