

Individual Research Project

ESR 4

THE PROJECT

Chronic pain and comorbid disabilities: improving outcome measures in preclinical models.

Objectives

- 1/ To study behaviour under ethological conditions in animals with neuropathic pain.
- 2/ To investigate the effects of analgesics on behavioural alterations induced by chronic pain.

Methodology

The impact of neuropathic pain on behavioural parameters (social interaction, locomotor activity, food intake) will be tested in dedicated modules of the Phenoworld (PhW) in both female and male rats while relevant physiological parameters will be simultaneously recorded. Blood and CNS tissue samples across the time course will be collected to correlate endophenotypes with biochemical alterations (e.g. endocannabinoids) using liquid chromatography coupled with mass spectrometry (LiC-MS/MS). Gabapentine as reference treatment will be used to validate the behavioural measures.

Expected Results

A composite measure (scale) of pain-related disability will be obtained based on sensory, affective and other behavioural items (e.g. general activity, sociability). This composite will be model- and sex-sensitive. ESR 4 will acquire deep knowledge in behavioural phenotyping, LiC-MS/MS and statistics.

Supervisors and host organisations

Main supervisors and recruiting organisation:

Hugo Leite-Almeida

Escola de Medicina, Instituto de Investigação em Ciências da Vida e da Saúde, Universidade do Minho, Portugal

David Finn and Michelle Roche

National University of Ireland Galway, Ireland

Co-supervisor (company):

Augusto Filipe,
Tecnimede, Sintra,
Portugal

Planned mobility track and secondments:

UMinho, Portugal: M5-24: Use the PhW to assess individual behavioural phenotypes in normal and in chronic pain conditions.

NUIG, Ireland: M28-40: LiC-MS/MS quantification of serum and brain endocannabinoids.

Ted, Portugal: M25-27: Identification and characterization of new analgesic drugs; product development.

Enrolment in Doctoral degrees:

University of Minho and National University of Ireland Galway/Joint Diploma (upon further discussions).

THE POSITION

Duration

36 months

Salary

2753, 34€

Allowance

Mobility allowance 600€/month, Family allowance 500€/month (if required).

THE CANDIDATE PROFILE

Academic prerequisite

The applicant must have a MSc degree (obtained at the application date) in areas related with biological sciences (e.g. medicine, biology, pharmacy, etc.).

Knowledge on specific topics

Knowledge on neuroscience and more specifically on pain neurobiology (e.g. circuits, physiology, etc.) will be valued.

Knowledge statistics and programming will be valued.

Proficiency in English is mandatory

Technical skills

Prior experience with animal models, particularly regarding surgical training, tissue collection and behavioural paradigms (pain assessment, anxiety- and depressive-like behaviours) will be valued in the evaluation. Additionally, training in basic molecular and analytic techniques (rtPCR, western blot, HPLC, Mass Spectrometry etc.) will also be valued.

Exclusion criteria

Nationality is not a criterion: Researchers can be of **any nationality**. Rather the location of the researcher's residence or main activity during the 3 years prior to their recruitment is determining. Indeed, the candidate **must not have resided** or carried out their main activity (work, studies, etc.) **in Portugal** (the country of the recruiting beneficiary) for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention¹ are not taken into account.

The candidate shall, at the time of recruitment, be in the **first four years** (full-time equivalent research experience) of their research careers and **have not been awarded a doctoral degree**.

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before the 1st of August, 2021**