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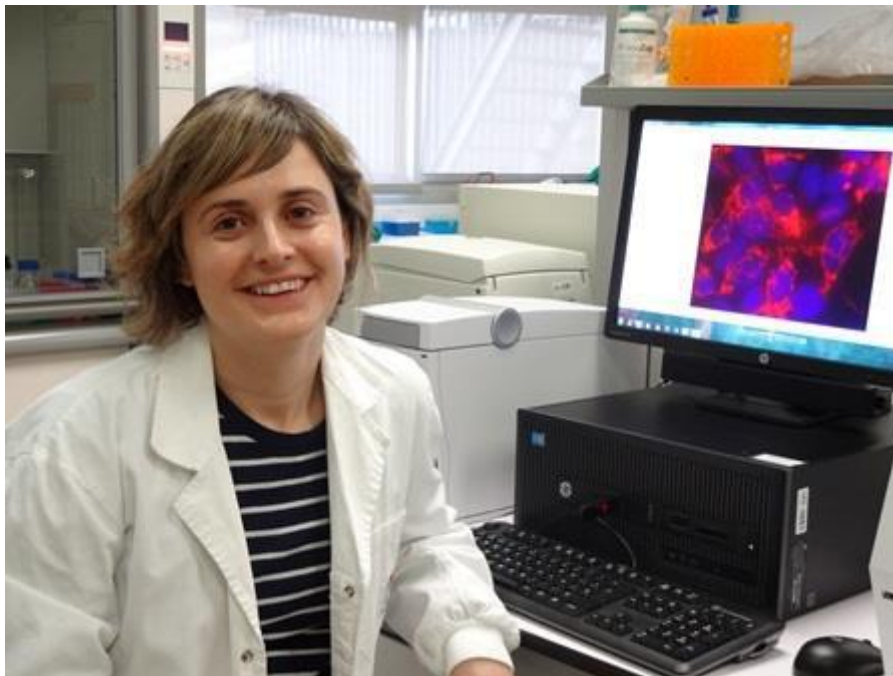
Mitochondrial Neurohatology

1.- How and why you ended up working as a neuroscientist?

After obtaining my Degree in Biology, it was clear to me that I wanted to pursue a career in Neuroscience. At that point, Dr. Mercè Unzeta from the Department of Biochemistry and Molecular Biology gave me the opportunity to join her group and obtain my PhD in the UAB's Neuroscience program. This experience got me hooked on research and encouraged me to continue my training in this field (in which I already got the feeling that was going to be very stimulant)

2.-What research are you currently developing?

I'm currently developing novel tools for the cell type-specific isolation of mitochondria in complex tissues such as the brain. The brain contains multiple types and subtypes of cells, physically intermingled, which challenges the study of the cell-specific functions. In addition, mitochondria, which are known as the powerhouses of the cell, are cellular structures present in all cells. However, recent studies suggest that not all mitochondria are equal, and that its composition and function is related to the cell type-specific environment. Our technology will provide the scientific community with a new tool that will allow the study of mitochondria at a level not currently attainable, and address the issue of cell type-specific mitochondrial heterogeneity.



3.-What are the major contributions in neuroscience in the past 20 years?

To me, one of the major contributions in Neuroscience in the last years has been the possibility to characterize and define, at an unprecedented level, all the different neuronal populations making up the brain. In the last years, a wide variety of tools

that allow for the dissection of neuronal complexity at all levels, from their transcriptional profile to its function and connectivity, have been developed. In my opinion, obtaining this level of resolution has been one of the major advances in Neuroscience in the last decade.

4.- Could you recommend us a research paper published during the last years?

I would suggest Ed Boyden and Karl Deisseroth's paper where they describe for the first time the use of optogenetics to modulate neuronal activity (Boyden et al. (2005) Millisecond-timescale, genetically targeted optical control of neural activity. Nat Neurosci. 8(9):1263-8). Optogenetics have revolutionized the Neuroscience field. Therefore, this paper, along with the report describing the discovery process from the first author point of view (Boyden ES. A history of optogenetics: the development of tools for controlling brain circuits with light. F1000 Biol Rep. 2011; 3: 11), seem to me a quite stimulating read.

5.- How will you encourage future scientists to be part of Neuroscience research?

Neuroscience is one of the fields where one can expect the most significant advances to take place in the next few years due to the intense activity on the generation of novel tools and discovery technologies targeted to the nervous system that has taken and will take place during this decade. Neuroscience is a mystery in which there is still a lot to be discovered, and a significant part of this new knowledge, which has a direct impact on society, will be acquired in the next few years. It is not to be missed!