

JOINT INSTITUT PASTEUR – UNIVERSITÉ DE PARIS

Antimicrobial Resistance Symposium
Bacteria, Fungi, Parasites and their Vectors

November 29-30, 2021

PROGRAM

SPONSORS



Interaction *Aspergillus fumigatus* et *Pseudomonas aeruginosa* observée en microscopie électronique à balayage. La bactérie se fixe le long du mycélium et émet des filaments augmentant son adhésion.

November 29th, 2021 – Université de Paris

Grand Amphithéâtre – 12 rue de l'École de Médecine 75006 Paris

1:20pm - Welcome Coffee

2pm - Introduction

Pr. Christine CLERICI, introduced by Erick Denamur – Université de Paris

Pr. Stewart COLE, introduced by Paola B. Arimondo – Institut Pasteur

2.30pm - 3.55pm - Clinics and Therapeutics

Chairman: Philippe Glaser

Simon FILLATREAU – Université de Paris – Site Necker - Hôpital Necker-Enfants Malades

“Can increasing the levels of anti-microbial proteins with anti-inflammatory functions help to overcome resistance to antibiotics? The case of SLPI”

Molly INGERSOLL – Institut Pasteur

“Developing non-antibiotic based therapies supporting immunity against recurrent urinary tract infection.”

Benoît GAMAIN – Université de Paris – Institut National de la Transfusion Sanguine

“Towards the development of a placental malaria vaccine”

Olivier LORTHOLARY - Université de Paris - Hôpital Necker-Enfants Malades - Institut Pasteur

« New insights into treatment of *Cryptococcus neoformans* meningitis in AIDS”

Arnaud CHÊNE – Université de Paris – Institut National de la Transfusion Sanguine

« A novel and versatile immunotherapy platform for re-directing a pre-existing Epstein-Barr virus antibody response towards defined pathogenic targets »

Jérémy SEURAT – Université de Paris – Site Bichat

“Combination of *in vivo* phage therapy data with in silico model highlights key parameters for treatment efficacy »

France MENTRÉ / Camille D'HUMIÈRES – Université de Paris – Site Bichat - Hôpital Bichat - Claude-Bernard

« Antibiotics impact on the gut microbiota: insights from a multiomic approach »

Baptiste GABORIEAU – Institut Pasteur – Université de Paris –

« Pulmonary Phage Therapy : review of 10 years of collaborations between IP and APHP/UP teams”

André BIRGY/ Claire HOBSON – Université de Paris – Site Bichat - Hôpital Robert Debré
« A microbiota-dependent response to antibiotic treatment in an *in vitro* human gut model »

Véronique SARRASIN-HUBERT / Jérôme CLAIN – Université de Paris – Faculté de Pharmacie - Site Observatoire - Hôpital Bichat – Claude-Bernard
« Clinical resistance to atovaquone-proguanil treatment in malaria parasites: evolution and determinants »

Lise MUSSET – Institut Pasteur de Guyane
« *Plasmodium falciparum* adaptation processes to amino-4-quinoleines in the Guiana Shield: epidemiology and evolution »

Agnès LEFORT DES YLOUSES / Victoire DE LASTOURS – Université de Paris – Site Bichat - Hôpital Beaujon
« Animal models to fight non-response to antibiotics *in vivo* »

(30 min Break)

4.25pm - 5.50pm - Epidemiology, evolution and modelling (1/2)

Chairman: Mélanie Éthève-Quelquejeu

David SMITH – Institut Pasteur
“Microbiome-pathogen interactions drive epidemiological dynamics of antibiotic resistance: modelling insights for infection control”

Thibaut PONCIN – Université de Paris – Site Bichat - Hôpital Saint-Louis
« Clone dynamics among French *Neisseria gonorrhoeae* isolates showing decreased susceptibility to third generation cephalosporins »

Eve RAHBE – Institut Pasteur
“Worldwide antibiotic resistance dynamics and associated factors: how different is it from one drug-bug pair to another?”

