



MÁSTER EN INVESTIGACIÓN BIOMÉDICA

Research Project Proposal

Academic year 2026-2027

Project Nº 66

Title: *Development of a new proteomics-based method to identify biomarkers of kidney disease progression in patients with salt-losing tubulopathies*

Department/ Laboratory

Biobizkaia Health Research Institute, Endocrinology, metabolism, nutrition and renal diseases research area, Rare Inherited Renal disease group

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Summary

The Inherited Renal Kidney Disease Group at the IIS Biobizkaia (<https://portal.bio-bizkaia.eus/areas-investigacion/bc3.01>) comprises clinical investigators and basic researchers specialized in genetics and membrane biochemistry. Our group provides genetic diagnostics to patients presenting clinical phenotypes compatible with inherited renal diseases. Once a genetic diagnosis has been established, for certain inherited renal tubular diseases, such as salt-losing tubulopathies, it is difficult to predict the progression of the disease. Patients presenting the same genetic variants, even from the same family, often exhibit a wide range of clinical phenotypes, from mild to life-threatening conditions. Therefore, it is necessary to develop new clinical tools to improve the current capacity to anticipate the progression of the disease and provide the most appropriate treatment. In this context, the objective of the project is to develop a new diagnostic tool for patients suffering from Gitelman and Bartter syndrome, as the prototypical salt-losing tubulopathies. To that end, during the course of the project, we will develop the methodology to isolate and store extracellular vesicles from urine samples (urinary exosomes). The isolated urinary exosome samples will be analysed using proteomics. The urine samples will be obtained from our tubulopathy patient cohort. The clinical phenotypes observed in the participating patients will be associated with their respective protein expression profiles by bioinformatics analysis, allowing us to define biomarkers of disease progression. These biomarkers should allow us to identify patients who are susceptible to developing severe clinical phenotypes and assess the response of our patients to the applied treatments.

yes	
no	X

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