Máster en Investigación Biomédica

Facultad de Ciencias

Research Project Proposal
Academic year 2017-2018

Project Nº 30 ASIGNADO
Title: Circuit-specific manipulations for psychiatric and neurodevelopmental diseases

Department/ Laboratory
• **Roche Pharma Research and Early Development Neuroscience, Ophthalmology and Rare Diseases, Roche Innovation Center Basel, F. Hoffmann-La Roche Ltd, Basel, Switzerland**
• **Systems Neuroscience Lab, CIMA, University of Navarra, Pamplona, Spain**

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Summary

This research project will be carried out at the Discovery section of the Neuroscience department at the Roche Innovation Center in Basel, Switzerland; one of the most important hubs for the research and development of novel medical solutions worldwide. With the idea that entrepreneurship and scientific research can improve human health, Roche has become the world's largest biotech company, the global leader in oncology, the leading provider of in vitro diagnostics, and a pioneer in personalised healthcare.

Research will be focused into investigating the impact of brain-circuit-specific manipulations on fMRI readouts relevant for psychiatric and neurodevelopmental diseases (NDD). It will involve in vivo imaging activities such as BOLD fMRI, cutting-edge optogenetic and biomarker technologies.

By completing the project, the candidate will master surgical skills allowing for the optogenetic manipulation of brain circuitry in rodent models, performing fMRI recordings in rodents, conducting cognitive behavioral assessments, immunohistochemistry, analyzing data and present experimental findings at lab meetings. In addition, he/she will perform literature searches and conclude results in NDD research field

References

Ryali S et. al. Neuroimage. 2016;132:398-405. doi: 10.1016/j.neuroimage.2016.02.067

Lee J. H. et al. Nature, 2010;465, 788–792. doi:10.1038/nature09108