

# The 2<sup>nd</sup> International Conference

# **CBRNE – Research & Innovation** May 29th - June 1st 2017

### **Posters sessions**

## **Medical Countermeasures**

On-field validation of the rapid diagnostic test Ebola eZYSCREEN® - Laurent BELLANGER

Biological effects of alumina nanoparticles / hydrochloric acid mixtures mimicking combustion aerosols from solid composite propellants on human pulmonary A549 alveolar epithelial cells - Alexandra BOURGOIS

Procaryotic expression of human butyrylcholinesterase: a new tool for the development of affordable nerve agents bioscavengers - Xavier BRAZZOLOTTO

In vivo efficacy assessment of novel uncharged reactivators of NOP-inhibited acetylcholinesterase in Mouse compared to pralidoxime - André-Guilhem CALAS

Effect of anthrax edema toxin - Belinda DESRUES

Design, synthesis and in vitro evaluation of a promising new class of bifunctional uncharged hybrid reactivators for nerve agent-inhibited human acetylcholinesterase - José DIAS

A unique preclinical core facility structure to study in non-human primates: intoxications, infections and to test and/or validate vaccines and medical countermeasures efficacy - Frédéric DUCANCEL

Modified Vaccinia Lister (MVL), a safe and easy to produce vector for human or veterinary vaccines -Audrey FERRIER-REMBERT

Development of monoclonal antibodies against Sudan Ebolavirus for detection, diagnostic and therapy -Fabrice GALLAIS

Systems Biology networks/pathways: Comparison at 7Systems Biology networks/pathways: Comparison at 72 h and 75 days post exposure to Soman in rats.2 h and 75 days post exposure to Soman in rats - Aarti GAUTAM

Structure-based drug design of new compounds targeting the protein-protein interfaces of the vaccinia virus DNA polymerase holoenzyme – Frédéric ISENI

Efficiency of multiple administrations of an HI-6 dimethanesulfonate, atropine sulfate and avizafone chlorhydrate combined treatment in Russian VX-intoxicated cynomolgus monkeys - Nina JAFFRE

Development of new reactivators of OP-inhibited cholinesterases - Ludovic JEAN

Risk-Informed Demand for CBRN Medical Countermeasures - Mark Lawrence JOHNSON

Innovative antiviral strategies targeting different steps of RABV infection - Sabrina KALI

Synthesis of Functionalized Chitosan Nanoparticles for Plutonium Pulmonary Decorporation - Laurane LEOST

Efficiency of phage therapy in an acute murine model of pulmonary infection - Guillaume L'HOSTIS

Immunopurification of proteins modified on tyrosine by chlorpyrifos oxon - Oksana LOCKRIDGE

High-Throughput Screening of Rac1 modulators as regulators of innate and acquired immunity - Nassim MAHTAL

Assessment of new medical countermeasures against nerve agent poisoning using an isolated organ approach – Katharina MARQUART

Bone Marrow Selective Shielding as an Approach to Protect First Responders from Deterministic and Stochastic Radiation Effects - Oren MILSTEIN

Acetylcholinesterase and respiration: where this essential enzyme is required? – Aurélie NERVO

Quorum quenching lactonase: towards innovative medical countermeasures against bacterial infections -Laure PLENER

Quantification of radiological threat and exposure: How much is too much? - Jozef SABOL

Using phenothiazines to inhibit efflux pumps: impact on B. pseudomallei clinical isolats - Marine SCHNETTERLE Integrin CD11c as an emerging biomarker for Anthrax Edema Toxin infection - Emilie TESSIER

Early detection of active edema and lethal factors during cutaneous and pulmonary anthrax -Clémence ROUGEAUX



#### Protection/Decontamination

In vitro hair and skin decontamination studies evaluating the ladder pipe decontamination system (LPS), dry decontamination and combined dry and LPS decontamination strategies – *Nevine AMER* 

Development of an in vitro combined human hair and pig skin model for evaluation of emergency decontamination strategies – *Nevine AMER* 

Mass casualty decontamination in chemical incidents: outcomes from a series of human volunteer trials – Richard AMLÔT

Volunteer trials of a novel improvised dry decontamination protocol for mass casualty incidents as part of the UK&#8217;s Initial Operational Response – *Richard AMLÔT* 

Laboratory-based studies of absorbent materials for mass casualty decontamination as part of the UK's Initial Operational Response – *Robert CHILCOTT* 

Formulating enzymes towards broad spectrum decontamination of chemical warfare agents (H, G and V) - David DAUDE

Experimental characterization of DEC'POL® decontamination properties (New emergency decontamination mitt) on threats agents simulants – *Carole DOUGNAC* 

Optimisation of non-ambulant (clinical) decontamination processes – Adam DURRANT

Can sol-gel materials replace activated carbon? - Eva GRINENVAL

An environmentally friendly approach to extracting specifically uranium from contaminated soils and water – Miryana HEMADI

Adaptation of civilian system " Field and Laboratory Emission Cell FLEC® " for the measurement of CWA vapors released by solid materials after a decontamination process – *Aurélie JACQUART* 

Investigation of microbial-host interactions for development of decontamination and biodefence strategies – Klara KUBELKOVA

Field trial of a putatively optimised process for ladder pipe decontamination of mass casualties – Joanne LARNER

BioChemGEL-Sys® B&C decontamination of Infrastructures – Célia LEPEYTRE

A combined skin and hair model for assessing decontamination systems using human volunteers Devanya MAHALINGAM

Evaluation of the ladder pipe system for mass casualty decontamination studies: in vitro studies with the chemical warfare agents sulphur mustard and VX – *Hazem MATAR* 

Design issues and user feedback for Hospital CBRN decontamination unit - Michel PHILIPS

