Postdoctoral position
Proudhon lab, IRSET, Rennes, France

Circulating epimarkers for non-invasive precision oncology

An ERC-funded 3-year postdoctoral position is available in the team of Charlotte Proudhon at the Institut de Recherche en Santé, Environnement et Travail (IRSET, U1085 INSERM).

Research project: The project is focused on the identification and optimization of non-invasive epigenetic tumor markers to improve the detection of cancer. Circulating tumor biomarkers are revolutionizing cancer care. They represent an alternative to tissue biopsies for cancer prognosis and molecular profiling, and a promising tool for real-time monitoring of treatment efficacy. However, despite remarkable progress, several technological obstacles still limit liquid biopsy widespread application. Indeed, detecting small fractions of tumor material released when the tumor burden is reduced remains a challenge. We are actively involved in the development of innovative approaches for improved detection and better characterization of circulating analytes, including plasma DNA and cargoes associated to extracellular vesicles (EVs) – see here our publications.

We have recently demonstrated that cancer-associated hypomethylation of certain retrotransposons is detectable from plasma DNA for multiple forms of cancer (manuscript under revision). We are now investigating further this deregulation and how it translates into other observable signatures specific to cancer in the bloodstream.

IRSET is a large international and multi-disciplinary research center on environmental and occupational health located within Rennes, in Brittany. https://www.irset.org/en

The ideal candidate should hold a PhD in molecular or cellular biology with a background in cancer (epi)genomics, extracellular vesicle biology and/or liquid biopsies. This project will involve hands-on experience with molecular biology tools and a strong knowledge in next generation sequencing technologies. Experience in computational genomics will be an important asset. A good level of English is also required.

Applicants should send their CV, a cover letter and the contact of two references to charlotte.proudhon@inserm.fr