



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

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Predoctoral Researcher

Cardiovascular Diseases Research Group

Vall d'Hebron Research Institute (VHIR) offers a position for a Predoctoral researcher within the Laboratory of the Cardiovascular Diseases Research Group to participate in the project "Inhibition of mitochondrial sodium/calcium exchanger, NCLX, as a therapeutic strategy to reduce myocardial ischemia-reperfusion injury during myocardial infarction", recently funded by Instituto de Salud Carlos III, from Ministerio de Ciencia, Innovación y Universidades (PI23/00260).

JOB DESCRIPTION

Education and qualifications:

Required:

- Degree in Health Sciences (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.
- Accreditation for the use of animals in research.



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Experience and knowledge:

- Good Knowledge on animal physiology, especially in the cardiovascular system, will be positively valued
- Previous experience in molecular biology methods and research.
- Good molecular biology background and experience in molecular biology techniques (Western Blot, PCR, immunofluorescence, etc).
- Critical thinking including capacity to analyse and evaluate information critically and to develop innovative solutions to research problems At least X years of experience working in...

Main responsibilities and duties:

- To develop the doctoral thesis project and collaborate in other projects of the research group.
- To develop their own translational research project to solve an unmet clinical issue in cardiology. This includes design, perform and interpret the results obtained in both in vivo and in vitro experiments, including the use of animal models, data measurement and statistical analyses.
- To join the research team and collaborate and support other research members in the development of their projects.
- To generate a fruitful discussion within the group.
- Present and defend the results obtained in national and international scientific meetings.
- Participation in group meetings and other activities

Labour conditions:

- Position: Full-time pre-doctoral position (40h/week) after application to a research grant (including PFIS, AGAUR, etc).
- Starting: According to the conditions established by the grant holder.
- Duration: 4 years.
- Gross annual salary: According to the conditions established by the grant holder. For PFIS (Instituto de Salud Carlos III, Acción Estratégica en Salud 2024), this would be 20.600 € the first two years, 21.800 € the third year and 26.900 € the fourth year.



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- Project title: Inhibition of mitochondrial sodium/calcium exchanger, NCLX, as a therapeutic strategy to reduce myocardial ischemia-reperfusion injury during myocardial infarction (project funded by Instituto de Salud Carlos III, Ministerio de Ciencia, Innovación y Universidades).
- Project Summary:
 - **Background:** A key role for the mitochondrial sodium/calcium exchanger, NCLX, in reactive oxygen species (ROS) production during ischemia has been recently unveiled in endothelial and neuronal cells. Preliminary results show that NCLX inhibition can also abolish ROS production during reperfusion and reduces infarction in a mouse model of stroke. As ischemia-reperfusion (IR) injury during acute myocardial infarction is driven by ROS production and oxidative damage, we want to address whether the same mechanism operates in cardiomyocytes, and the therapeutic potential of NCLX inhibition.
 - **Objectives:** (1) To characterize the role of NCLX in ROS production during IR in cardiomyocytes; (2) to evaluate if the application of novel NCLX inhibitors would constitute a promising therapeutic approach to reduce IR injury.
 - **Methods:** We will perform a detailed molecular study (superoxide production, cell viability, mitochondrial pH and oxygen consumption) of the effects of mitochondrial sodium-calcium exchange during IR, to understand the molecular pathways leading to ROS production. We will use isolated hearts, in vivo rodent and pig models of myocardial infarction, and cardiomyocytes isolated from human atrial samples to test the usefulness of novel NCLX inhibitors to attenuate IR injury. We expect that inhibition of NCLX may reduce myocardial infarct size by attenuating mitochondrial ROS production.

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.
- Individual training opportunities.



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- Flexible working hours.
- 23 days of holidays + 9 personal days.
- Flexible Remuneration Program (including dining checks, health insurance, transportation and more)
- Corporate Benefits: platform through which you can obtain significant discounts on travel, culture, technology, gastronomy, sports... among many others.
- Healthy Offering: choose from a variety of wellbeing focused activities to be the healthiest you.

How to apply:

Applicants should submit a full Curriculum Vitae including academic marks, and a cover letter with the reference "ARS-PRE-DOC CARDIOLOGY" to the following email addresses: antonio.rodriquez.sinovas@vhir.org and seleccio@vhir.org

Deadline to apply: 29/02/2024

The Fundació Hospital Universitari Vall d'Hebron-Institut de Recerca - "VHIR"-, with NIF G-60594009, address in Barcelona -08035- Passeig Vall d'Hebron 119-129, Edifici Mediterrània, 2a planta and telephone (34) 934 89 30 00 is the data controller for the processing of your personal data. The data will be processed exclusively for the purpose of managing your participation in the selection process, as well as, if necessary, managing your participation in other selection processes.

Unless you give your informed consent to keep your personal data for future selection processes, in the event that the selection process is completed and you are not the person selected, your personal data will be deleted and blocked in order to be able to respond to any possible liabilities that may arise.

The legal basis of the processing is the execution of a contract to which the data subject is party or in order to take steps at the request of the data subject prior to entering into a contract.

The recipient of the data will be the VHIR's Professional Development personnel and no transfer of personal data is foreseen, except for the fulfilment of legal obligations applicable to the data controller. International data transfers are not foreseen. No automated decisions will be taken, including profiling. In general, personal data will not be communicated to third parties, except for legal obligations in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (GDPR) to persons who are entitled to request them. You have the rights of access, rectification, deletion, portability, limitation and opposition that can be exercised at any time through the email dpd@ticsalutsocial.cat or lopdp@vhir.org. In compliance with Regulation (EU)



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2016/679, the VHIR has appointed a data protection officer, whose contact details are dpd@ticsalutsocial.cat. You can also lodge a complaint with the competent Data Protection Authority by contacting www.apdcat.cat or www.aepd.es.



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