



Société Française
de Microbiologie

Mycobacteria 2019

6th meeting of fundamental and medical mycobacteriology

26-27-28 June 2019, Angers

PROGRAMME



Scientific committee

Alain Baulard (Lille),
Priscille Brodin (Lille),
Roland Brosch (Paris),
Stéphane Canaan (Marseille),
Oana Dumitrescu (Lyon),
Martine Gilleron (Toulouse)
Jean Louis Herrmann (Versailles),
Laurent Kremer (Montpellier),
Camille Locht (Lille),
Laleh Maljesi (Paris),
Laurent Marsollier (Angers),
Fabienne Misguich (Versailles),
Estelle Marion (Angers),
Olivier Neyrolles (Toulouse),
Nicolas Veziris (Paris),
Nathalie Winter (Tours).

Local organizing committee

Rachel Chenouard,
Marie Kempf,
Estelle Marion,
Laurent Marsollier.



June 26, 2019

14h00 : **Registration**

14h45 : **Meeting introduction**
Marie Kempf on behalf of the organizing committee

15h00 : **Opening lecture**
Olivier Neyrolles, *Institut de Pharmacologie et de Biologie Structurale, Toulouse, France*
« Suicide » toxins: a Achille's heel in the tuberculosis bacillus?

16h-16h30 : **Keynote Lecture**
Estelle Marion *Centre de Recherche en Cancérologie et Immunologie Nantes-Angers, Angers University, Angers, France*
Buruli ulcer: link between disease incidence, access to drinking water and *Mycobacterium ulcerans* genetic diversity

16h30-17h00 : **Coffee break – Poster setting**

17h00-17h30 : **Session 1 = Mycobacteria and their environment**
(Moderator: P Brodin) *Each talk 10 + 5 min (questions)*

From environmental bacteria to obligate pathogen: the study of adaptations enhancing the persistence of tuberculosis bacilli.
Allen Aideen, CNRS, IPBS, Université de Toulouse, Toulouse, France.

Survie environnementale de *Mycobacterium avium* ssp. *paratuberculosis* et *Mycobacterium bovis*: rôle des amibes libres dans l'épidémie de la tuberculose bovine et de la paratuberculose.

Franck Biet, ISP INRA, Université de Tours, UMR 1232, Nouzilly, France.

17h30 – 18h00 : **Keynote Lecture**

Nicolas Véziris, *CIMI, Sorbonne University, Paris, France*
New diagnostic methods for Mycobacteria : the pros and cons

18h15 : **Wine and cheese and poster session**



June 27, 2019

9h00-9h30 : **Keynote lecture**

Oana Dumitrescu, CIRI, Lyon University, Lyon, France

Clinical use of whole genome sequencing for *Mycobacterium tuberculosis* in the workflow of TB diagnosis and control

9h30-10h45 : **Session 2 - Diagnosis tools and clinical aspects of tuberculosis**

(**Moderator : JL Herrmann and A. Baulard**) Each talk 10 + 5 min (questions)

First evaluation in routine use of the combination of GeneLeadVIII to extract and detect *Mycobacterium tuberculosis* (MtB) DNA and Deeplex-MycTB to predict drug resistance and TB transmission in less than 7 days from clinical samples.

Isabelle Bonnet, Centre National de Référence des mycobactéries et de la résistance aux antituberculeux, and Laboratoire de Bactériologie, Cimi-Paris, INSERM U1135, Sorbonne Université, Paris, France.

Apport de la spectrométrie infrarouge dans la différentiation des sous-espèces du complexe *mycobacterium abscessus*.

Clémence Beauruelle, Université de Brest, INSERM, EFS, UMR 1078, GGB, et CHRU Brest, Unité de Bactériologie, Brest, France

Extrapulmonary tuberculosis in Ivory coast

Timothée Ouassa, UFR des Sciences Pharmaceutiques et Biologiques, Université Félix Houphouët-Boigny, Abidjan, Côte d'Ivoire.

