

PhD Position (FPI) – “Modular CRISPR/Cas Platform for Portable Electrochemical Biosensing in Clinical Diagnostics, Animal Health, and Environmental Monitoring (CRISPER)”

The project PID2025-167922OB-I00 (funded by the AEI, the Spanish State Research Agency) at the [Institut de Biotecnologia i de Biomedicina \(IBB\)](#) of the Universitat Autònoma de Barcelona (UAB) invites applications for a PhD candidate to join the project **“Modular CRISPR/Cas Platform for Portable Electrochemical Biosensing in Clinical Diagnostics, Animal Health, and Environmental Monitoring (CRISPER)”**, led by **Maria Isabel Pividori and Maria Mercè Martí**, at the [Biosensing and Bioanalysis Research Group](#).

PROJECT PID2025-167922OB-I00

The CRISPER project aims to develop a modular, portable molecular diagnostics platform that integrates CRISPR/Cas-based recognition with electrochemical biosensors. The platform will combine sample preparation strategies, nucleic acid amplification, and CRISPR/Cas9, Cas12a, and Cas13a systems for the specific detection of DNA and RNA, with electrochemical transduction using portable devices.

The project adopts a One Health approach and aims to demonstrate the versatility of the platform across different application areas, including clinical diagnostics, animal health, food safety, and environmental monitoring. The research integrates bioanalytical chemistry, electrochemistry, molecular biology, biotechnology, and biosensing device development.

JOB DESCRIPTION

The selected candidate will join the PID2025-167922OB-I00 research team. Working closely with the principal investigators and the rest of the research team, he/she will develop a doctoral thesis aligned with the project's objectives. He/she will participate in research activities, the analysis and interpretation of results, the preparation of scientific publications, and the presentation of findings at conferences, seminars, and other scientific dissemination activities.

The doctoral research will focus on developing molecular diagnostic systems based on CRISPR/Cas technology integrated with portable electrochemical biosensors. The activities will include molecular biology techniques; nucleic acid manipulation and amplification; CRISPR/Cas systems; sample preparation and processing; surface and/or magnetic particle functionalisation; electrochemical biosensor development; and the analysis and interpretation of experimental data.

CANDIDATE PROFILE

Applicants should hold a university degree in Chemistry, Biochemistry, Biotechnology, Biomedicine, Nanoscience and Nanotechnology, or a related discipline, and meet the academic requirements for admission to a doctoral program.

Training and/or research experience in bioanalytical chemistry, molecular biology, biotechnology, biosensors, and/or the development of analytical methods and molecular diagnostics will be considered an asset.

Particular consideration will be given to training and/or experience in the following areas:

- Molecular biology techniques and DNA and RNA manipulation.
- Nucleic acid amplification techniques, including PCR and/or isothermal amplification.
- Cell culture and CRISPR/Cas systems.
- Electrochemical techniques and biosensors.
- Functionalization of surfaces, nanoparticles, and/or magnetic particles.
- Preparation and processing of biological, food, and/or environmental samples.

The ability to plan and carry out experimental work, analyze and interpret results, process experimental data, consult and critically evaluate scientific literature, and work in a multidisciplinary environment will also be valued.

A good command of English will be considered an asset, particularly for understanding scientific literature and communicating scientific findings both orally and in writing.

CONDITIONS AND APPLICATION

The PhD contract will have a maximum duration of 48 months.

The terms and conditions, as well as the application procedure, are detailed in the [call for applications](#).

Applications should be submitted via the following [link](#). **DEADLINE NOVEMBER 9th**.

For further information, please contact promocio.ibb@uab.cat.