PhD Position
Role of the ribosome during neuronal regeneration

SECTOR: Higher Education Institution

LOCATION: France, Grenoble

RESEARCHER PROFILE:
□ First stage researcher,

INSTITUTION: Univ. Grenoble Alpes, University of Innovation

One of the major research-intensive French universities, Univ. Grenoble Alpes enjoys an international reputation in many scientific fields, as confirmed by international rankings. It benefits from the implementation of major European instruments (ESRF, ILL, EMBL, IRAM, EMFL*). The dynamic ecosystem, grounded on a close interaction between research, education and companies, has earned Grenoble to be ranked as the 5th most innovative city in the world. Surrounded by mountains, the campus benefits from a natural environment and a high quality of life and work environment. With 7000 foreign students and the annual visit of more than 8000 researchers from all over the world, Univ. Grenoble Alps is an internationally engaged university.

A personalized Welcome Center for international students, PhDs and researchers facilitates your arrival and installation.

In 2016, Univ. Grenoble Alpes was labeled «Initiative of Excellence ». This label aims at the emergence of around ten French world class research universities. By joining Univ. Grenoble Alpes, you have the opportunity to conduct world-class research, and to contribute to the social and economic challenges of the 21st century ("sustainable planet and society", "health, well-being and technology", "understanding and supporting innovation: culture, technology, organizations" "Digital technology").

* ESRF (European Synchrotron Radiation Facility), ILL (Institut Laue-Langevin), IRAM (International Institute for Radio Astronomy), EMBL (European Molecular Biology Laboratory), EMFL (European Magnetic Field Laboratory)

Key figures:
- + 50,000 students including 7,000 international students
- 3,700 PhD students, 45% international
- 5,500 faculty members
- 180 different nationalities
- 1st city in France where it feels good to study and 5th city where it feels good to work
- ISSO: International Students & Scholars Office affiliated to EURAXESS
MANDATORY REFERENCES:

IRS – Idex project: NEURIB

SUBJECT TITLE: Role of the ribosome during neuronal regeneration

RESEARCH FIELD: Central Nervous System, regeneration, neuroprotection, translation

SCIENTIFIC DEPARTMENT (LABORATORY’S NAME): Grenoble Institute of Neuroscience (GIN U1216)

DOCTORAL SCHOOL’S: EDCSV Ecole Doctoral Chimie Sciences du Vivant

SUPERVISOR’S NAME: Belin Stéphane

SUBJECT DESCRIPTION:

Central Nervous System (CNS) neurons are not able to regenerate their axons after injury. This discrepancy is due to a dual mechanism: first axonal growth capability decreases during development and second, the lesion itself diminishes regenerative capabilities and induces neuronal death. Numerous studies have aimed to uncover axon regeneration and neuroprotective mechanisms by analyzing neuronal mRNA content during CNS development and injury. Even if those experiments revealed interesting targets promoting to some extent axonal regeneration, they ultimately failed to expose all the programs necessary to stimulate sufficient axonal growth in order to rebuild functional circuits after injury. Indeed, it is now extensively described that mRNA and protein contents do not correlate in cells and importantly, cells rely on translational control to regulate the expression of key proteins. Indeed, several studies highlight that translational regulation is as important as transcriptional regulation. Our recent results demonstrate that injury targets specifically ribosomes, the main effector of mRNA translation to proteins. Different studies regarding neuronal development also point to the same conclusions. Based on these observations, we propose an innovative and original approach to overcome CNS regeneration failure by focusing on the role of ribosome composition. The objective of the project is to address the two-following working hypothesizes in the optic nerve injury, a well-known CNS injury model, in adult mouse before and after axon lesion:

- The ribosome will adapt its composition upon injury to directly regulate the expression at the translational level of key mRNAs involved in growth and survival.
- Modifying the composition of the ribosome will induce neuroprotection and/or regeneration in CNS after injury

The project will shed light on a paradigm shift: from a passive housekeeping ribosome to a direct translational regulator. The results will define the precise stoichiometry of ribosomal protein in neurons and during regeneration process and will lead to the development of new-targeted therapeutic strategies not only in case of CNS injuries but also more broadly for neurodegenerative diseases.

ELIGIBILITY CRITERIA

Applicants must hold a Master’s degree (or be about to earn one) or have a university degree equivalent to a European Master’s (5-year duration)

Applicants will have to send an application letter in English and attach:
- Their last diploma
- Their CV
- A short presentation of their scientific project (2 to 3 pages max)
- Letters of recommendation are welcome.

Address to send their application: stephane.belin@inserm.fr

SELECTION PROCESS

Application deadline: June 29th 2018 at 17:00 (CET)

Applications will be evaluated through a three-step process:

1. Eligibility check of applications in July 3rd 2018
2. 1st round of selection: the applications will be evaluated by a Review Board in July 15th 2018. Results will be given in July 17th 2018.
3. 2nd round of selection: shortlisted candidates will be invited for an interview session in Grenoble on **July 21th 2018**. (if necessary)

**TYPE of CONTRACT:** temporary-3 years of doctoral contract  
**JOB STATUS:** Full time  
**HOURS PER WEEK:** 35  
**OFFER STARTING DATE:** September 1st 2018  
**APPLICATION DEADLINE:** June 29th 2018 at 17:00 (CET)  
Salary: between 1768.55 € and 2100 € brut per month (depending on complementary activity or not)