

Joint PhD fellowship in Molecular and Functional Biomarkers of Pulmonary Vascular diseases (Job Offer Code *PhD_313*)

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| Institution: | CIC biomaGUNE, San Sebastian-Donostia. Spain Biodonostia, San Sebastián-Donostia. Spain |
| PhD Supervisor: | Jesús Ruiz-Cabello (CIC biomaGUNE) Ian Holt (Biodonostia) |

Title: Increasing Energy to Achieve Healthy Aging and Greater Longevity, Aumentando la Energía para Lograr un Envejecimiento largo y saludable

Project: Diet has a major impact on health and longevity. Most of the food we consume as adults is converted to energy by the parts of the cell called mitochondria. However, energy production by mitochondria declines with age, and there is a clear correlation between mitochondrial activity and aging in diverse organisms. Moreover, mitochondrial dysfunction is increasingly recognized as an important factor in a wide range of human diseases. We have recently demonstrated that normal mitochondria undergo major remodeling in response to changes in nutrient availability. In this project we aim to unify the molecular and whole-body effects of different dietary regimes on mice, in normal and disease states. The aim in the case of the diseases is to determine whether specific nutrient regimes can limit the loss of mitochondrial function and thereby alleviate symptoms or slow disease progression. In the normal animals, we aim to determine whether the same approach can slow the decline in cell and organ function associated with aging and to define the minimal changes to the diet that give the maximal benefit to health and lifespan. By imaging the brain, heart and lung and the accompanying vasculature, together with readouts of mitochondrial function, the project aim to propose how equivalent changes can be assessed in humans, and thus begin to develop an optimal human diet that can be adopted by a significant proportion of the population, and potentially mitigate some major human diseases.

Research group: The research will be conducted in a collaborative project between two leading research institutes. We are seeking an ambitious and motivated student to advance our understanding of own changes at the molecular level impact animal physiology, health and lifespan. The work will be performed at Jesus Ruiz-Cabello group at CIC biomaGUNE (San Sebastian-Donostia) and Ian Holt's group at Biodonostia (San Sebastian-Donostia). Both labs are in the same geographical area, separated by 15 walk distance. The student will be enrolled in a PhD program at the University of the Basque Country as the degree awarding institution.

Requirements:

- The applicant should have a Master degree in biology, biochemistry or related discipline.
- This project requires solid background knowledge in cell biology and biochemistry, work with live animals and interested in biostatistics and modelling of biological systems.
- Fluency in English would be advantageous.

Funding: Co-funded by the Maria de Maeztu Units of Excellence Programme – Grant No. MDM-2017-0720 (CIC biomaGUNE).

Duration: 36 months.

Envisaged Job Starting Date: October or November 2019

Application deadline: 15th September 2019

How To Apply: Please submit your application with a motivation letter stating why you are interested in this position, your CV, and the contact details of two academics who can provide a reference. Please submit your application using [this form](#) indicating the **job offer code *PhD_313***.

Informal requests for additional information can be sent to Prof. Jesús Ruiz Cabello at jruizcabello@cicbiomagune.es or to Prof. Ian Holt at ian.holt@biodonostia.org