Job description: post-doctoral fellowship in MRI

Background

Nonalcoholic steatohepatitis (NASH) represents an increasing health burden and is quickly becoming the main cause of liver cancer. Magnetic resonance imaging (MRI) proposes several attractive markers for the diagnosis of NASH. MR elastography, because of its sensitivity to tissue visco-elasticity, is a valuable tool for assessing fibrosis and inflammation severity, while multiecho MRI, through the computation of the fat fraction in liver tissue, enables precise assessment of steatosis. More recently, temporal diffusion spectroscopy (TDS) with oscillating gradient diffusion imaging has been proposed to assess liver diseases at specific spatial scales. The most advanced forms of TDS provides estimates of the hepatocyte size which is altered in NASH.

Project

The overall objective will be to develop and validate novel MR biomarkers of NASH. This goal will be pursued through preclinical, small animal and clinical imaging studies. Quantitative MRI methods that we develop and validate for NASH diagnosis in this research project include 3D multifrequency MR elastography, TDS, fat imaging and relaxometry.

Expected skills

The applicant (PhD or MD-PhD) should have demonstrable skills in any of the following areas: MRI, physics-based image analysis or biomedical imaging. Knowledge in radiology and hepatology is strongly encouraged. The applicant must be well organized, able to interact with people having many different levels and areas of expertise and be proficient in scientific experiment design, statistical analysis and scientific writing. The position involves French and English languages.

Environment

The successful applicant will work as part of the "agence national de la recherche" ANR-funded projects "QuidNASH" and "STEDI-NASH" under the supervision of Pr. Bernard Van Beers (MD, PhD; PU-PH) and Dr. Philippe Garteiser (PhD; CR Inserm). Work will be conducted in the "laboratoire des biomarqueurs en imagerie" (LBI, laboratory of imaging biomarkers), a research team led by Pr. Van Beers within the center for research on inflammation (Inserm UMR 1149, université de Paris). Work will be carried out in 75018 Paris (faculté de médecine Bichat, université de Paris) and 92110 Clichy (Beaujon university hospital). The successful applicant will work within a team of physicists and radiologists (doctoral students, post-docs, research engineers and senior staff). The hosting team has numerous national and international research collaborations and offers a stimulating and well-connected environment focused on clinical translation. State-of-the art scientific infrastructure is provided at the center for research on inflammation and at the associated FRIM imaging platform (Inserm UMS 34), including two 7T Bruker systems, a clinical 3T MRI scanner, small animal and clinical MRI-PET scanners, small animal facilities and molecular biology devices. The FRIM imaging platform is part of the national networks France Life Imaging and Ibisa.

Contract

The position is funded by the ANR. It will be based on a renewable administrative 1-year term. Salary will be standard according to French national institutes. The applicant will be employed by Inserm.

Contact information

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