

PhD position in radiochemistry:

We are seeking a highly motivated PhD candidate with a strong background in organic chemistry to join our multidisciplinary research program dedicated to the development of novel PET ligands for imaging voltage-gated ion channels. The successful candidate will develop their PhD project under the supervision of Dr Eral Ismalaj at the Molecular and Functional Imaging Unit at CICbiomaGUNE.

The successful candidate is expected to design, synthesize, and characterize small-molecule ligands, as well as develop radiolabeling routes with short-lived radioisotopes, including carbon-11 and/or fluorine-18, for positron emission tomography (PET) imaging. Beyond applying established methods, the candidate is expected to develop novel synthetic routes, explore new reactivity concepts, and implement innovative strategies in ligand design.

Our research program covers:

- The development of imaging agents for fluorescence and PET
- Novel methodologies in organofluorine chemistry
- Greener and more sustainable synthetic routes for radiopharmaceutical development

The specific focus of this PhD project is the development of high-affinity small molecules for targeting voltage-gated ion channels. Building on our previous work on fluorescent ligands for L-type calcium channels, our current focus is on the development of PET ligands for in vivo imaging of L-type calcium channel isoforms. The novel ligands will be evaluated in-house in tissue, cell and in vivo models to assess selectivity, binding properties and in vivo pharmacokinetics.

Selected Publications:

1. C. Borgarelli, Y. Klingl, A. Escamilla-Ayala, C. Scarponi, R. M. L. La Rovere, K. Stoklund Dittlau, G. Bultynck, M. Sampaolesi, M. Schoenberger, S. Munck, L Van Den Bosch*, W. M. De Borggraeve*, E. Ismalaj* "Novel far-red 1,4-dihydropyridines for L-type calcium channels" *J Med Chem* **2024**, 67, 20, 18038-18052.
2. A. Zogu, K. Ullah, S. Spanopoulos, E. Ismalaj*, W. M. De Borggraeve*, J. Demaerel, "Perfluorooxosulfate salts as SOF₄-gas-free precursors to multidimensional SuFEx electrophiles" *Angew Chem Int Ed*, **2024**, 63, e202403797.
3. R. Kordnezhadian, A. Zogu, C. Borgarelli, R. Van Lommel, J. Demaerel, W. M. De Borggraeve*, E. Ismalaj* "De-risking S-F bond formation: A gas cylinder-free strategy to access S(IV) and S(VI) fluorinated compounds" *Chem Eur J*, **2023**, 29, 39, e202300361.
4. C. Scarponi, F. P. COssio, J. Ruiz-Cabello, E. Ismalaj*, "Simplifying the access to FLYRCADOTM: A shorter route for preparing [¹⁸F]flurpiridaz precursors under mild conditions" *ChemRxiv*, **2025**, DOI: 10.26434/chemrxiv-2025-0dn0b.

Required Education Level:

- MSc (or equivalent) degree in Chemistry or a closely related field, such as Pharmaceutical Sciences, with a strong theoretical foundation in organic chemistry and medicinal chemistry.

Required Skills/Qualifications:

- Strong expertise in multistep organic synthesis, purification techniques (chromatography, crystallisation) and advanced characterisation methods (NMR, LC-MS and complementary state-of-the-art techniques employed in elucidating the structure of small molecules).
- Interest in interdisciplinary research at the interface of organic synthesis, chemical biology and molecular imaging.
- Ability to plan and perform experiments autonomously, from reaction design to product characterisation. Eager to take initiative in troubleshooting and optimisation of synthetic methodologies
- Excellent communication skills in English, both spoken and written, are required.

Preferred:

- Previous expertise in covalent radiolabeling with short-lived radioisotopes.
- Possess a foundational understanding of computational chemistry with exposure to in silico ligand design and molecular docking or willingness to develop expertise in this area.

What we offer:

- A fully funded position (up to four years) with the contract renewed yearly. According to the contract regulation, the candidate must be enrolled in a doctoral programme on the date of joining the centre.
- Access to cutting-edge research facilities for organic synthesis, radiochemistry, and molecular imaging.
- Training and mentorship within a dynamic interdisciplinary team.
- Opportunities to participate in conferences and training events, fostering professional growth and networking with peers.

Candidates should submit their application containing the following documents:

- Curriculum Vitae
- Motivation Letter stating their interest in the position (max 1 page).
- Brief description of the Master's These (max 1 page).
- Academic transcripts (BSc and or MSc).
- Contact Details of at least 2 references.

Informal Inquiries:

Informal requests for additional information can be sent to *Ermal Ismalaj* at eismalaj@cicbiomagune.es. Applications sent directly to the emails listed above **will be NOT be accepted.**

How To Apply:

Only applications through the following link are accepted <https://www.cicbiomagune.es/job-offer-detail?id=43030>

Equal opportunities Policy:

CIC biomaGUNE is proud to be an equal opportunity employer and applicants will receive consideration for employment without regard to: age, disability, gender, national origin, race, religion, sexual orientation, gender identity, or any other classification protected by European, national, or local law.

Open Transparent and Merit Based Recruitment Policy:

[You can check here CIC biomaGUNE OTM-R Policy.](#)