Two Years post-doctoral position at Physiology and Experimental Medicine laboratory

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Co-Head of the team DYNACAR
"DYNAmics of CARdiac couplings"

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Team: Dynamics of Cardiac Couplings led by Drs Jeremy Fauconnier & Alain Lacampagne. (http://u1046.edu.umontpellier.fr/version-anglaise-2/

Specialty: Cardiac pathophysiology, ion channels, metabolism, excitation-contraction coupling

Description:

Patients with heart failure (HF) and preserved Left Ventricular Ejection Fraction (HFpEF) represent ~50% of HF patients and the prevalence of HFpEF is continuously rising in line with patient's ageing. HFpEF display an abnormal myocardial viscoelasticity and a disturbed ventricular compliance which directly impede diastolic filling. Dynamic changes in mechanical forces and strains trigger specific responses at the electrical, Ca^{2+}, and metabolic levels to match the mechanical demand. Such mechano-electrical feedback involves the activation of mechano-sensitive ion channels, the mechanical modulation of intracellular calcium handling and mechano-chemo-transduction pathways where mechanical sensors regulate the Ca^{2+} handling system and contractile properties of the cardiomyocyte. In collaboration with Pr. Hulot's lab (Team 7, UMR970/PARCC, Paris), we identified a microRNA (called miRelax_1), specific to primates and humans, which increases relaxation velocity resulting in faster and more efficient relaxation.

The combination of human induced-pluripotent stem cells (hiPSCs) and tissue engineering technologies notably allows the generation of 3D multicellular structures (called cardiac organoids) that recapitulate at least one organ function. These human-based models can be used to measure contraction and relaxation velocities and investigate molecular regulators.

Therefore, using up-to-date techniques in cellular electrophysiology, Ca^{2+} imaging and mitochondrial function on human cells-based organoids, **the aim of the present project is to characterize stretch-induced ionic responses and the mechano-calcium handling feedback to hiPSC-derived cardiomyocytes treated with miRelax_1.**

Qualifications: We are looking for a highly motivated postdoctoral holding a PhD with an excellent track record in cardiac physiology and/or cell biology. Scientific and technical expertise in cellular electrophysiology, confocal imaging, cell biology, molecular biology, biochemistry is required. The applicant must be proactive, organized, able to work independently as well as in collaboration with other team members.

Salary Details: The salary will be according to the guidelines of the Inserm Status, depending on experience. The position will be available for 2 years is part of a research grant recently founded by the "Agence National de la Recherche (ANR)".

Date: The position is currently available

How to apply: Candidates should send a complete CV including description of previous research projects, a cover letter describing research interests and career goals and the name and contact information of 2 references.

To apply for this position, please email the following information to Dr. Jeremy Fauconnier: jeremy.fauconnier@inserm.fr

Dr Jérémy Fauconnier, PhD,
CNRS Research Director