Research Project Proposal
Academic year 2021-2022
MÁSTER EN INVESTIGACIÓN BIOMÉDICA

Project Nº 22
Title: Implication of guanylin and uroguanylin in the onset of obesity-associated inflammation: a translational study
Department/ Laboratory Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc. *Metabolic Research Laboratory, Department of Endocrinology & Nutrition, Clínica Universidad de Navarra*
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Summary:

Guanylin (GUCA2A) and uroguanylin (GUCA2B) are hormones secreted by intestinal epithelial cells in the post-prandial state and participate in the control of food intake and food preference through their hypothalamic receptors, the guanylate cyclases C (GUCY2C) and D (GUCY2D). The aim of the present project is to get deeper insight into the beneficial effects of guanylin and uroguanylin on the molecular mechanisms involved in the onset of obesity-associated inflammation, which is a major determinant for the development of insulin resistance and metabolic disease. In this sense, we will evaluate the effect of both hormones on lipid metabolism, inflammation and fibrosis of the adipose tissue of patients and of transgenic knockout mice lacking GUCA2A, GUCA2B or GUCY2C in the context of obesity using different techniques of molecular biology. Moreover, we will evaluate the circulating concentrations of GUCA2A and GUCA2B in patients with obesity and type 2 diabetes before and after bariatric surgery and its potential association with markers of systemic and local inflammation. The comprehension of the regulation of the guanylin system in key organs for the control of glucose and lipid metabolism as well as appetite might be useful to design drugs specifically targeting these hormones aimed at obesity and/or type 2 diabetes control.

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