# Improvements on multi-color STORM:

# why super-resolution of both the protein and its cellular context matters?

Mapping the nanoscale arrangement of synaptic proteins is a key to understand the molecular logic of neural transmission. STochastic Optical Reconstruction Microscopy (STORM), a super-resolution technique that relies on determining the position of single molecules could tackle this challenge. However, one of the major drawbacks of STORM imaging is that cellular membranes are not visible and interpreting data in a super-resolved cellular context still remains a difficult task.

We established a method by which the plasma membrane of a subpopulation of neurons can be selectively labeled and visualized at the level of single molecules. In order to obtain multi-color STORM image of the plasma membrane and the protein of interest, we screened several fluorescent dyes and identified the most optimal use of the buffer conditions in tissue preparations. Now we work on the alignment of multi-color images and on the issues arising from imaging spectrally different dyes using different filter cubes.