Bich-Tram HUYNH – Institut Pasteur
“ESBL in low-income countries : surveillance, infection and transmission in the community”

Solen KERNEIS – Université de Paris – Site Bichat - Hôpital Bichat – Claude-Bernard – Institut Pasteur
« Antimicrobial stewardship & Infection prevention and control strategies »

André BIRGY – Université de Paris – Site Bichat - Hôpital Robert Debré
« KPC beta-lactamase as a model to study the impact of anticancer chemotherapy on bacteria »

Carolina SILVA NODARI – Institut Pasteur
« A blast from the past: Phylogeny and antimicrobial resistance of historical EPEC »

Jérémy GUEDJ – Université de Paris – Site Bichat
“Modelling bacterial interactions in the gut microbiota following an antibiotic-induced perturbation »

Aude BERNHEIM – Université de Paris – Site Bichat

« Systematic and quantitative view of the antiviral arsenal of prokaryotes »

Eugen PFEIFER – Institut Pasteur

« Phage-plasmids spread common plasmid genes as phages »

Laurence ARMAND LEFEVRE – Université de Paris – Site Bichat - Hôpital Bichat – Claude-Bernard

« Dissemination of multidrug-resistant Enterobacterales in the community »

5.50pm - 8pm - Wine & Cheese

November 30th, 2021 – Institut Pasteur

Amphithéâtre Duclaux – 28 rue du Dr Roux 75015 Paris (entrance by the 205 rue de Vaugirard)

9.00am - 9.30am - Networks

Paola B. ARIMONDO / Philippe GLASER – Institut Pasteur

« AMR @ IP »

Erick DENAMUR – Université de Paris – Site Bichat - Hôpital Bichat – Claude-Bernard

“ AMR @ UP »

Olivier TENAILLON – Université de Paris – Site Bichat

« Microb'UP »

SMARTS-UP teaching and Pasteur Courses

Erick DENAMUR / Isabelle MARTIN-VERSTRAETE – Université de Paris – Institut Pasteur

« EUR-AntiRes »

Mélanie ÉTHÈVE-QUELQUEJEU – Université de Paris – Campus Saint-Germain-des-Prés

« EUR-Chimie »

9.30am - 9.55am - Epidemiology, evolution and modelling (2/2)

Chairman: Mélanie Éthève-Quelquejeu

Chiara CRESTANI – Institut Pasteur

“The KlebNET Genomic Surveillance Platform: a use-case model for global pathogen genomic surveillance”

Céline LOOT – Institut Pasteur

“A new route for bacterial antibiotic resistance dissemination mediated by the integron system”

Hervé JACQUIER – Université de Paris – Site Bichat - Hôpital Lariboisière

« Adaptive plasticity of KPC carbapenemase »

Carla PARADA-RODRIGUES – Institut Pasteur

« Genomic evolution of the globally disseminated multidrug-resistant *Klebsiella pneumoniae* clonal group 147 »

François CAMÉLÉNA – Université de Paris – Site Bichat - Hôpital Saint-Louis

« Emergence of plasmid-mediated 16S rRNA methyltransferase RmtF and carbapenemase co-producing *Klebsiella pneumoniae* isolates in France »

9.55am - 10.35am - Host-Pathogen interaction directed therapy
(1/2)

Chairman: Erick Denamur

Paola B. ARIMONDO – Institut Pasteur

« When Chemistry meets Biology to target the epigenetic regulation in AMR »

Nora MELLOUK – Institut Pasteur“Deciphering key steps in bacterial invasion for host targeted therapy: the case of *Shigella*”**Florence NIEDERGANG** – Université de Paris – Site Cochin« Invasive non-typhoidal *Salmonella Typhimurium* differ by a unique LPS and host response »**Carmen BUCHRIESER** – Institut Pasteur« *Legionella pneumophila* as a model to identify targets for host directed therapies »

(30 min break)

11.05am - 11.30am - Host-Pathogen interaction directed therapy
(2/2)

Chairman: Erick Denamur

Jost ENNINGA – Institut Pasteur

“Identification of host pathways that determine the intracellular niche of invasive bacterial pathogens”

Flore NARDELLA – Institut Pasteur

« Targeting malaria epigenetics for new antimalarial interventions »

Gerald SPAETH / Eric PRINA – Institut Pasteur

“Targeting macrophage epigenetics for host-directed, anti-leishmanial therapy”

