Research Project Proposal
Academic year 2021-2022
Máster en Investigación Biomédica

Project Nº 12 ASIGNADO

Title: What experimental models tell us about the neuroinflammatory reaction that occurs in Parkinson´s disease

Department/ Laboratory Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc.
Department of Biochemistry and Genetics (UNAV) and the Neurosciences and Computational Biology Programs (CIMA)

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Summary: Short summary of the project with a maximum extension of 250 words, including the goals and the methodology that will be used.

Our group is interested in understanding how the dopaminergic neuron degeneration triggers a neuroinflammatory reaction and its effect on neuronal viability. Using experimental models of Parkinson´s disease (PD) we reproduce different aspects of the disorder. In the subacute and in the chronic MPTP mice models, it is possible to study the effect of progressive and selective dopaminergic neuronal loss caused by a mitochondrial dysfunction. In the AAV9-α-synuclein (α-syn) mouse model, neurons die by the over-expression of the protein α-syn. Microglia and astrocytes from the midbrain and the striatum of these animals have been purified transcriptome sequencing. Thus, we question which aspects of the neuroinflammatory response generated in both models are common and which ones are α-syn-dependent. Data obtained from the microglia and the astrocytes will be processed independently. RNAseq from each cell type will be compared to determine the number of genes differentially displayed in each region and to generate functional networks. The most relevant results will be validated in the corresponding model.

yes	X	Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?
no		