

Post-Doctoral position, Senior scientist Epilepsy research program

The group of Dr. Etor Kabashi and Prof. Rima Nababout at the *Imagine* Research Institute of the Necker-Enfants Malades Hospital in Paris, France, is recruiting a senior post-doctoral scientist to develop projects investigating mechanisms of epilepsy, focusing on Developmental Epileptic Encephalopathies (DEEs).

The selected candidate will contribute to the Innov4-ePiK RHU project, funded by the National Research Agency as part of the French 2030 investment program and other translational projects focused on mechanistic. These ambitious research projects aim to propose a new therapeutic paradigm for patients with drug-resistant epilepsies.

Context

Epilepsies are a group of heterogeneous diseases having in common seizures onset and co-morbidities. Epilepsies affect around 1% of the population with a higher incidence in infants and children, with approximately 80% of these epilepsies initiating in childhood. In addition to medical, social, psychological, and economic burden due to seizures, epilepsies in childhood have a major impact on the neurodevelopment and autonomy in adulthood. To address these major challenges in childhood epilepsies, Innov4-ePiK program will establish game changing approaches to improve the outcome and quality of life of patients with DEEs. This is made possible thanks to the identification of innovative smart biomarkers based on clinical, electrical, biological, and imaging data from patients' cohorts associated with *in silico* and *in vivo* models.

Project

The main goal of this project is to investigate the physiopathological mechanisms of discovered potassium channel mutations in DEEs using *in vitro* and *in vivo* models. The candidate will be able to explore a range of scientific questions using zebrafish genetic models, patient cell lines and organoids with the goal of taking novel genetic discoveries from the mechanistic investigation to therapeutic leads. Our close collaboration with expert technological platforms (e.g. multi-omics, iPSC, imaging, electrophysiology, single-cell analysis, bioinformatics, etc.) allows access to the latest tools for fundamental research, biomarker identification and development of automated drug screening assays leading to in-house clinical applications. The day-to-day collaboration with the reference centre for rare epilepsies team and the lessons learned from the clinical groups and the cohorts' data collected will accelerate the translation from bench to bed.

Your profile

- Highly motivated PhD in molecular biology, genetics, neuroscience or related areas;
- More than 5years of experience with skills in epilepsy;
- Good publication track record;
- Experimental skills in hiPSC culture will be appreciated;
- Additional skills in animal experimentation (zebrafish) and cell imaging are considered as a plus.
- Team player attitude and problem solving skills;
- Self-motivation and ability to work independently are vital;

(Knowledge of French is not a requirement.)

Contract

- Fixed-term contract: 1 year, renewable.

During this period, the successful candidate will be encouraged to apply for an external postdoctoral fellowship to pursue the project.

- Starting date: flexible
- Salary: On experience

Your application

Please send a motivation letter with a statement of research interest, a detailed CV with publication list and three references to Prof. Rima Nabbout (rima.nabbout@aphp.fr) and in cc Julie Tahraoui (julie.tahraoui@institutimagine.org).

About us

The team of Dr. Edor Kabashi is involved in all the aspects of translational research in an integrative approach, from a better characterization of patients and their genetic markers to modelling and fundamental research to identify appropriate therapeutic targets, and ultimately developing clinical trials to test novel treatments. This research is highly patient driven, with extensive phenotyping using the multidisciplinary expertise in clinical testing and the state-of-the-art platforms that are available at the Imagine Institute in the Necker Hospital site (e.g. genomic sequencing, electrophysiology, metabolic screening, imaging), while fostering collaborations with a network of national and international collaborations.

Pr. Rima Nabbout, who leads the Reference Center for Rare Epilepsies (CReER) at Necker Hospital, is coordinating the epilepsy research project, bridging the clinical and

fundamental aspects for an integrative approach. CReER is internationally renowned for the phenotypic classification of patients, the genetic analysis of large patient cohorts

leading to the identification of novel genetic factors and delineating natural history of DEEs based on natural language processing and other AI techniques. Pr Nabbout and team are actively involved in the main orphan drugs and therapies development for rare epilepsies and recognized for spearheading successful clinical trials.