Predoctoral (FPI) position in Neuroscience

Molecular Physiology of the Synapse Laboratory

Institute of Biomedicine of Seville
(IBiS, HUVR/CSIC/Universidad de Sevilla)
Seville (Spain)

Molecular mechanisms of CSPalpha/DNAJC5 in Kufs disease/CLN4 and in the maintenance of presynaptic terminals (MoMCSP)

(Ref: PID2022-138957NB-I00)

Mutations in the DNAJC5 gene, which encodes the synaptic vesicle protein Cysteine String Protein alpha (CSPalpha/DNAJC5), have been identified as the cause of adult-onset autosomal dominant neuronal ceroid lipofuscinosis (NCLs) Kufs disease/CLN4. This devastating neurodegenerative disease primarily affects young adults. Recent discoveries have highlighted that DNAJC5 mutations lead to lipofuscinosis in neurons in vivo through a gain of a novel, toxic function of CSPalpha/DNAJC5, rather than a mere lack of CSPalpha/DNAJC5 (López-Begines et al., bioRxiv 2023). Conversely, knock-out mice lacking CSPalpha/DNAJC5 exhibit presynaptic degeneration, especially in neurons with high-firing rates. Over the past years, our laboratory has made significant progress by generating novel cell lines and mouse models and conducting unbiased proteomics and single-cell transcriptomic analyses. These endeavors have unveiled unexpected molecular scenarios shedding light on the physiological role of CSPalpha/DNAJC5 and the underlying mechanisms behind the pathology associated with its mutations or absence.

We are currently seeking a **highly motivated candidate to embark on an international PhD project** aimed at investigating the intricate **molecular mechanisms underlying lipofuscinosis and presynaptic degeneration.** This research will employ **multidisciplinary approaches**, leveraging the cutting-edge tools and knowledge developed in our lab. Contract supports **four years' salary** and **research stays abroad at other labs at USA or Europe**.
More details here: https://shorturl.at/euMQ8

Candidates should email CV and contact information for 3 references to Dr. Rafael Fernández-Chacón (sinapsis-ibis@us.es).
Email subject: Predoc-MPS-1-2023.
Deadline: August 31st, 2023
(but better if applications are receive as soon as possible)