Natural Environment/ENA-8

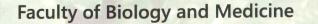
Exposure to microorganisms and endotoxins in crop workers

¹Niculita-Hirzel H., ¹Oppliger A.

Institute for Work and Health 1

Microorganisms are biotic factors that may strongly affect farmers' health. They may be present at a particularly high concentration in the air when they are mechanically aerosolized during harvesting and post-harvesting operations. Regular inhalation of these microorganisms and of their constituents (e.g. endotoxins, β-glucans, mycotoxins) has been proposed to be responsible of the high prevalence of respiratory syndromes among farmers. For this raison, general preventive strategies are needed in order to decrease farmer exposure to these bioaerosols. This study aims to identify the factors that reduce the growth of fungi and bacteria in crops.

In agroecosystem, the composition of soil fungal and bacteria communities is greatly influenced by agriculture practices such as the usage or not of tilling, of nutritional additives or of different fungicides. A change in soil microbial community composition may directly affect the concentration in bacteria, fungal particles and mycotoxins deliver in air. In order to test this hypothesis, we sampled soil, plant, grain and air during harvesting from 100 sites randomly distributed through Vaud canton representative of the different agriculture practices. Genomic DNA has been extracted from these samples and fungal and bacteria concentration has been evaluated by Q-PCR on the ITS2 and 16S respectively. The results are interpreted by taking in account the agriculture practice, the Phosphorus: Carbon: Nitrogen ratio of the soil, the altitude and the average of rainy days per year.



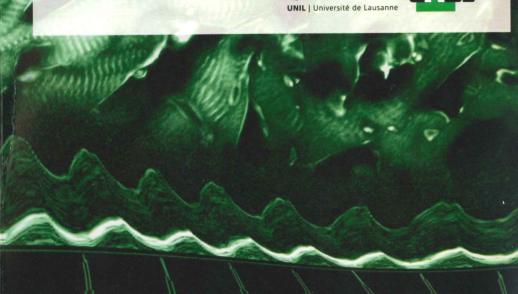
FBM Research Day

January 27, 2011 César Roux Auditorium

Cardiovascular and Metabolic Disorders







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Cover: Yannick Krempp, Department of Cell Biology and Morphology - UNIL

Photos: Epifluorescence microscopy of a mouse heart section showing a-actinin stained cardiomyocytes provided by Philippe Kiehl and Thierry Pedrazini, Experimental Cardiology Unit, CHUV (top) and echocardiographic M-mode image and ECG monitoring of a beating mouse heart provided by Corinne Berthonneche et al., Cardiovascular Assessment Facility & Experimental Microsurgery Facility (CAF/EMIF), Cardiomet, CHUV (bottom)





Faculté de biologie et de médecine

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Short talks

Schedule	Names & Departments	Titles		
Morning				
10h15 - 10h30	Stefan KOHLER PACTT – UNIL/CHUV	From the lab to the market: Commercialisation of research results		
10h30 - 10h45	Cécile JACOVETTI Department of Cellular Biology and Morphology - UNIL	The role of micro-RNAs in beta-cell mass expansion during pregnancy		
10h45 - 11h00	Pedro MARQUES-VIDAL Social and Preventive Medicine CHUV	Prevalence and management of cardiovascular risk factors among migrants in Switzerland		
11h00 - 11h15	Francesca AMATI Department of Physiology - UNIL and Service of Endocrinology, Diabetology and Metabolism - CHUV	Skeletal muscle mitochondrial content and electron transport chain activity in older adults at risk for type 2 diabetes: relationship to insulin sensitivity, metabolic flexibility and fatty acid oxidation		
11h15 - 11h30	Evrim JACCARD Departement of Physiology UNIL	Involvement of the RasGAP-derived fragment N in the resistance of pancreatic beta cells towards apoptosis		
11h30 - 11h45	Luca CARIOLATO Institute of Pharmacology and Toxicology - UNIL	Characterization of novel hypertrophic pathways activated by the AKAP-Lbc signalling complex in cardiomyocytes		
Afternoon				
14h15 – 14h30	Sasha HUGENTHOBLER Euresearch	European funding opportunities for health and health related research		
14h30 - 14h45	Mohammed NEMIR Experimental Cardiology Unit CHUV	Cardiac-specific overexpression of the Notch ligand Jagged1 reduces cardiac hypertrophy and fibrosis in response to hemodynamic stress		
14h45 - 15h00	Hoshang FARHRAD Service of Nuclear Medicine CHUV	Myocardial Blood Flow Quantification with Rubidium-82 Cardiac PET has Incremental Prognostic Value in Patients with Known or Suspected Coronary Artery Disease		
15h00 - 15h15	Muriel AUBERSON Department of Pharmacology and Toxicology - UNIL	GLUT9 and uric acid handling by the kidney		
15h15 - 15h30	Fabienne MAURER Service of Medical Genetics CHUV	Mapping genetic variants associated to beta-adrenergic responses in inbred mice		
15h30 - 15h45	Maxime PELLEGRIN Service of Angiology CHUV	Critical role of Angiotensin II type 1 receptor on bone marrow-derived cells in the development of vulnerable atherosclerotic plaque in 2-Kidney, 1-Clip ApoE-/- mice		