10h45-11h15 : **Coffee break**

11h15-12h10 : **Session 3 - Molecular tools and human and animal tuberculosis disease monitoring** (**Moderator : R. Brosch**) Each talk 10 + 5 min (questions)

A mutation in whiB6 contributes to the genetic adaptation of a global epidemic clone of multiresistant *mycobacterium tuberculosis*.

Wladimir Sougakoff, Laboratoire de Bactériologie, Cimi-Paris, INSERM U1135, Sorbonne Université, Paris, and Centre National de Référence des mycobactéries et de la résistance aux antituberculeux, Paris, France.

Pinpointing genetic intra-host diversity of *Mycobacterium tuberculosis*.

Charlotte Genestet, Centre international de recherche en infectiologie (CIRI), INSERM U1111, Université de Lyon et Fondation Mérieux, Lyon, France



Analyse génomique des souches de *Mycobacterium tuberculosis* multiresistantes en France : évolution 2006-2018.

Vincent Jarlier, Centre National de Référence des mycobactéries et de la résistance aux antituberculeux, Paris, France.

Scénario de propagation de souches de *Mycobacterium bovis* circulant dans des parcs et enclos de chasse français par l'approche WGS.

Lorraine Michelet, University Paris-Est, French Agency for Food, Environmental and Occupational Health and Safety (Anses), Laboratory for Animal Health, Tuberculosis reference laboratory, Maisons-Alfort, France.

12h30-13h00 : **Symposium**

Raphaël Chiron, University hospital and Montpellier University, Montpellier, France

Nebulised liposomal amikacin in Non-Tuberculous Mycobacterial infections

13h00-13h45 : **Lunch and Poster session**

13h45-14h15 : **Keynote lecture**

Jennifer Hermann, Helmholtz Zentrum für Infektionsforschung, Braunschweig, Germany

Discovery and Development of Anti-infective Natural Products from Microbial Sources

14h15-15h30 : **Session 4 - New therapeutic strategies against Mycobacteria**

(Moderator : Laleh Majlessi) Each talk 10 + 5 min (questions)

Etude du microenvironnement et de la pénétration de médicaments dans les lésions tuberculeuses par imagerie par spectrométrie de masse.

Landry Blanc, CNRS – CBMN, UMR 5248, Université de Bordeaux, CGFB, France.

Ketogenic diet benefits against *Mycobacterium ulcerans* infection: keys toward wound management improvement in Buruli ulcer.

Mélanie Foulon, Laboratoire ATOMycA, CRCINA INSERM U1232, Angers, France

Intrinsic Antibacterial Activity of Nanoparticles made of β ETA-Cyclodextrins Potentiates their Effect as Drug Nanocarriers against Tuberculosis.

Arnaud Machelart, Université Lille, CNRS, INSERM, CHU Lille, Institut Pasteur de Lille, U1019 - UMR 8204 – CIL, Lille, France.

15h30-15h45 : **Coffee break**



15h45-16h15 : Keynote lecture

Audrey Bernut, University of Sheffield, Sheffield, UK

Deciphering the pathogenesis of NTM in cystic fibrosis using zebrafish model of infection

16h15-17h30 : **Session 5 = Mycobacterium chelonae, Mycobacterium abscessus and therapeutic advances (Moderator : Camille Locht)** Each talk 10 + 5 min (questions)

PK/PD type modeling approach to support time-kill data interpretation of cefoxitin for the treatment of Mycobacterium abscessus.

Julien M. Buyck, Inserm U1070, Pôle Biologie Santé et Université de Poitiers, UFR Médecine-Pharmacie, Poitiers, France.

Infection du site opératoire à Mycobacterium chelonae : les enseignements de l'analyse des causes,

Nathalie Van der Mee-Marquet, CPIAS Centre Val de Loire, Service de Bactériologie-Virologie-Hygiène, Hôpital Bretonneau, CHRU, Tours, France

Construction of isogenic Mycobacterium abscessus strains to assess the impact of the SDN/SDG polymorphism on the activity and inhibition of mycobacterial β -lactamases,

Eva Le Run, INSERM, U1138, Equipe 12 du Centre de Recherche des Cordeliers, Sorbonne Université, UMR S 1138, Université Paris Descartes, Sorbonne Paris Cité, UMR S 1138, Paris, France

18h00 :

Visit of Jean Lurçat Museum and cocktail



June 28, 2019

9h00-9h30 : **Keynote lecture**

Giulia Manina, Pasteur Institute, Paris, France

Mycobacterial individuality and persistence: Fundamental studies towards control strategies

9h30-10H00 : **Session 6 = Physiopathology (Moderator : F. Misguich)**

Each talk 10 + 5 min (questions)

Innate immune response of human macrophages upon bedaquiline treatment.

