



## **MASTER 2 Fundamental and Clinical Neurosciences**

### **Internship proposal 2022-2023**

*(internship from January to June 2023)*

**Host laboratory:**

Stem Cell and Brain Research Institute INSERM 1208, 18 Avenue du Doyen Lépine 69500 Bron France, <http://www.sbri.fr>

**Host team:** Chronobiology and Affective Disorders. <http://www.sbri.fr/team/chronobiology-and-affective-disorders>

**Internship supervisor:** Nasser Haddjeri, PhD, DR2 INSERM, [nasser.haddjeri@inserm.fr](mailto:nasser.haddjeri@inserm.fr)

**Project title:** Mechanisms of LSD as a novel drug for depression treatment

**Project summary:**

Major depression (MD) is the most common psychiatric disorder. Actual pharmacotherapies remain insufficient due to a delayed onset of antidepressant action, a lack of full therapeutic effects and refractory forms of MD occurring in one third of the patients. Lysergic acid diethylamide (LSD) is a serotonergic psychedelic compound receiving increasing interest due to putative anxiolytic and antidepressant properties. However, the potential neurobiological mechanisms mediating these effects are still not known. Accordingly, using in vivo electrophysiological and behavioral paradigms, the aim of the program is to assess the impact of acute LSD administration on depression/anxiety-like behaviors and on the activity of serotonin neurons originating in the dorsal raphe nucleus in rat. Hence, these experiments will strengthen a basic foundation for considering the development of LSD as a rapid acting antidepressant for future therapy in treatment-resistant depression.

**Relevant publications:**

Mnie Fiali O, Faure C, Lambas-Senas L, El Mansari M, Belblidia H, Gondard E, Etievant A, Scarna H, Didier A, Berod A, Blier P, Haddjeri N (2011): Pharmacological blockade of 5-HT7 receptors induces a fast antidepressant-like response. *Neuropsychopharmacology*. 36(6):1275-88.

Etievant A, Oosterhof C, Betry C, Abrial E, Novo-Perez E, Rovera R, Scarna H, Devader C, Mazella J, Wegener G, Sánchez C, O Dkhissi-Benyahya, C Gronfier, Coizet V, Beaulieu JM, Blier P, Lucas G and Haddjeri N (2015): Astroglial control of the antidepressant effects of prefrontal cortex deep brain stimulation. *EBioMedicine*. 2(8): 898-908.

Kanzari A, Bourcier-Lucas C, Freyssin A, Abrous N, Haddjeri N and Lucas G (2018): Inducing a long-term potentiation in the dentate gyrus is sufficient to produce rapid antidepressant-like effects. *Molecular Psychiatry*. 23(3): 587-596.

Delcourte S, Etievant A and Haddjeri N (2021): Role of central serotonin and noradrenaline interactions in the antidepressants action: Electrophysiological and neurochemical evidence. *Progress in Brain Research*. 259: 7-81.

Please send your proposal to [marion.richard@univ-lyon1.fr](mailto:marion.richard@univ-lyon1.fr) for publication on the Master of Neuroscience website.