Project: «Phosphorylation serving as a regulator of Arc function on AMPA-receptor trafficking»

Place and date: 22.05 - 06.08.2017, IINS, Bordeaux

The goal of the project was to learn a new method and use it to study a potential effect on AMPA-receptor trafficking by overexpressing my protein of interest, Arc, in cultured hippocampal neurons. During the time spent in Daniel Choquet's lab and with BIC I have learned a new imaging technique, uPAINT, and increased my knowledge on microscopy in general. This method requires post-processing of data which I'm now able to perform. My knowledge on the subject is greatly enhanced and I'm more capable of critically evaluating such experiments. I have also improved my skills in use of analysis software and the way of presenting scientific data.

The data output is variable. Some time was spent to learn the method and optimize experiments. We also faced problems with some degradation of antibody and cell culture viability. But in all, I collected a good amount of data which will have to be critically analyzed before giving conclusions. The amount should be sufficient to give an indication of robustness and whether the project should be continued and expanded.

The plan was to include phosphomutants of Arc to study whether this is a regulatory mechanism. In my project description I focus on a specific site (206), but due to novel findings in one of my other projects I decided to shift focus to other residues. These datasets are smaller and still needs to be evaluated. The second part of the proposed project on endocytosis was not performed in Bordeaux due to limited access to cultured hippocampal neurons. However, these can be done in Norway.

It's been a great experience to see a new scientific environment and to interact with the people who are experts in this field. I have expanded my network and will use it during the continuation of this project in Bergen. This time in Bordeaux has been a turning point for me in terms of scientific interest, future research and personal growth.

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