In vitro skin decontamination effectiveness as a function of contaminant geometry - Andreia PINHAL

In vitro skin decontamination effectiveness as a function of contamination density - Andreia PINHAL

Assessment of hair contamination by chemical warfare agents and evaluation of common decontamination procedures towards hair – *Anne PIRAM* 

Development of a new animal model for evaluating toxicity and growth disruption: the case of organophosphorus compounds – *Laetitia POIRIER* 

Harnessing a versatile lactonase from Sulfolobus solfataricus for health, protection and biodecontamination – Benjamin REMY

Fuller's earth physical chemistry: mechanisms of action - Annick ROUL

Formulation of Pickering emulsion stabilized by CeO2, application for skin decontamination of the organophosphorus pesticide Paraoxon – *Alicia SALERNO* 

Using ceria for skin decontamination of the organophosphorus pesticide Paraoxon: impact of physico-chemical properties of CeO2 and galenic form on its degradation activity – *Alicia SALERNO* 

Metal-organic frameworks for C-protective clothing and respiratory cartridges – Frank SCHNÜRER

Decontamination of a small group of people – Jean-Christophe ZINK

Decontamination of working dog - Jean-Christophe ZINK



#### Detection

PathoTRACK: Toward a complete analytical chain of NGS data for the detection and identification of pathogenic organisms – *Johann BEGHAIN* 

Particles sampling for explosives detection with the prototype device SYMOPREP - Alain BRY

Hair absorption of organophosphorus nerve agent simulants - Clémentine COTE

High-throughput DNA sequencing and bioinformatics for the detection and identification of pathogenic organisms in complex mixtures – *Stéphane CRUVEILLER* 

Automated analytical system for sensitive detection of bacterial spores - Remco den DULK

Development of a Field-Forward Kit Designed to Extract Nerve Agent Breakdown Compounds from Urine and Aqueous Environmental Samples – Robert diTARGIANI

Gadosphere: a Gd-based plastic detector for wide spectrum neutron detection - Jonathan DUMAZERT

Development of zeolite matrix of laser desorption/ionization for CBRNE: direct analysis of drugs and their metabolites in urine – *Tatsuya FUJINO* 

Genetic detection of biothreat agents - Fabienne GAS

An innovative microfluidic qPCR platform for high throughput qPCR testing of bioterrorism agents - Fabienne GAS

Rapid absolute quantification of abrin toxin and its isoforms in complex matrices by immuno-extraction and high resolution targeted mass spectrometry – *Eva-Maria HANSBAUER* 

Automatized functional annotation of virulence and resistance factors to complement phylopeptidomics results – Virginie JOUFFRET

A downsized time-of-flight mass spectrometer for the detection of CBRNE chemical and biochemical molecules – Takashi KORENAGA

Identification and discrimination of bacteria by phylopeptidomics: the Bacillus genus example - Charlotte MAPPA

Identification of antimicrobial resistance biomarkers in Burkhodleria pseudomallei based on whole-cells MALDI-TOF mass spectrometry: from surrogates to clinical strains – *Mélissa MARCHANDEAU* 

Optical elastic scattering for label-free identification of bacterial pathogens – Pierre R. MARCOUX

TOWARDS A REAL TIME MONITORING OF SAXITOSIN IN SEA WATER USING COLORIMETRIC DETECTION ASSAYS – Laura MICHELI

Experimental material discrimination in spectral tomography – Vincent MOULIN

Multi-energy X-ray detectors to improve air-cargo security – Caroline PAULUS

Detection of Special Nuclear Materials by Neutron Interrogation – Bertrand PEROT

Development of a novel piezoresistive lever sensor for pathogens detection - Laurent PHAM VAN

Mix24X, a reference artificial microbiota to evaluate phylopeptidomics and metaproteomics tools - Olivier PIBLE

Development of Micro- Time-Of-Flight mass spectrometer for Chemical Threat in situ detection – Frédéric PROGENT

Selective and sensitive near-infrared fluorescent probe for non phosphonylated acetylcholinesterase imaging – Pierre-Yves RENARD

A simple sample preparation device, keystone of a biological threat detection chain – Jean-Maxime ROUX

The tagged neutron inspection system of the C-BORD project – Alix SARDET

New method development for the fast identification of toxic chemicals by the analysis of their oxidation products – Sébastien SCHRAMM

A whole cell optical bioassay for the detection of chemical warfare agent simulants – Viviana SCOGNAMIGLIO

SPIR-Explorer: a Versatile RAD/NuC payload for UAV/UAG – Julien SPRUYTTE

Flat detector of toxic aerosols – Michal DYMAK



# **Risk Management**

Psychological well-being of healthcare staff involved in the Ebola Response 2014-2015 – *Richard AMLÔT* Improvements and innovative developments in CERES®, the CEA decision support system fitted to noxious atmospheric releases – *Patrick ARMAND* 

French CBRNE medical SOPs: lessons learnt from EU funded FP7 exercises – *Catherine BERTRAND* Fitting-out and testing of a FTIR stand-off vehicle – *Salvatore CORRAO* 

Nuclear Risk, from Radioisotope (bio)chemistry to Public Perception - Christophe DEN AUWER

Lessons learned from chemical demonstrations in the European CBRNe EDEN project - Céline DUPUIS

A simple and operative CBRNe taxonomy proposal to facilitate the resilience of Hospital & Skilled Nursing Facility in France in light of the current terrorist threat – *Jan-Cedric HANSEN* 

United Nations Secretary General Mechanism - Lionel KOCH

French interdepertmental CBRNE training center – Captain Hugues LAURENT

Inserm Jean Mérieux BSL4 Laboratory : an overview – Delphine PANNETIER

Guidance for the security of hazardous materials (CBRNE) in health care facilities - Pepijn VAN DEN BROEK