**Clémentine Bosch-Bouju, postdoc NutriNeuro**



I studied Neuroscience in Poitiers (2003-2006) and in Paris (UPMC, 2006-2008). My main research field is the pathophysiology of Parkinson’s disease and I’m mainly mastering electrophysiology and optogenetics. I did my PhD at the College de France (2008-2011, <http://www.college-de-france.fr/site/en-cirb/venance.htm>) in the lab of Dr Laurent Venance where I learnt patch-clamp electrophysiological recordings. I completed my PhD project by deciphering one of the mechanisms of action of deep brain stimulation, a powerful therapy used for Parkinson’s disease. After my PhD, I moved for a first postdoc in New Zealand at the University of Otago in the lab of Dr Louise Parr-Brownlie (2011-2013, http://bgrg.otago.ac.nz/index.php/louise-parr-brownlie) where I learnt freely-moving recordings techniques. I also entirely developed in the lab optogenetic stimulations combined with in vivo recordings.

For my second post-doc, I joined in 2014 the NutriNeuro lab to bring my skills in electrophysiology to understand the role of poly-unsaturated fatty acids (PUFAs) in brain function and in particular in depression.We are focusing on the endocannabinoid system because NutriNeuro has demonstrated that content of PUFAs in the diet has a direct effect on the functionality of the endocannabinoid system (Lafourcade et al., 2011; Larrieu et al., 2012), therefore, studying the link between depression, PUFAs and endocannabinoids constitutes a very promising way to set-up new therapeutic strategies. For that, we use a protocol of chronic social defeat stress, known to induce anxiety and depressive-like behaviours in mice, and we are studying with patch-clamp recordings in these mice the functionality and the plasticity of the endocannabinoid system, highly implicated in depression.

To pursue this project, I’m expecting to set-up freely moving electrophysiological recordings coupled with optogenetics stimulations. In parallel to this project, I’m collaborating with other researchers at NutriNeuro to bring my skills in electrophysiology to their studies. For this post-doc, I benefit until 2016 from ANR fund and from Agreenskills fellowship, a European program that promotes post-docs in the field of nutrition, agriculture and environment.

(<http://www.agreenskills.eu/>)

    **Bosch-Bouju C**, Smither R, Hyland BI, Parr-Brownlie LC **(2014)** Reduced reach-related modulation of motor thalamus neural activity in a rat model of Parkinson’s disease. ***Journal of Neuroscience***, Accepted.

      **Bosch-Bouju C**, Hyland BI, Parr-Brownlie LC **(2013)** Motor thalamus integration of cortical, cerebellar and basal ganglia information : implications for normal and parkinsonian conditions. ***Frontiers in Computational Neuroscience*** 7 :163.

      Nelson MJ, **Bosch C**, Venance L, Pouget P **(2013)** Microscale inhomogeneity of brain tissue distorts electrical signal propagation. ***Journal of Neuroscience*** 33, 2821-2828.

      **Bosch C**, Mailly P, Degos B, Deniau JM, Venance L **(2012)** Preservation of the hyperdirect pathway of basal ganglia in a rodent brain slice. ***Neuroscience*** 215, 31-41.

      **Bosch C**, Degos B, Deniau JM, Venance L **(2011)** Subthalamic nucleus high frequency stimulation generates a concomitant synaptic excitation-inhibition in substantia nigra *pars reticulata.* ***J Physiol*** 589:4189-4207.

      Deniau JM, Degos B, **Bosch C**, Maurice N **(2010)** Deep brain stimulation mechanisms: beyond the concept of local functional inhibition. ***Eur J Neurosci*** 32, 1080-1091.

      Bertran-Gonzalez J, **Bosch C**, Maroteaux M, Matamales M, Herve D, Valjent E, Girault JA **(2008)** Opposing patterns of signaling activation in dopamine D1 and D2 receptor-expressing striatal neurons in response to cocaine and haloperidol. ***Journal of Neuroscience*** 28, 5671-5685.