



The Vall d'Hebron Research Institute (VHIR) is a public sector institution that promotes and develops the research, innovation and biosanitary teaching of the Vall d'Hebron University Hospital. Through the excellence of our research, we identify and apply new solutions to the health problems of society and we contribute to spread them around the world.



HR EXCELLENCE IN RESEARCH

In April 2015, the **Vall d'Hebron Research Institute (VHIR)** obtained the recognition of the European Commission in **HR Excellence**.

This recognition proves that VHIR endorses the general principles of the European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers (**Charter & Code**).

VHIR embraces Equality and Diversity. As reflected in our values we work toward ensuring inclusion and equal opportunity in recruitment, hiring, training, and management for all staff within the organization, regardless of gender, civil status, family status, sexual orientation, nationality, religion, age, disability or race.

Pre-doctoral Researcher

Cardiovascular Diseases Research Group

VHIR is seeking a junior researcher to apply for a pre-doctoral grant (AGAUR/VHIR) within the Research Group in Cardiovascular Diseases. More information about our group can be found at:

<http://www.vhir.org/portal1/grup-presentacio.asp?s=recerca&contentid=186804&idrefer=186805>

JOB DESCRIPTION

Education and qualifications:

Required:

- Degree in Biology, Biomedicine, Pharmacy, Biomedicine, Veterinary Medicine or a related discipline.
- Master degree.
- High academic marks (degree and master) is a must.
- Good communication skills and fluency in spoken and written English.

Desired:

- Strong sense of responsibility, initiative, self-motivation and social skills as key personal abilities.
- Ability to work independently.
- Previous publications.
- Research stages abroad.
- Accredited for animal handling.

Experience and knowledge:

- Good knowledge in cell biology and physiology, aging oriented studies
- Previous experience in research using imaging techniques (confocal microscopy, TEM, real-time ionic kinetics using fluorescent markers, histopathology, etc).
- Interest and initiative in functional approaches using intact cells and organelles (mitochondria).
- Background in general biochemical techniques (Western blot, PCR, immunolabeling, etc).



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Labour conditions:

- **Position:** Full-time pre-doctoral position (40h/week).
- **Contract length:** 3 years (according to the conditions established by the grant holder (AGAUR/VHIR)).
- **Gross annual salary:** According to the conditions established by the grant holder.
- **Project title:** “Mitochondrial damage secondary to dicarbonyl stress as a driver of senescence: role of senolytics in the protection of the aged heart” (project funded by the Instituto de Salud Carlos III, Ministerio de Ciencia, Innovación y Universidades).

- **Project Summary:**

During aging, the heart displays a lower tolerance to exercise and stress, the severity of which determines the onset of heart failure (HF), a leading cause of death and disability worldwide. Reduced mitochondrial respiratory function is a common mechanism underlying cardiac energy deficiency during both aging and HF. Our group has identified dicarbonyl stress (the accumulation of toxic metabolic intermediates due to a deficient detoxification system) as a prominent cause of mitochondrial dysfunction in the aged heart. Dicarbonyl damage to target proteins cannot be removed therapeutically and tend to accumulate within cells. In the present project, we hypothesize that mitochondrial dysfunction secondary to the accumulation of dicarbonyl-induced damage triggers the development of cardiomyocyte senescence, a pathologic phenotypic transformation characterized by profound metabolic and secretome changes that has deleterious consequences on neighboring cells by paracrine mechanisms. We propose the use of senolytic drugs as an innovative therapy to protect the aging heart against the transition towards HF. The hypothesis will be tested in a wide spectrum of experimental models (from mitochondria in vitro, cultured cells and isolated cardiomyocytes to intact hearts) using independent functional assays and methodologies. The results may identify a previously unrecognized molecular mechanism involved in cardiomyocyte senescence and the transition towards failing phenotype during aging that could be therapeutically targeted with last generation senolytics drugs.

The offered position represents a unique opportunity to work in a truly translational and interdisciplinary project within a highly interactive group. The results will have social and clinical impact, and the work will allow the candidate to acquire expertise in the broadest range of in vivo and in vitro techniques and methodologies, and the possibility to participate in other national and international collaborations.



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What can we offer?

- Incorporation to Vall d'Hebron Research Institute (VHIR), a public sector institution that promotes and develops the biomedical research, innovation and teaching at Vall d'Hebron University Hospital (HUVH), the biggest hospital of Barcelona and the largest of Catalan Institute of Health (ICS).
- A scientific environment of excellence, highly dynamic, where high-end biomedical projects are continuously developed.
- Continuous learning and a wide range of responsibilities within a stimulating work environment.
- Personal training opportunities.
- Flexible working hours.
- 23 days of holidays + 9 personal days.
- Flexible Remuneration Program (including dining checks, health insurance, transportation and more).

How to apply:

Applicants should submit a full Curriculum Vitae, including academic marks, and a cover letter with the reference "PRE-DOC CARDIOLOGY" to the following email addresses: mteresa.fernandez@vhir.org , mruizmeana@gmail.com.