2-year post-doctoral position in pre-clinical ultrasound and optical imaging for evaluation of nanoparticles targeting rheumatoid arthritis

The small animal imaging facility of Institut Cochin (INSERM U1016) in Paris is looking for a post-doctoral candidate for a 2-year position in pre-clinical ultrasound and optical imaging for evaluation of nanoparticles targeting rheumatoid arthritis.

The small animal imaging facility of Institut Cochin performs studies in ultrasound and bioluminescence imaging for both academic teams and private companies. It is specialized in *in vivo* evaluation and characterization of pathologies and runs two high resolution scanners (VEVO 2100, VEV0770, Visualsonics) and two ultrafast ultrasound scanners (Aixplorer, Supersonic Imagine and Vantage, Verasonics). Our team has also strong experience in the development and evaluation of mice models of rheumatic diseases and their imaging using various modalities (ultrasound, bioluminescence, MRI, CT, ...).

Our team in involved in the H2020 European Project Folsmart (http://cordis.europa.eu/project/rcn/200186_en.html) dedicated to the treatment of rheumatoid arthritis using a new strategy targeting folate receptors with a liposome-based nanovector. We are in charge of the pre-clinical evaluation of this nanovector and the investigation of its mechanism of action in mice. We will use *in vivo* imaging techniques to address these questions, including high resolution ultrasound, opto-acoustics (also called photoacoustics), *in vivo* bi-photon imaging and ultra-fast ultrasound imaging.

We offer a 2-year post-doctoral position to implement these tools in order to characterize and provide early assessment of the therapy in preclinical models of rheumatoid arthritis.

Applicant must have a strong experience in ultrasound image formation and ideally in ultra-fast sequence computing. Previous experience on small animal experimentation is not mandatory but would be appreciated.

Date of Employment should be between 17th October and the end of December 2016. Net salaries, social security included, will in accordance with the French state public service salary scale (gross annual salary 31 000€/year).

Applicants should submit a letter detailing her/his motivation and skills to take over the project with a curriculum vitae including a full list of publications and references by 30th September 2016 to gilles.renault@inserm.fr.

References:

Enhancing Methotrexate Tolerance with Folate Tagged Liposomes in Arthritic Mice. Nogueira E, Lager F, Le Roux D, Nogueira P, Freitas J, Charvet C, Renault G, Loureiro A, Almeida CR, Ohradanova-Repic A, Machacek C, Bernardes GJ, Moreira A, Stockinger H, Burnet M, Carmo AM, Gomes AC, Preto A, Bismuth G, Cavaco-Paulo A. *J Biomed Nanotechnol. 2015 Dec;11(12):2243-52*.

Ultrasound and Doppler micro-imaging in a model of rheumatoid arthritis in mice. Clavel G, Marchiol-Fournigault C, Renault G, Boissier MC, Fradelizi D, Bessis N. *Ann Rheum Dis. 2008 Dec;67(12):1765-72.*

Single-side access, isotropic resolution, and multispectral three-dimensional photoacoustic imaging with rotate-translate scanning of ultrasonic detector array. Gateau, J., Gesnik, M., Chassot, J.-M., & Bossy, E. (2015). *Journal of Biomedical Optics*, 20(5), 056004.