**MASTER'S DEGREE IN BIOMEDICAL RESEARCH**
**Research Project Proposal**
Academic year 2024-2025

| |
|---|
| **Project Nº 04** |
| **Title:** *Implication of GLP-1 in the onset of pancreas steatosis and inflammation: a translational study in preclinical models and patients with obesity and type 2 diabetes* |
| **Department/ Laboratory** *Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc.* <br> *Metabolic Research Laboratory, Department of Endocrinology & Nutrition, CUN* |
| **Director 1** *Amaia Rodríguez* <br><br> **Contact:** *arodmur@unav.es* <br> **Codirector:** *Gema Frühbeck* <br><br> **Contact:** *gfruhbeck@unav.es* |

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

*Glucagon-like peptide 1 (GLP-1) is a hormone secreted by intestinal epithelial cells that participate in the control of food intake, adiposity and glucose metabolism through central and peripheral mechanisms. The aim of the present project is to get deeper insight into the beneficial effects of GLP-1 on the molecular mechanisms involved in the onset of pancreatic steatosis and inflammation, which is a major determinant for the development of insulin resistance and metabolic disease. In this sense, we will evaluate the effect of GLP-1 on lipid metabolism, inflammation and fibrosis of the pancreas of preclinical models of obesity before and after bariatric surgery using different techniques of molecular biology. The direct effect of GLP-1 in β-cell integrity, steatosis and inflammation will be determined in vitro in RIN-5mF pancreatic β-cell line. Moreover, we will evaluate the circulating concentrations of GLP-1 in patients with obesity and type 2 diabetes before and after bariatric surgery and its potential association with markers of pancreatic function. The comprehension of the regulation of GLP-1 in the pancreas might be useful to understand the underlying molecular mechanisms of current GLP-1 receptor agonist drugs aimed at obesity and/or type 2 diabetes control.*

| | |
|---|---|
| yes | |
| no | ✓ |

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?