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COMTE



Institut de Chimie Moléculaire de l'Université de Bourgogne
UMR 6302 CNRS, Université de Bourgogne
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Research engineer position (organic chemistry) - ICMUB - Dijon

Our research group at ICMUB lab. (UMR CNRS 6302, CNRS, Dijon, <http://www.icmub.com/>), recognized as one of the leading French academic players in the field of "Chemistry for Molecular Imaging", is offering a one-year research engineer position in organic synthesis (renewable).

Preferred starting date: November 2024

Scientific context:

Metastatic Colorectal Cancer (mCRC) and metastatic Gastric Cancer (mGC) are among the most aggressive cancers. Despite ongoing efforts in therapeutic research, patients still face a dim prognosis (5 years survival < 10%). Targeted radionuclide therapy (TRT), consisting of a radionuclide coupled to a vector that binds to a desired biological target with high specificity, could offer a promising approach to treat advanced digestive cancers. In the "COMETE" project (moleCular radiOtherapy for METastatic Colorectal and gastric canCers), we propose to develop theranostic biomolecules allowing:

- i) PET imaging of mCRC or mGC using positron emitting radioisotopes (^{64}Cu , ^{68}Ga) for the diagnosis, stratification and monitoring of patients response
- ii) Targeted radionuclide therapy with β^- (^{177}Lu) or α (^{225}Ac) emitters.

Principal duties/responsibilities:

The engineer will be responsible for synthesizing the various probes used in the "COMETE" program as well as the preparation of the bioconjugates.

More specifically, his/her tasks will include:

- development of synthetic routes to obtain various bioconjugatable probe (different chelators, different linkers...)
- development of bioconjugation protocols using the former probes
- optimization of purification and characterization methods for both organic molecules and bioconjugates
- implementation of quality control process
- validation of the different production steps to facilitate clinical transfer
- redaction of experimental protocols, technical reports as well as regular progress reports
- attending meetings with the different partners and redacting minutes

Research environment:

This ambitious program, funded by the European Regional Development Fund (FEDER), is supported by our lab, the Centre de Lutte contre le cancer Georges François Leclerc (CGFL), and Oncodesign Precision Medicine, a biopharmaceutical company specializing in precision medicine to treat resistant and metastatic cancers. This multidisciplinary consortium will provide a highly collaborative work environment.

The candidate will be recruited by the Université de Bourgogne and his/her research will be conducted at the Institut de Chimie Moléculaire de l'Université de Bourgogne, within the bioconjugation team. The lab is fully equipped for organic synthesis as well as the synthesis, purification and characterization of bioconjugates (FPLC, UV5 Nano spectrophotometer, HPLC). Thanks to the analytical platform PACSMUB, the candidate will have access to various NMR spectrometers (400, 500, 600 MHz), mass spectrometers like MicroFlex LRF (MALDI-ToF) and Orbitrap Exploris 240 (high resolution LC-MS).

Candidate profile:

Minimum Qualifications: Ph.D. in organic chemistry with a strong background in organic synthesis and chromatographic techniques (semi-preparative HPLC, HPLC-MS, ...). Theoretical or practical knowledge in bioconjugation and protein purification methods is a valuable asset but not mandatory. We are looking for an independent and motivated individual able to cooperate in a highly dynamic environment as strong interactions with chemists, radiochemists, biologists, radiobiologist and radiopharmacists will occur on a daily basis. Additionally, the candidate should have a proactive attitude towards problem solving, good written and oral communication skills and be willing to prepare manuscripts.

Preferred Qualifications: Training or knowledge in bioconjugation, radiochemistry, nuclear imaging and/or targeted radionuclide therapy would be a valuable asset.

Contacts:

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Application documents: detailed CV (+ 2-3 references), a brief summary of research works and a detailed covering letter.