



Research Project Proposal

Academic year 2019-2020

Project Nº 34 ASIGNADO

Title: *Effects of a high fat diet on adrenomedullin KO mice*

Department/ Laboratory

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Summary

There is a pressing need for a better understanding of the physiopathology of Alzheimer's disease (AD) and the identification of novel molecular targets. Environmental risk factors, such as insulin-resistance, could interact with genetic factors to contribute to AD progression.

Adrenomedullin (AM) associate to the neuron's microtubules, regulating their rigidity and neuronal connections' stability. Our group has been investigating the connection between AM and AD in animal models and patient samples. We have shown that AM brain expression increases with age, and is strikingly elevated in AD patients, suggestive that circulating AM levels may provide a biomarker for AD progression. Using a knockout (KO) mouse model, we have shown that lack of brain AM prevents age-related memory loss, thus linking AM levels with memory.

Following this line of work, it is proposed in the present project to study the cognitive/biochemical effects of a high fat diet on the KO mouse model. Cognitive tests (novel object recognition test, fear conditioning, and Morris water maze) will be performed at different ages and both and male/female mice. Western blotting will be used to check the levels of AM, p-tau, detyrosinated alpha tubulin (Glu-tubulin) and other markers of synaptic plasticity. Neurotransmitter levels will be measured by HPLC.

yes	<input checked="" type="checkbox"/>	Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?
no	<input type="checkbox"/>	