Postdoctoral Position M/W

Project title: Optimization of targeted internal radiotherapy against VCAM-1 for brain metastases using predictive dosimetry
Acronym: Optadom

Research units: CERMN, Caen and ISTCT UMR 6030 Caen, Normandy, FRANCE
Project duration: January 2026 – December 2028
Scientific supervisors: Prof. Thomas Cailly, Dr. Samuel Valable, and Dr. Aurélien Corroyer-Dulmont
Applications must include a detailed CV, at least two references (with contact details), and a one-page cover letter. Applications should be sent by email to thomas.cailly@unicaen.fr, samuel.valable@cnrs.fr, and a.corroyer-dulmont@baclesse.unicancer.fr with the subject line "Postdoctoral Application OPTADOM".

The deadline for applications is November 1st, 2025.
Shortlisted candidates will be contacted mid of November.

Context and Objectives

The aim of this multidisciplinary research program is to investigate the binding of anti–VCAM-1 antibodies through biodistribution studies of 64Cu-anti-VCAM-1 in preclinical models, both whole-body (PET imaging) and brain (autoradiography). The measured biodistribution will then be converted into predictive dose distribution, tumor control probability (TCP, in vitro studies), and normal tissue complication probability (NTCP). This first step will enable the determination of the optimal injected activity to maximize the TCP/NTCP ratio. Finally, an in vivo study using 212Pb-anti-VCAM-1 will assess treatment efficacy and toxicity at 50%, 100%, and 150% of the optimal dose. This preclinical study involves collaboration between six multidisciplinary teams with expertise in physics, dosimetry, radiochemistry, preclinical imaging, brain metastasis models, radiobiology, molecular radiotherapy, pharmacology, and pharmacokinetics.
Expected outcomes: This project will provide essential data on VCAM-1–based alpha therapy for brain metastases, paving the way for first-in-human clinical trials.

Position description: **The recruited postdoctoral researcher will be responsible for radiolabeling antibodies and conducting in vitro/vivo experiments.**

Profile requirements:
- A PhD in oncology/neuro-oncology.
- Strong motivation, autonomy, curiosity, and commitment to developing a project at the interface of chemistry, biology, and physics.
- Ability to work in a multidisciplinary team with fluency in English.
- Experience in cell culture and animal experimentation applied to oncology.
- Experience in radiolabeling of proteins would be an asset, as would expertise in handling and characterizing antibodies and antibody-derived bioconjugates, including MALDI analysis.
- A diploma authorizing animal experimentation is required.

Expected skills: cell culture, animal experimentation, in vivo imaging (MRI and PET), histology, image analysis.

Working Conditions, Constraints, and Risks

The recruited researcher will carry out their work within the CERMN and ISTCT units.

- CERMN (Centre d'Études et de Recherche sur le Médicament en Normandie): a laboratory specialized in drug design, with research areas in oncology, neuroscience, and infectious diseases, as well as chemical tools for diagnostics and imaging.
- ISTCT (Imagerie et Stratégies Thérapeutiques pour les Cancers et Tissus Cérébraux): specialized in understanding and treating hypoxic tumors (brain and lung) by targeting tumors and their microenvironment (www.istct.cyceron.fr).

The research units will provide the necessary human and material resources, as well as access to equipment (cell and molecular biology labs, physiology facilities), the CYCERON platform (MRI/PET, radiochemistry lab), the

CURB/ONCOModels, and the PLATON and DRuiD platforms.
Some experiments may require working irregular hours, including evenings and weekends.

Additional Information

Contract: 18 months, renewable for another 18 months.
Salary: To be defined.