

Friday March 17th, 2017 – 11h30

Conference room AI 1153 (*) - EPFL - Lausanne

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“mTORC1 signaling orchestrates bimodal control of food intake by hypothalamic POMC neurons”

Host: Prof. Kristina Schoonjans

Abstract:

Food intake is a highly complex behavior controlled by a series of neural circuits containing specialized neuronal cell types. Proopiomelanocortin (POMC)-expressing neurons of the hypothalamic arcuate nucleus play a major role in the regulation of energy balance and are therapeutic target for the treatment of obesity. POMC neurons are classically considered as key drivers of the cessation of feeding. By using single-cell RNA analysis, pharmacology, electrophysiology, chemo- and optogenetics we now demonstrate that POMC neurons form different subpopulations able to produce both excitatory and inhibitory neurotransmitters. Our study therefore demonstrates that GABAergic and glutamatergic POMC neurons participate to the regulation of feeding behavior and that their function is under the control of the mechanistic target of rapamycin (mTOR) pathway and the cannabinoid type 1 (CB1) receptor signaling, two molecular main players of the regulation of neuronal activity and function.

(*) IMPORTANT NOTICE: All external participants have to pass through SV Reception/Welcome Desk to be able to access to AI 1153.

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