Titre de l'annonce	PhD position available : Identification of the neuronal populations of the hypothalamus involved in paradoxical (REM) sleep
Ville	BRON (LYON)
Pays	France
Texte de l'offre	The lateral hypothalamus (LH) regulates homeostatic processes across many physiological functions, including energy metabolism, feeding behavior, thermoregulation and sleep. We and our collaborators Markus Schmidt and Antoine Adamantidis in Bern, have shown that LH melanin concentrating hormone (MCH) and, more recently, LIM Homeobox 6 (Lhx6) neurons are activated during REM sleep and might control its expression (Jego et al., 2013; Lee et al., 2020; Verret et al., 2003). The Bern group has demonstrated that the MCH system is critical for the increase in REM sleep induced by increasing ambient temperature (Ta) toward the high end of the thermoneutral zone (Komagata et al., 2019). In addition to MCH and Lhx6 neurons, a large proportion of the LH neurons activated during REM sleep remain to be characterized. Our published and preliminary data using a new transgenic mouse model (TRAP mice) allow identification of additional subpopulations of LH neurons activated during REM sleep. The PhD student working in Lyon will use the TRAP mouse model to determine the populations of LH neurons activated during REM sleep. He/she will also determine the REM-active afferents to the specific subpopulations of REM-active LH neurons using cell type specific retrograde labeling in TRAP mice. The PhD student will be a member of a joint SNSF-ANR grant between our group in Lyon and that of the group in Bern. The two research labs will coordinate utilization of complementary technologies. In vivo optogenetics and fiber photometry with genetically engineered mouse models and electrophysiological recordings implemented in Bern will be combined with state-of-the-art functional neuroanatomy using TRAP and Cre mice, FISH and rabies virus for cell-specific retrograde tracing in the Lyon group. Our results will address mechanisms at the origin of the onset and maintenance of REM sleep and the modulation of its quantities by its deprivation and increase in ambient temperature. This work is key to understand the function of REM sleep and the identification of its role in pathologies such as insomnia, narcolepsy and depression.
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Type d'emploi	Thèse - PhD

Type de contrat	doctoral (3 ans) - ED476 NSCo
Date limite de candidature	**30/11/2021**
Date début de fonction	01/01/2022
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