

# **Postdoctoral Research Associate Opportunities**

## **Overall objectives :**

Three to five per 1,000 infants experience hypoxia-ischemia (HI) at birth, resulting in neurodevelopmental disabilities. There are currently no pharmacological treatments that provide protection against brain injury in neonates. Hypothermia is the only approved therapy for hypoxic-ischemic encephalopathy (HIE), but can only be used to treat full term infants and is only partially protective. HI and inflammation and related blood-brain barrier (BBB)/neurovascular unit dysfunction are important contributors that potentiate parenchymal brain injury. Both BBB dysfunction and inflammation represent important new therapeutic targets to prevent brain injury after HI. Therefore, studies examining potential neuroprotective strategies and elucidating mechanisms fundamental to HI injury in newborn infants are crucial. We recently discovered and patented a novel class of molecules, which are purine derivatives drugs (PDDs). We have demonstrated that PDD cross the BBB and are anti-inflammatory and neurovascular protective agents. In addition, we have done proof-of-concept showing that administration of PDD303 has substantial neuroprotective effects in neonatal rats after exposure to HI. These promising results support our contention that PDD303 potentially could have beneficial translational efficacy as a therapeutic agent to attenuate/prevent HI related brain damage in human neonates.

## **Missions and Environnement :**

The candidate will explore the innovative therapeutic strategy targeting the BBB and inflammation through GSK3 $\beta$  and prohibitin modulation that could add efficacy to the actual standard of care for term and preterm infants.

The candidate will work in a highly-productive scientific environment with the PI, lab technicians, postdoctoral researchers, graduate and undergraduate students. Therefore, the candidate will employ innovative approaches to generate high quality data and communicate with the research community. The candidate will receive comprehensive mentoring in research and grant writing, has to be highly motivated, enthusiastic, committed, and have an outstanding work ethic.

## **Requirements :**

Preference will be given to individuals with **PhD and/or MD** (MS could be considered) in **neuroscience/pharmacology/or related disciplines**; expertise with in **vivo animal experimentation** and **hands-on experience with along with neuroscience expertise**; familiarity with neuroscience bench work techniques, including molecular biology, immunohistochemistry, cell culture, antibody, protein production, and proven writing ability. Experience with surgical procedures, neurobehavioral, MRI, radioactive materials, data acquisition, and statistical analysis is preferred. The candidate must have excellent **interpersonal, organizational, verbal and written communication skills, and appropriate experience.**

**Availability of Postdoctoral position for 2-3 years:** September, 2021 (deadline for apply : May 2021)

**Location :** Frédéric Joliot Institute/DMTS/Pharmacology and Immunoanalysis Unit/Neurovascular Pharmacology group, CEA Saclay (91191 Gif S/ Yvette)

**Application Instructions :** Sandrine Leblois and Dr Aloïse Mabondzo  
(Email : [sandrine.leblois@cea.fr](mailto:sandrine.leblois@cea.fr); [aloise.mabondzo@cea.fr](mailto:aloise.mabondzo@cea.fr))