Research Project Proposal
Academic year 2021-2022

Project Nº 55 ASIGNADO

Title: Role of NADPH Oxidase 5 in angiotensin II-induced hypertension

Department of Biochemistry and Genetics (UNAV)

Director 1: Guillermo Zalba
Contact: gzalba@unav.es

Summary:

Oxidative stress is one of the main mechanisms involved in the pathophysiology of vascular diseases, including arterial hypertension. Among others, oxidative stress promotes endothelial dysfunction, and accelerated ageing and remodelling of vasculature. Lately, NADPH oxidases have been demonstrated to be involved in cardiovascular diseases.

NADPH oxidase 5 has emerged as a new player in oxidative stress-mediated endothelial alterations, involved in the pathophysiology of hypertension, diabetes, atherosclerosis, myocardial infarction and stroke. This oxidase seems to mediate its detrimental effects by promoting inflammation. NADPH oxidase 5 has been studied in a lesser extent compared with the other members of the NADPH oxidase family due to its loss in the rodent genome, the main experimental research model. In addition, its potential as a therapeutic target remains unexplored given the lack of specific inhibitors.

In this project, we will study the pathophysiological mechanisms involved in endothelial dysfunction and vascular remodelling in experimental angiotensin II-induced hypertension in the NOX5 endothelial knock-in mouse.

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