

ECNP RESEARCH INTERNSHIP 2018

In November 2018, I had the opportunity to spend two weeks at the laboratory of prof. Laurence Lanfumey, at INSERM U 894 in Paris.

The main research focus of the lab is to study phenotypes related to psychiatric diseases, through animal models. The serotonergic neurotransmission is deeply investigated, as well as neuroplasticity mechanism related to the BDNF/TrkB signalling pathways. Specifically, the serotonergic receptor 5-HT_{2A} has been examined in relation with BDNF-induced brain plasticity, antidepressant responses and PTSD-like behaviours. And recently, great attention has been focused on the 5-HT₇ receptor, that is spread in hippocampus and it seems to modulate glutamatergic transmission and neuroplasticity in this region.

During my internship, I attended the lab every day from 9 am to 17 pm. I take part to daily research activities and I had the opportunity to deeply study serotonergic receptors signalling and functions. The intern of the lab took care of me, showing me procedures and techniques, as well as professor Lanfumey, and every researcher explained me his own project. I used to follow the daily activity of the lab. I observed researchers during daily activity, as animal care and drug administration, immunohistochemistry process, RNA extraction and analysis, etc.

I also took part in some research activities and I performed an immunohistochemistry process on my own, as follow. Briefly, I blocked serial sections of mice brain with PBS containing goat serum and they have been incubated with rabbit antibodies against Ki-67 (primary antibody), overnight at 4°C. Then, they have been incubated with the secondary goat anti-rabbit antibody, stained using the complex Avidine Biotine and then 3,3'-diaminobenzidine has been added. Reactions were stopped by 3 x 5 min washing in PBS. Sections were finally fixed on slides and covered.

In the end, I am glad to have had the opportunity to attend this research internship: I think that this kind of experience would be very important for me, as a junior scientist. First of all, I had the opportunity to know researchers working in the field of preclinical psychiatry and I learned a lot about laboratory techniques and methodology. Moreover, this experience may help me to build a network between preclinical and clinical research, that may be very important in order to improve our knowledge and progresses in neuroscience. In particular, I am glad to have attended the lab of professor Lanfumey: I really improved my knowledge in serotonergic mechanisms and I learned so much about preclinical research about neuroplasticity. Moreover, I think that the lab is very well organised and I found it inspirational enough to suggest some improvement in my department in Italy.

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