



Research Project Proposal

Academic year 2018-2019

Project Nº 15

Title:

Interplay of adipokines and myokines after bariatric surgery: a translational study

Department/ Laboratory

Metabolic Research Laboratory, Department of Endocrinology & Nutrition, Clínica Universidad de Navarra.

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

Regular physical activity induces profound changes in the adipose tissue, such as the transdifferentiation of white adipocytes into beige adipocytes with the ability to dissipate energy in form of heat, in a process called fat browning. These changes are mediated, in part, via the myokines (factors expressed and secreted by the skeletal muscle with autocrine, paracrine and endocrine actions). Human studies are scarce and whether physical activity per se induces fat browning remains controversial. The aim of the present study is to analyze the circulating concentrations of myokines and adipokines in the context of obesity and study the impact of weight loss through caloric restriction or bariatric surgery in lean and obese patients classified according to their insulin resistance (normoglycemia, impaired glucose tolerance and type 2 diabetes) and physical activity (active and sedentary) as well as in an experimental model of obesity submitted to different surgical techniques (sham surgery, sleeve gastrectomy and Roux-en-Y gastric bypass). The study of the interaction of adipose tissue and skeletal muscle is of great interest, since alterations in adipokines and myokines due to a sedentary lifestyle and/or insulin resistance might contribute to the development of obesity and its associated comorbidities, such as type 2 diabetes and non-alcoholic fatty liver.

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| yes | X |
| no | |

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