

# PhD position in Neuroscience

## Project Title

Transient Receptor Potential (TRP) channels as novel target for precision medicine in pain

## Overview

Painful peripheral neuropathy is a debilitating disorder, reflected in reduced quality of life. Therapeutic strategies are limited and, in most cases, targeted treatments are not available. Transient Receptor Potential (TRP) channels are key cellular sensors of noxious external stimuli at the beginning of the pain pathway. This research project involves the search for recurrent mutations of TRP ion channels in patients with severe chronic pain to understand whether there is a genetic predisposition to the development of the pain conditions and to develop personalized therapies to normalize the activity of the mutant channels.

The present project is strongly multidisciplinary and combines genetic screening of patients, biophysical study of TRP channel variants, use of patient-specific iPSC-derived sensory neurons, and rational design of TRP channel modulators.

To this end, we use functional techniques, including patch clamp electrophysiology and cellular imaging, to measure ion channel activity and the effects of mutations and pharmacological agents on the biophysical properties of ion channels. In addition, we employ animal models that mimic neuropathic pain conditions to conduct preclinical testing of potential therapies.

## Principal investigator and host laboratory:

Roberta Gualdani, Institute of Neuroscience (IoNS), UCLouvain, Belgium.

## Requirements

The candidate should hold a master's degree in Neuroscience, Biology, Medicine, Chemistry, Biomedical and Health Sciences or related fields at the start of the position. In addition, the candidate should have a keen interest in ion channel biophysics and pain signaling.

The candidate should be fluent in English and/or French.

The application should include a complete CV, a motivation letter explaining why the applicant is best suited for this project, and 2 letters of recommendation.

The project will start immediately after the selection of the candidate - The successful candidate will receive funding for 2 years (renewable) and will apply to competitive PhD fellowships (FRS-FNRS, FRIA).

For more details about the position, please contact **Roberta Gualdani**:  
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