



MÁSTER EN INVESTIGACIÓN BIOMÉDICA
Research Project Proposal
Academic year 2026-2027

Project Nº 49

Title: *Functional evaluation of a bacterial postbiotic in obese rodents*

Department/ Laboratory

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Summary

The proposed Master's thesis is part of the PARABIOTICS-2 project, which aims to study the impact of microbial postbiotics, derived from different previously characterized *Lactobacillus* strains, in a mouse model of diet-induced obesity. The project will include different forms of postbiotics: extracellular vesicles, cell fractions, or complete inactivated forms, which have been previously characterized and functionally evaluated in a *C. elegans* model.

For this purpose, C57BL6 mice will be used, which will be induced to develop obesity and prediabetes through a high-fat, high-sugar diet (HFS diet, D12451). The treated groups will be supplemented with different doses of the selected essential postbiotics and fractions (up to a total of 4 treatments) during 10 weeks. The study will include a non-supplemented high-fat (HFS) group (obese control) and an additional group fed standard diet as control non-obese mice.

The study will include: weekly monitoring of weight and feed intake, a body composition test (EchoMRI) at baseline and at the end of the study (week 8), and an intraperitoneal glucose tolerance test (week 9) to determine the degree of insulin resistance. After euthanasia (week 10), gene expression analyses will be performed from different tissues by quantitative PCR, and a complete biochemical analysis will be performed in an automatic analyzer (Pentra C200), together with different ELISAS to quantify the levels of hormones and cytokines. All animal experimentation procedures included in this project will be evaluated and certified by the Ethics Committee for Animal Experimentation of the University of Navarra (UNAV) and the Government of Navarra.

yes	x
no	

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