UNIL | Université de Lausanne Département de physiologie Rue du Bugnon 7+7a CH-1005 Lausanne

MONDAY SEMINAR

Monday, March 25th, 2019 – 12h15 Department of Physiology, Bugnon 7, 1005 Lausanne Seminar room, 6th floor

The Expanding role of Lipid Droplets in Neurodegenerative diseases

Prof. Bertrand Mollereau, Ph.D Laboratoire de Biologie et de Modélisation de la Cellule Institut Universitaire de France Ecole Normale Supérieure de Lyon Lyon, France



Host : Prof. Christian Widmann



Increasing evidence suggests that dysregulation of lipid metabolism is associated with neurodegeneration in brain disorders such as Alzheimer's and Parkinson's diseases. Lipid storage organelles (lipid droplets, LDs), accumulate in many cell types in response to stress, and it is now clear that LDs function not only as lipid stores but also as dynamic regulators of the stress response. We recently showed that *dFatp (Drosophila fatty acid transport protein)* is required and sufficient LD formation in retinal pigment cells (RPCs) and that *FATP*-mediated LD formation in RPCs promotes neuronal homeostasis (Van Den Brink et al. 2018). Furthermore, we used a *Drosophila* expressing alpha-synuclein as model of Parkinson's disease (PD) in which we observed a neuronal accumulation of LD in Drosophila. During the seminar, I will discuss the mechanisms leading to LD accumulation and its pathological relevance in neurodegeneration.

Reference:

Van Den Brink DM, Cubizolle A, Chatelain G, Davoust N, Girard V, Johansen S, Napoletano F, Dourlen P, Guillou L, Angebault-Prouteau C, Bernoud-Hubac N, Guichardant M, Brabet P, Mollereau B. Physiological and pathological roles of FATP-mediated lipid droplets in Drosophila and mice retina. PLoS Genet 2018, 14(9): e1007627. 10.1371/journal.pgen.1007627.