



The Singapore Bioimaging Consortium (SBIC)  
presents a seminar

on

**"Multimodal MR Exploration of Experimental Cerebral Malaria  
in vivo: Significant Role of Ischemic Brain Edema"**

**Speaker:** Professor Patrick Cozzone  
Center for Magnetic Resonance in Biology and Medicine,  
CNRS and Aix-Marseille University,  
Faculty of Medicine, Marseille  
France

**Date :** Thursday, 6 September 2012  
**Time :** 11.00am – 12.00pm  
**Venue :** SBIC Seminar Room  
11 Biopolis Way  
Level 2, Helios Building  
Singapore 138667  
(Please use Level 1 entrance)

**Abstract**

Cerebral malaria is the most severe complication of *Plasmodium falciparum* infection, accounting for 1 million deaths per year. We have characterized the murine model of the disease (susceptible mice infected with *Plasmodium berghei* ANKA) by in vivo magnetic resonance imaging, diffusion, perfusion, angiography and spectroscopy at 4.7T. Our findings demonstrate the coexistence of inflammatory and ischemic lesions and prove the preponderant role of edema in the fatal outcome of experimental cerebral malaria. At 11.75T, we have recently reported the first detection of damage to the optic and trigeminal nerves by T<sub>2</sub>-weighted MRI. Cranial nerve injury is the earliest anatomic hallmark of the disease, and might constitute an early marker of experimental cerebral malaria, visible before brain edema becomes detectable. These results improve our understanding of the pathogenesis of cerebral malaria and may provide the necessary noninvasive surrogate markers for quantitative monitoring of possible treatment.

**About the Speaker**

Patrick J. Cozzone is Professor of Biophysics at the Marseille Faculty of Medicine and a member of the Academic Institute of France. He holds a PhD in Biochemistry (Aix-Marseille University, AMU) and a MBA (University of Chicago). He has previously held research/faculty positions at Stanford University, the University of Tunis (Tunisia) and the Institute of Biological Chemistry in Marseille.

He is the founder and director of the Centre de Résonance Magnétique Biologique et Médicale (CRMBM), a research unit with a staff of 70 specializing in biomedical NMR, jointly operated in Marseille by CNRS, AMU and the University Hospital. Prof Cozzone has co-authored over 400 peer-reviewed papers and directed 40 PhD theses. He has served in several French research agencies (CNRS, INRA, ANR, etc.) and international organizations, was an adviser to the French Minister of Research, has presided ESMRMB, and is currently a member of the IUPAB Executive Committee. He is the Editor-in-chief of MAGMA and a fellow of ISMRM.

***--- Admission is free and all are welcome ---***