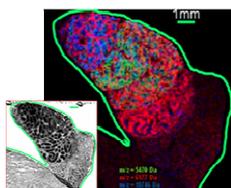


Newsletter

www.perene-project.eu



Lecture



As part of the PeReNE project's scientific activities, Dr **Charles PINEAU** (director of the proteomics platform Biogenouest) will give a lecture entitled "MALDI Imaging: applications, limitations and potential", in the PRIMACEN meeting room (room 308) on the 3rd floor of the main building of the Faculty of Sciences and Technology in Mont-Saint-Aignan, on 18th February, 2014 at 11 am.

RICT 2014



The French Medicinal Chemistry Society (Société de Chimie Thérapeutique - SCT) is hosting the 50th International Meeting on Medicinal Chemistry (RICT 2014) in Rouen, from 2nd to 4th July, 2014. This year, the symposium will focus on "Interfacing Chemical Biology and Drug Discovery" and will address among others the role of peptides and peptidomimetics for drug discovery. RICT 2014 will be held at Rouen's Faculty of Law, located along the River Seine, and is expected to gather more than 600 scientists. For more program information, please visit: www.rict2014.org.

20th International Symposium on Regulatory Peptides

The 20th International Symposium on Regulatory Peptides (REGPEP2014) will be held in Kyoto, Japan, from 7th to 10th September, 2014. The sessions will cover topics such as identifying new peptides, interactions between ligands/receptors, the interaction of peptides with the blood-brain barrier, the effect of peptides on the brain, the cardiovascular system, gastrointestinal tract, etc... For more program information, please visit: www.regpep2014.com.



12th International Symposium on VIP, PACAP and Related Peptides

The International Committee on VIP, PACAP and Related Peptides has decided that the 12th International Symposium on VIP, PACAP and Related Peptides will be organized by **Nese TUNCEL** and her colleagues in Nevşehir (Cappadocia, Turkey), from 21st to 26th September, 2015.



Recruitment

Mrs **Marie-Laure WALET-BALIEU** has been recruited to the PeReNE project to develop peptide characterization and quantification by mass spectrometry. She will be in charge of developing new protocols and she will assist some users of the network in their proteomic studies.

Next Steering Committee of the PeReNE project



The third Steering Committee of the PeReNE project will take place at the University of Portsmouth on 15th April, 2014. The teams of **Darek GORECKI**, **Alex FORD** and **Tim CLARK** will welcome the 27 teams of the PeReNE network to their premises. This meeting will be an opportunity to review the achievement of deliverables resulting from collaborative projects on peptide research and to plan activities for the last year of the project.



Development of animal models and tools to evaluate the passage of bacterial peptides across the intestinal barrier

Dr Moïse COËFFIER

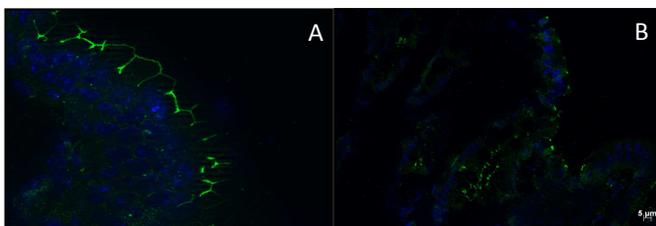
Inserm U1073, Université de Rouen, France

The gut contributes to the regulation of homeostasis of the organism not only by digestion and absorption of nutrients but also by its role as barrier. Indeed, a large number of bacteria are present in the intestinal lumen, particularly in the colon. The passage of endotoxins or bacterial peptides consequently to a gut barrier dysfunction seems to be involved in the initiation and/or perpetuation of several pathophysiological conditions. For instance, alteration of gut barrier contributes to the regulation of immune and inflammatory responses, to insulino-resistance, to visceral sensitivity and to food intake regulation.

In our research group we aim to better understand the contribution of the gut-brain axis in the regulation of food intake. Firstly, in collaboration with the animal behaviour platform (SCAC, IRIB, Rouen), we developed a model of anorexia associated with physical activity: the activity-based anorexia model or ABA model. We recently showed (Jésus et al, Clin Nutr, doi: 10.1016/j.clnu.2013.11.006) that barrier function is altered in the colon but not in the jejunum of anorectic mice compared with controls. To evaluate barrier function, we studied the passage of macromolecules coupled with isothiocyanate of fluorescein (FITC) *ex vivo*. In addition, we observed that expression and localization of tight junction proteins (claudin-1 and occludin) were altered.

Future experiments will be dedicated to elucidating the signalling pathways involved in gut barrier dysfunction. Innate immune response and Toll-like receptors will also be studied. Finally, we will focus on the role of increased passage of bacterial peptides across the gut barrier on food intake regulation and on the functions of other organs such as muscles.

This project aims to better understand the role of gut barrier function in the pathophysiology of eating disorders by focusing on concept of microbiota-gut-brain axis.

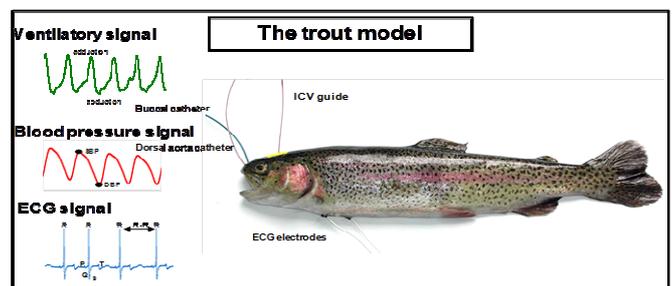


Brain neuropeptides in central ventilatory and cardiovascular regulation in trout

Dr Jean-Claude LE MÉVEL

LaTIM UMR 1101, Université de Bretagne Occidentale, France

Neuropeptides play a critical role in the central control of cardiovascular and ventilatory activities and disturbances in the regulatory functions of brain peptides may have severe clinical consequences. However, only a few mammalian studies have focused on the integrated physiological actions of neuropeptides on these vital cardio-respiratory regulations. Because both the central neuro-anatomical substrates that govern motor ventilatory and cardiovascular output and the primary sequence of regulatory peptides and their receptors have been mostly conserved through evolution, we have developed a trout model to study the central action of native neuropeptides on cardio-ventilatory regulation. For the PeReNE project we will investigate the effects of newly discovered fish or invertebrates neuropeptides (urotensin II, urotensin II-related peptides, crustacean cardioactive peptide ...) after intracerebroventricular injection within the brain or peripheral intra-arterial injection. Fluoxetine, the active ingredient of the antidepressant Prozac™, is a selective serotonin re-uptake inhibitor present in the aquatic environment which is known to bioconcentrate in the brains of exposed fish. Consequently, we will also determine the central interactions between fluoxetine and the cardio-ventilatory effects of neuropeptides.



From Le Mével *et al.*, Brain neuropeptides in central ventilatory and cardiovascular regulation in trout. *Frontiers in Endocrinology*, 2012, 124, 1-15.

Immunostaining in the colonic mucosa of claudin-1 (green), a protein of tight junction between epithelial cells, in control (A.) and ABA (B.) mice.

