

# INcite knowledge

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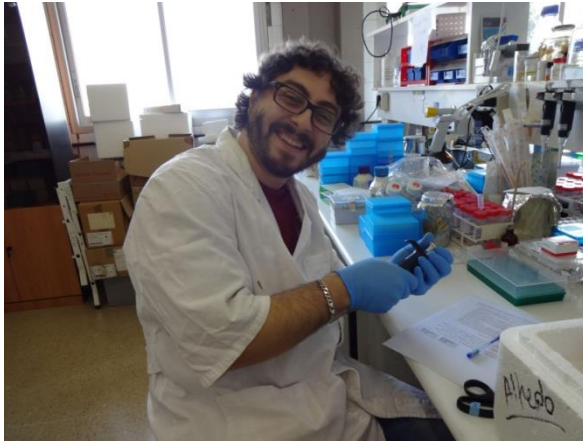
**Molecular and Cellular Basis of Neuronal Survival– Dr. José Rodríguez Álvarez.**

## *1.- What research are you currently developing?*

I am currently working in finding out which are the processes that are affected by the presence of beta-amyloid peptide at the synapses in the early stages of Alzheimer's disease, resulting in their loss when neuronal death is still not occurring. The result of the progressive loss of synapses is the onset of cognitive deficits.

## *2.- How is the day-to-day inside your laboratory?*

My day to day is pretty intense. The planning and organization of the group work in the laboratory is very important, so everyone who works in it can do it in the best conditions. One of my daily tasks is to ensure that the laboratory processes work perfectly. From there, you need to read to keep abreast of how science is going on in the world (as reading daily newspapers but at scientific level), consider this information and see how you can answer in the best way and with our resources issues that we are developing with our project. Here comes purely laboratory work: to plan experiments and carry them out. After that, analyzing the data and draw conclusions. Every week we have a day to share results with the rest of the group, to discuss the results and to see how we continue focusing our research. It is also very important to support students who are learning to move in a lab and those who are developing their thesis projects. It is key to having a reference nearby to help them learn to think and acquire their own criteria about the work they do every day and to be demanding with themselves. I try to help them with my experience to create solid foundations in their early formative stages as "scientifics."



### *3.- What therapeutic applications do you think can your research have?*

This is the fashionable research question, in this increasingly utilitarian world and how to respond it is what we are trying to learn in order to win points to get funds for our research. What we do should be useful to society (or any pharmaceutical company), and fast. Let's see if you are convinced... We want to find out how are starting at synapses early symptoms of Alzheimer's disease, because if we are able

to do it we will know on what targets to act. We know that in these early processes there are altered molecules which are gaining importance in the recent years, that can give us clues about what is happening in the synapses long before the disease begins to manifest itself. These molecules can be analyzed using non-invasive methods for people. If we demonstrate the relationship between the alteration of one of these molecules and early-stages of the pathology, we will find a powerful therapeutic application with our work that could be useful to fight against the disease since the beginning.

### *4.- How you encourage future scientists to be part of neuroscience research?*

The most important motivation is that biomedicine and neuroscience are the future. As time goes on, our life expectancy is higher. The more we know about our enigmatic brain, more new challenges appear in its complexity. More efforts are needed to find out why our central computer fails and to find a way to fix it. We can live a hundred years, but if you miss the computer that controls everything, what's the use? I would encourage young people with talent, creativity and curiosity to know, to see in brain research the new challenges, and in neuroscience the way to develop their creativity to advance further in the knowledge of our brain. The question made by young people will be how to do it if this country is not committed to R & D? If there is enough motivation, dedication and desire we will succeed to convince people of this country about the importance of doing research. Doing outreach and education about what we do and why we do it, and if we get closer and people understand basic research as a leg of our society as they are health and education, then they will get pressured to change the research working in this country. If we think that many of these young people in ten or fifteen years will be leading research in the country, it is in their hands to fight for it.