Alexandre Giraud-Gatineau, Unit for Integrated Mycobacterial Pathogenomics, Department of Microbiology & Department of Genomes and Genetics, Institut Pasteur, Paris, Université Paris Diderot, Sorbonne Paris Cité, Cellule Pasteur, Paris, France.

IRG1 controls immunometabolic host response and inflammation to restrict *Mycobacterium tuberculosis* infection.

Eik Hoffmann, Université Lille, CNRS, INSERM, CHU Lille, Institut Pasteur de Lille, U1019 - UMR 8204 – CIL, Lille, France.

10h00-10h30 : **Coffee break**

10h30-11h00 : **Keynote lecture**

Martine Gilleron, IPBS, Toulouse

Deciphering the molecular bases of *Mycobacterium tuberculosis* lipid antigen presentation

11H00-11H30 : **Session 7 = Mycobacterial targets (Moderator : S. Canaan)**

Each talk 10 + 5 min (questions)

Mycobacterium abscessus N-carbamoyl-putrescine amidohydrolases genes *MAB_2545c* and *MAB_2818c* are involved in the polyamine synthesis pathway as shown by CRISPR interference.

Vincent Le Moigne, UVSQ, Université Paris-Saclay INSERM U1173, 21, Montigny-le Bretonneux, France

Structural and Biochemical studies of Eis2 a key player in aminoglycosides resistance in *Mycobacterium abscessus*.

Mickaël Blaise, Institut de Recherche en Infectiologie de Montpellier (IRIM), Université de Montpellier, CNRS UMR 9004, Montpellier, France

11h30-12h00 : **Keynote lecture**

Rafael Prados Rosales, Faculty of Medicine, Madrid, Madrid, Spain



Connecting vesiculogenesis and cell wall remodelling in *Mycobacterium tuberculosis*

12h00-12h30 : **Session 8 = The mycobacterial cell wall (Moderator : L Kremer)**

Each talk 10 + 5 min (questions)

Structure and inhibition of phosphopantetheinyl transferases from pathogenic (MYCO)bacteria.

Lionel Mourey, Institut de Pharmacologie et de Biologie Structurale, IPBS, Université de Toulouse, CNRS, UPS, Toulouse, France.

Cpn60.1 (GroEL1) contributes to mycobacterial Crabtree effect: implications for biofilm formation.

Véronique Fontaine, Microbiology, Bioorganic & Macromolecular Chemistry Research Unit, Faculté de Pharmacie, Université libre de Bruxelles, Belgique.

12h30-13h45 : **Lunch and Poster session**

13h45-13h45 : **Keynote lecture**

Roger Le Grand, IDMIT Centre, Paris, France

Advances in characterization of host response to infections and vaccines

14h15-15h00 : **Session 9 = New mycobacterial experimental models**

(Moderator : N. Winter) Each talk 10 + 5 min (questions)

Lung organoids as a human 3D model system to explore tuberculosis.

Céline Cougoule, Institut de Pharmacologie et Biologie Structurale, IPBS, Université de Toulouse, CNRS, UPS, Toulouse, France.

Developpement d'un modèle drosophile au phénotype de mucoviscidose pour étudier la physiopathologie de l'infection à *Mycobacterium abscessus*.

Hamadoun Toure, U1173 Infection et Inflammation, Université de Versailles Saint-Quentin-en-Yvelines, UFR Simone Veil - Santé, Montigny le Bretonneux, France

15h00 : **Concluding remarks and next MycoClub (Med) Meeting**