

Postdoctoral position “Microbiota and enteric nervous system dysfunctions in Autism Spectrum Disorder”

A postdoctoral position funded by Region Pays de la Loire is open for **two years** at the laboratory TENS Inserm U1235 “The enteric nervous system in gut and brain disorders” (Nantes, France; website: <https://www.inserm-tens.com/>). The project involves a collaborative work with two other labs: Institut du Thorax Inserm U1087 (Nantes) and SOPAM Inserm U1063 (Angers). The research campus of Nantes and Angers provide a stimulating and scientifically rigorous environment with all required facilities.

Autism spectrum disorders (ASD) is a neurodevelopmental disorder defined by lack of social skills, repetitive behaviors and restricted interest. The underlying pathophysiological mechanisms are largely unknown. Current evidence indicates that behavioral symptoms are related to anomalies in brain neuronal connectivity and activity. Beside behavioral symptoms, ASD is frequently associated with severe gastrointestinal disorders, which might result from dysfunctions of the enteric nervous system located throughout the digestive tract. However, it is still unknown whether abnormalities in ENS connectivity occur in ASD. In addition, recent studies have emphasized the importance of gut microbiota as a co-factor associated with ASD raising the hypothesis that modifications of gut microbiota in ASD might contribute to digestive and also brain impairments. The objective of the project is to investigate the role of microbiota from ASD patients, compared to control subjects, on ENS neuronal connectivity and activity by transferring human microbiota to rat and mouse models. We will also decipher the involved mechanisms by studying the contribution of extracellular vesicles as signaling cargos between microbiota and enteric neurons. The postdoctoral fellow will use a combination of electrophysiology, biochemical assays and cell biology approaches including cell culture and extracellular vesicles-linked technologies.

The candidate must hold a PhD in biology. She/he should be highly motivated and show strong interest in the microbiota-gut-brain axis field and/or neurophysiology and/or neurogastroenterology. Experience in electrophysiology would be appreciated but is not required. The candidate should have a good level of proficiency in English and have excellent organization and communication skills as the project involves collaborations between 3 labs.

Interested applicants should send a CV, brief statement of research experience and interests, and two references to Dr. Hélène Boudin (helene.boudin@univ-nantes.fr), Dr. Gildas Loussouarn (gildas.loussouarn@univ-nantes.fr) and Dr. Ramaroson Andriantsitohaina (ramaroson.andriantsitohaina@univ-angers.fr).

Starting time : first trimester 2021