2-Year post-doc position in Normandy, France

Imaging tertiary lymphoid structures by immuno-MRI

Tertiary lymphoid structures (TLS) are ectopic lymphoid tissues that drive immune responses at sites of chronic inflammation. They are of widespread interest in biology and medicine since their presence dramatically influences disease course in autoimmune disorders, infection, and cancer. However, due to their small size and their development in chronically altered tissues, TLS cannot be detected by imaging. The current project aims to develop new methods to map TLS in a non-invasive manner. To this aim, the candidate will use a new formulation of injectable superparamagnetic particles that has been developed in the laboratory. A set of innovations in contrast agent design and material chemistry allows these new particles to dramatically increase targeting efficiency compared to existing methods. Therefore, intravenously injected superparamagnetic particles can accumulate in TLS in large numbers, thereby allowing their non-invasive detection by clinically available imaging modalities (magnetic resonance imaging) and emerging technologies (magnetic particle imaging).

This ERC-funded project (ERC-CoG MAGMA - Dr. Maxime Gauberti) involves *in vivo* experiments in rodent models of autoimmune diseases and cancer. The candidate will participate in contrast agent synthesis, experimental surgery, MRI (Bruker) and MPI/CT (Magnetic Insight) acquisitions, image analysis, and histology. To conduct these experiments, the candidate will work in close collaboration with an experienced team of biologists, biochemists and radiologists.

SKILLS / EXPERTISE

- Experience in conducting animal experiments, particularly with rodents, is expected.
- Knowledge in *in vivo* MRI acquisition (Bruker, Paravision) is appreciated.
- Skills in chemistry and contrast agent synthesis are not required.

WORK ENVIRONMENT

The candidate will work in a renowned laboratory in molecular MRI, focusing on experimental validation of an innovative contrast agent. The laboratory provides a supportive environment for cutting-edge research and international collaboration. Nestled in northwestern France, Caen in Normandy provides a dynamic yet affordable setting for high-impact research. Its strategic location—close to Paris by train and at 15 minutes from the sea—offers excellent connectivity without the high costs often associated with larger cities. Renowned for its strong academic culture and world-class research infrastructure (including specialized imaging platforms), Caen has fostered a vibrant ecosystem of innovation.

DURATION & LOCATION

24 months, Caen, Normandy, France
Our laboratory INSERM U1237 PhIND (https://www.phind.fr/index.php/en/) is hosted within the Blood and Brain Institute (https://www.bb-c.fr/) in the Cyceron Imaging platform (https://www.cyceron.fr/index.php/fr/)

CONTACT

Please send your CV and publication list (if any) to gauberti@cyceron.fr (Maxime Gauberti, MD, PhD) and smartinez@cyceron.fr (Sara Martinez de Lizarrondo, PhD).