



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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Researcher – Biosensor Development for malaria quantitative diagnosis

Diagnostic Nanotools Research Group

Diagnostic Nanotools is a Research Group based at Vall d'Hebron Hospital (Barcelona, Spain). Our aim is to develop and validate biosensors, fast assays and novel detection strategies with diagnostic purposes (<https://vhir.vallhebron.com/es/investigacion/diagnostic-nanotools-dina>, ; https://www.researchgate.net/profile/Eva_Baldrich).

WE ARE SEARCHING for a PostDoctoral Researcher to join a EuroNanoMed international project with partners in Spain, France, Latvia and Turkey. The candidate will participate in the development of paper-based electrochemical biosensors for malaria point-of-care diagnosis. Project financed by Instituto de Salud Carlos III and Recovery and Resilience Mechanism (RRM), with file number AC21_2/00021.

JOB DESCRIPTION

Education and qualifications:

- Degree in Nanotechnology, Biotechnology, Chemistry, Electrochemistry, Biomedical Engineering or similar disciplines.
- PhD finished within the last 5 years.
- Strong publication record as the first author.
- English competence (written and spoken). Spanish proficiency will be a plus.
- Technically skilled, organized, creative, with high autonomy level and multidisciplinary profile.
- Readiness to apply to postdoctoral fellowships in future.
- International stages will be positively considered.



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Experience and knowledge:

Candidates with proven **experience in at least two of the following topics** will be given priority in the selection process:

- Bioassays and biosensors using magnetic micro/nano-beads.
- Electrochemical biosensors (ideally, immunosensors and/or aptasensors).
- Nanoparticle surface bioengineering.
- Use of nanoparticles/nanomaterials as non-enzymatic tags.
- Paper-based diagnostic devices and paper microfluidics.
- Production of printed electrodes.

Main responsibilities and duties:

Our Research Group has produced a new type of fast magnetic bead assays (<https://pubs.acs.org/doi/10.1021/acs.analchem.1c03242?goto=supporting-info>) and a low-cost technology for malaria quantitative point-of-care diagnosis (*Biosens Bioelectron*, 2020, 150:111925, <https://doi.org/10.1016/j.bios.2019.111925>; *Biosens Bioelectron*, 2022, 215:114513, <https://doi.org/10.1016/j.bios.2022.114513>; *Biosens Bioelectron*, 2024, 246:115875, <https://doi.org/10.1016/j.bios.2023.115875>). The candidate will participate in the production of an upgraded analytical device and its validation in a clinical scenario. Depending on the profile and previous experience, the candidate may participate in the following tasks, being responsible of part of them:

- Optimization of single-step bioassays using magnetic beads (magneto-assays) for detection of malaria biomarkers.
- Implementation of customized synthetic aptamer receptors.
- Implementation of customized non-enzymatic nanotags and optimization of their electrochemical detection.
- Design and production of paper devices for sample pre-treatment and magneto-assay automation.
- Design and production of low-cost paper-based printed electrodes.
- Technology validation in a clinical scenario locally and in an African setting.



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Labour conditions:

- Full-time position: 40h/week.
- Starting date: immediate.
- Gross annual salary: 24.785,40 euros /// (Remuneration will depend on experience and skills. Salary ranges are consistent with our Collective Agreement pay scale)
- Contract: temporary (until the end of the project by 31st Dec 2024).

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.
- 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.



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How to apply:

Applicants should submit a full Curriculum Vitae and a motivation letter with the reference "Research Biosensor" to the following email addresses: eva.baldrich@vhir.org and seleccio@vhir.org

Deadline to apply: 28-04-2024

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 lopd@vhir.org. In compliance with Regulation (EU) 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.