PhD grant in Bordeaux, France  
Deadline 25 may 2016 !!

**Molecular Imaging of Pathological Proteolytic Enzymes Activity using MRI**

**Environment:** Ph. D thesis funded by the ANR « PULMOZYMAGE », a multi-disciplinary project involving chemists for substrates synthesis (Marseille), lung inflammation diseases animal models experts (Lyon), a biochemist, a cell biologist and MRI methodologists (Bordeaux). In close collaboration with another Ph. D student in MRI methodology.

**Aim:** MRI mapping of enzymatic activities, first within animal models of lung inflammation diseases (elastase activity in COPD or cystic fibrosis), then on other disease models (pancreatitus, tumors...).

**Methods involved:** Design and test of protease-activatable specific substrates that are contrast reagents for Overhauser-enhanced MRI (OMRI).


*In vivo:* application to molecular imaging using the in vitro selected substrates together with the student methodologist. Management of and experiments with the animal models from the Lyon partner and in situ production of animal models of pancreatitis and tumors.

**Key words:** Molecular Imaging ; Proteases ; lungs inflammation ; Pancreatitis ; Tumors; Overhauser-enhanced Magnetic Resonance Imaging

**Research team:**
The PhD student will be under the supervision of Dr Philippe Mellet in an interdisciplinary team (Biochemists, biologists and physicists).

**Related Publications:**

**Laboratory facilities:**
The candidate will benefit from numerous MRI scanners (systems at 0.2, 1.5, 3, 4.7, and 7T), an EPR spectrometer, HPLC and cellular biology facilities. The laboratory has its own animal care facility.

**Candidate profile:**
Biochemist and/or biologist with some knowledge of spectroscopy (optical, nuclear magnetic resonance (NMR), electronic paramagnetic resonance (EPR)). Magnetic resonance imaging and cell culture may be acquired in our lab.

**How to Apply:** please send CV references and application letters to philippe.mellet@rmsb.u-bordeaux2.fr

**Location:**
Centre de Résonance Magnétique des Systèmes Biologiques- UMR 5536 CNRS/Université de Bordeaux, France.

**Lab website:** http://www.rmsb.u-bordeaux2.fr/