

Brussels, June 15, 2021

Object: Post-doctoral position in the Neurochemistry Unit, Cellular and Molecular Division, Institute of Neuroscience, UCLouvain, Brussels, Belgium

The Neurochemistry Unit performs translational research on Multiple Sclerosis (MS), namely on the role of extracellular vesicles (EVs) and their bioactive components (microRNAs, lipids) on disease pathogenesis, by studying their impact on the immune response, neuroinflammation and myelin disruption/repair. Ultimately this project aims to develop novel nanomedicines incorporating the novel bioactive components (or molecules modulating their effects), to be delivered non-invasively to the central nervous system.

A large serum and CSF biobank collection is available to characterize EVs from MS patients. The protocols for isolating EVs are validated. Cellular models for analysis of the effects of bioactive components of EVs are being developed (peripheral blood mononuclear cells, oligodendrocyte, astrocyte and microglial cell lines).

The Institute of Neuroscience and the lab have access to all standard equipment to perform research (cell culture, RT-qPCR, protein analysis) but also to flow cytometry, ECLIA, Nanoparticle Tracking Analyzer and the SIMOA technology.

Required Qualifications: PhD degree in the field of Neuroscience, cell biology or immunology.

Preferred Qualifications: experience with molecular and cellular biology, flow cytometry, microscopy. Experience with lymphocytes T and B cell, microRNA research, and RNA-seq and bioinformatics is also highly desirable.

Brief Description of Duties: the Postdoctoral Associate will assist the Principal Investigators (Prof. Vincent van Pesch and Dr. Pietro Maggi) in conducting research on EVs in MS and related disorders and their association with clinical/radiological biomarkers.

- Within the predetermined research scope and methodology, conduct research experiments and supervise technicians, PhD students and eventually master students.
- Collect and analyze data, including periodical/literature search and utilizing specialized skills in related field to analyze the collected data.
- Participate/assist in manuscript writing for publication in scientific journals and/or presentations. Assist in grant writing.
- Lab maintenance, including equipment maintenance and ordering of supplies as needed.
- Maintenance of the blood and CSF biobank.

What we offer:

A two-year position initially funded in mobility, with possibility of extension.

An exciting research opportunity for a multidisciplinary and translational project.

Recent publications:

- *CSF microRNAs discriminate MS activity and share similarity to other neuroinflammatory disorders.* [Perdaens et al. Neurol Neuroimmunol Neuroinflamm 2020 Feb 5;7\(2\):e673](#)
- *Extracellular vesicles for the treatment of central nervous system diseases.* [Gratpain et al. Adv Drug Deliv Rev. 2021 May; 174:535-552. Doi: 10.1016/j.addr.2021.05.006](#)
- *Chronic White Matter Inflammation and Serum Neurofilament Levels in Multiple Sclerosis.* [Maggi et al. Neurology. 2021 Jun 4;10.1212/WNL.000000000012326](#)

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