



POSTDOCTORAL FELLOWSHIP

Magnetic Resonance Imaging and magnetic manipulation of cell-derived microparticles

Possible starting date: September 2009

A POSTDOCTORAL POSITION at the CNRS and University Paris-Diderot (Laboratoire Matière et Systèmes Complexes, Paris, FRANCE) is available for a multidisciplinary and collaborative research project.

Microparticles are defined as small vesicles (less than 1 μm) shed from plasma membranes of diverse cell types in response to activation, injury and/or apoptosis. High levels of circulating microparticles of different origins have been considered as markers of several diseases, including cardiovascular pathologies. Originally described as inert cell debris, recent studies implicate microparticles in many processes as propagation of inflammation, thrombosis, modulation of angiogenesis or tumor metastasis. Microparticles may account for long-range intercellular communication, playing the role of efficient vectors from one cell to another, owing to molecules present at their surface or in their cytoplasm.

Magnetic nanoparticles are contrast agent for Magnetic Resonance Imaging, allowing to monitor the migration of magnetically labeled cells. They also can be manipulated at a distance when associated with cells or micrometric vesicles. We propose here to associate magnetic nanoparticles to cellular microparticles to provide better insight in the *in vivo* distribution and fate of microparticles. Magnetic manipulation will be also used to study interactions of microparticles with targeted cells *in vitro*.

Post-doc position will take place in a biophysics group of laboratory Matière et Systèmes Complexes (UMR 7057, Group of Florence Gazeau and Claire Wilhelm) in tight collaboration with the biology group of Chantal Boulanger and with the medical imaging group of Olivier Clément at the Centre de Recherche Cardiovasculaire (INSERM U970) of the European Georges Pompidou Hospital, where an imaging facility (4.7T MRI) is available.

Candidates should have a Ph.D. in biophysics, medical imaging, cell biology or related fields. The candidate is expected to work independently and conduct research in a highly interdisciplinary environment of physicist, chemist, biologist and radiologist. Training and experience in MRI and small animal manipulations are preferred. Interested applicants should email CV along with a summary of research experience and contact information for references to Dr. Florence Gazeau (florence.gazeau@univ-paris-diderot.fr).

The position is available in September for one year with a possibility of extension.

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Please submit: CV, description of research experience, contact information for 3 references

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