

Individual Research Project

ESR 15

THE PROJECT

Impact of circadian time on the antidepressant treatment: demonstration with a new assessment method (EEG)

Objectives

- 1/ To study the effect of time on the efficacy of rapid acting antidepressant in the chronic stress and chronic pain induced depression.
- 2/ To investigate whether EEG can be used as a biomarker to assess the treatment efficacy
- 3/ To assist organization of a scientific workshop

Methodology

Animal models of depression and animal behavior

EEG recording in freely moving rodents

Pharmacological treatments

Deep brain stimulation

Dissection of brain samples and biological analyses e.g. western blot, qPCR and ELISA

Expected Results

Data will provide critical novel insights into the impact of circadian time on the effects of rapid-acting antidepressants and may reveal specific EEG alterations predicting their therapeutic efficacy.

Supervisors and host organisations

Main supervisors and recruiting organisation:

Tomi Rantamäki

Laboratory of Neurotherapeutics, Division of Pharmacology and Pharmacotherapy, Faculty of Pharmacy, University of Helsinki, Finland

Co-supervisor:

Esther Berrocoso

University of Cadiz, Spain

Co-supervisor:

Domitille Boudard

Neurex Alsace Strasbourg, France

About the recruiting organisation: The University of Helsinki is an international scientific community of 40,000 students and researchers. It is one of the leading multidisciplinary research universities in Europe and ranks among the top 100 international universities in the world. The Faculty of Pharmacy is ranked #46 in the world in the ShanghaiRanking's Global Ranking of Academic Subjects 2020. It is located at Viikki Campus in Helsinki and has about 200 employees and about 800 undergraduate and

160 postgraduate students with well-organized doctoral school programmes. More information: <https://www.helsinki.fi/en/faculty-of-pharmacy>.

Planned mobility track and secondments:

***Helsinki** (Finland): Nov. 2021 to Aug. 2022 (10 months): EEG, in vivo drug administrations and molecular analyses.

***Strasbourg** (France): Sep. to Nov. 2022 (3 months): Organization of a scientific workshop.

***Cadiz** (Spain): Dec. 2022 to Nov. 2023 (12 months): EEG and DBS studies.

***Helsinki** (Finland): Dec. 2023 to Oct. 2024 (11 months): EEG, in vivo drug administrations and molecular analyses, writing of the thesis manuscript and defense.

*The exact timing of the mobility may be subject to changes

Enrolment in Doctoral degrees:

University of Helsinki and University of Cadiz / Double Diploma

The appointee must enroll to doctoral programmes leading to the award of a doctoral degree. More information on the application process to doctoral education at the University of Helsinki: <https://www.helsinki.fi/en/admissions-and-education/apply-doctoral-programmes/how-apply-doctoral-education> (includes also information on accepted ways of proving language skills, when applying to doctoral education; specific research plan and other doctoral application material will be prepared together with the PhD supervisor(s) if appointed to this position).

THE POSITION

Duration

36 months; estimated starting date Nov. 1st 2021

Salary and allowance

The salary is competitive and complies with the MSCA Work Programme: approx. 3500 euros per month before taxes, consisting of Living and Mobility allowance. A conditional Family allowance of 385 euros may be added to the salary.

Occupational health care is provided for university employees. Read more about the employee benefits at the University of Helsinki: <https://www.helsinki.fi/en/about-us/careers>. Please also see about arrival and family support: <https://www.helsinki.fi/en/about-us/careers/welcome>.

THE CANDIDATE PROFILE

Academic prerequisite

- Hold a Master's degree in relevant scientific disciplines, e.g. neuroscience, biomedicine, pharmacology, medicine
- Good/excellent academic performance
- Proficient in English (oral and writing)

Knowledge on specific topics

Considered as advantage:

- Experience in writing research articles
- Knowledge in pain and/or depression and/or antidepressant related research

Technical skills

- Demonstrate previous experience in a research laboratory (e.g. basic wet lab methods)

Considered as advantage:

- Experimental animal course completed
- Experience in animal surgery, in vivo pharmacology, animal (rodents) behavior, molecular biology, EEG, MATLAB

Exclusion criteria

Nationality is not a criterion: Researchers can be of **any nationality**.

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1/ 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 Finland** (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.*

2/ 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**.

* is measured from the date when a researcher obtained the degree which would formally entitle him or her to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the researcher is recruited, irrespective of whether or not a doctorate is or was ever envisaged.

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**Apply for this position at <https://happy-form.u-strasbg.fr/>
before the 1st of August, 2021**