



Research Project Proposal

Academic year 2019-2020

Project Nº 42

Title: *Role of adipose tissue miRNAs in obesity and weight loss*

Department/ Laboratory

Department of Food Science and Nutrition and Physiology. Center for Nutrition Research (CIN). Faculty of Pharmacy and Nutrition, University of Navarra.

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Summary

Obesity is a metabolic condition characterized by massive enlargement of adipose tissue. This massive enlargement of adipose tissue leads to the development of a chronic low grade pro-inflammatory state at systemic level which is responsible for obesity associated co-morbidities such as type 2 diabetes, insulin resistance and cardiovascular disease. MicroRNAs are short non-coding RNA molecules that regulate gene transcription. Several studies have addressed an altered miRNA expression pattern to the development of several diseases such inflammatory conditions, cancer and most recently, obesity. We have identified an altered pattern of miRNAs expression in obesity and miRNAs potentially associated to weight loss. In the present study, we aim to characterize miRNAs function in obesity and weight loss as well as to evaluate their potential role as biomarkers and/or therapeutic targets. For that purpose, we will study their target genes and their effects in adipose tissue metabolism. We would over-express and/or inhibit specific miRNA levels in *in vitro* systems such as adipocytes and/or macrophages. Additionally, we will try to correlate miRNA levels to several anthropometric and biochemical parameters and potentially address their role as biomarkers. The identification of novel miRNAs as biomarkers and therapeutic targets would contribute to precision medicine and personalization of obesity treatment.

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