Les "Lundis de l'IPSIT "

« A gut feeling about the brain »

Organisateurs : Laurent Tritschler (Inserm CESP, Team MOODS, Université Paris-Saclay, Orsay),
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Lundi 22 mai 2023

09h15 - 12h15

Université Paris-Saclay - Bât. Henri Moissan - 17, avenue des Sciences, 91400 ORSAY
(Salle 2004 -HM1 recherche 2e étage)

***INSCRIPTION GRATUITE MAIS OBLIGATOIRE* par mail** : nadine.belzic@inserm.fr
(Limitation des places disponibles)

- **9h15 - 9h30** ***Accueil des participants***

- **9h30 - 10h15** **Sofia CUSSOTTO** (UMR-1018, CESP-Inserm, Team MOODS, Université Paris-Saclay, Orsay, 91)

There is a growing recognition of the involvement of the gut microbiota in drug metabolism and vice versa the impact of drug intake on the microbiota. In this talk, following a brief introduction on the microbiome-gut-brain axis, I will present some data on the interactions between psychotropic drugs and the gut microbiota in a preclinical model.

« Psychotropic drugs and the gut microbiota »

- **10h15 - 10h45** ***Pause-café - Discussions***

- **10h45 - 11h30** **Laurent NAUDON** (UMR-1319, Institut MICALIS, Équipe AMIPEM, INRAE, Jouy-en-Josas, 78)

Autism spectrum disorder (ASD) is a multifactorial neurodevelopmental disorder characterized by repetitive behaviors and impairments in social interaction and communication. Many studies report a distinct gut microbiota composition in people with ASD compared to typically developing people. While the origin of those microbiota alterations is unknown, and might be influenced by the restrictive dietary preferences or gastro-intestinal (GI) abnormalities of some ASD individuals, they could worsen ASD-related symptoms. Therefore, we investigated the effect in germ-free (GF) mice of a fecal microbiota transplantation (FMT) from children with ASD on ASD-related behavior and ASD-related brain, immune and GI parameters. This study is a part of the pre-clinical component of the GEMMA project (Genome, Environment, Microbiome and Metabolome in Autism), a prospective study supported by the European Commission.

« Gut microbiota and autism.
Preclinical study from the European Gemma project »

- **11h30 - 12h15** **Aleksandra DECZKOWSKA** (Brain - immune communication lab, Institut Pasteur, Paris, 75)

In contrast to other organs, the CNS is surrounded by specialized barriers that limit its contact with immune cells and microbial products in the blood. However, such factors DO dynamically shape brain function in homeostasis and disease. Because of this unusual anatomy, the pathways of blood-brain communication are still poorly understood, while this understanding would provide fundamental insight into brain function regulation and neurological disease mechanisms.

The choroid plexus (CP) epithelium is a monolayer barrier tissue, which on the side facing the blood has the ability to sense such peripheral factors, and on the side facing the brain, produces the cerebrospinal fluid (CSF)–a liquid carrying nutrients and signaling molecules, which contacts nearly all brain cells, and ensures brain homeostasis. We study how the peripheral immune and microbial factors may shape brain function indirectly, via regulation of the CSF properties at the CP epithelium in brain development, normal physiological function, aging, and disease. Our goal is to identify fundamental principles of physiological brain regulation by the peripheral factors to pave the way for future investigation of the gut-blood-CP-brain communication circuit in neurological disease.

« Remote control: Immune signaling at the choroid plexus shapes brain function throughout life »