Jonathan WEITZMAN – Université de Paris – Campus des Grands Moulins« Targeting the interactions between *Theileria* parasites and their host cells »**11.30am - 12.30pm - Resistance, persistence, tolerance and dormancy** (1/2)

Chairman: Erick Denamur

Frédéric BARRAS – Institut Pasteur

“Environment, redox metabolism and antibiotic resistance”

Ivan MATIC – Université de Paris – Site Cochin

“TisB protein prevents import of environmental toxins to *Escherichia coli* cells suffering massive DNA damages »

Philippe GLASER – Institut Pasteur

“Heteroresistance in *Klebsiella pneumoniae* combines tolerance, persistence and resistance.”

Imane EL MEOUCHE – Université de Paris – Site Bichat

“Antibiotic resistance and tolerance in *Escherichia coli* »

Christophe BELOIN – Institut Pasteur

« Biofilms favors evolution of antibiotic resistance »

Guilhem ROYER – Institut Pasteur – Hôpital Henri Mondor

“Chlorhexidine reduced susceptibility in *Escherichia coli*: natural environment is not the test tube”

Iuliana ENE – Institut Pasteur

“Population heterogeneity in the context of antifungal drug responses”

Colin CLAIRET – Institut Pasteur

“Involvement of kinase genes in antifungal resistance in *C. glabrata*”

12.30pm - 2.pm - Lunch

2.00pm - 2.50pm - Resistance, persistence, tolerance and dormancy (2/2)

Chairman: Erick Denamur

Guilhem JANBON – Institut Pasteur

« Extracellular vesicles and antifungal resistance »

Terry BRISSAC – Institut Pasteur

“Cyclic-di-AMP dependent osmoregulation confers β -lactams tolerance in Group B Streptococcus.”

Gregory BOËL – Université de Paris – Institut de Biologie Physico-Chimique

« AMR and ABC-F proteins: mechanism of action and regulation same fight. »

Matthieu HAUDIQUET – Institut Pasteur

« The bacterial capsule: a sweet barrier to antimicrobial resistance gene transfer ? »

Étienne RUPPE – Université de Paris – Site Bichat - Hôpital Bichat – Claude-Bernard

« The interplay between the antibiotic resistome of commensals and pathogens »

Sylvain BRISSE – Institut Pasteur

“Resistance to penicillin in *Corynebacterium diphtheriae* and contribution of the novel PBP2m”

André CARVALHO – Institut Pasteur

“Deficiency in cytosine DNA methylation leads to high chaperonin expression and tolerance to aminoglycosides in *Vibrio cholerae*”

Giulia MANINA – Institut Pasteur

« Targeting mycobacterial phenotypic variation to improve drug-mediated killing »

Matthijn VOS – Institut Pasteur

“Nanolmaging Core Facility of the Institut Pasteur”

2.50pm - 3.20pm - New targets, novel molecules (1/2)

Chairman: Paola Arimondo

Olivier DUSSURGET – Institut Pasteur – Université de Paris

« NAD kinase: an original bacterial target for antibiotic development »

Ivo GOMPERTS BONECA – Institut Pasteur

« Targeting peptidoglycan assembly complexes »

(30 min break)

3.50pm - 5.00pm - New targets, novel molecules (2/2)

Chairman: Paola Arimondo

Isabelle BROUTIN – Université de Paris – Faculté de Pharmacie – Site Observatoire

« Dissecting the functional mechanism of a gram negative bacterial efflux pumps by an integrative structural approach »

Martin PICARD – Université de Paris - Institut de Biologie Physico-Chimique

« Structure-function study of tripartite efflux pumps from Gram negative bacteria: from in vitro minimal systems to the complexity of the bacterial membrane »

Nienke BUDELMEIJER – Institut Pasteur

« Lipoprotein modification in bacteria: a novel target for antibiotics. »

Clara LAMBERT – Université de Paris – Site Cochin

« The *Streptococcus pyogenes* repressor of fatty acid synthesis pathway, a potential antimicrobial target. »

Fabrice AGOU – Institut Pasteur

“The Chemogenomic and Biological Screening Platform of Institut Pasteur”

Christine GRAVIER-PELLETIER – Université de Paris – Campus Saint-Germain-des-Prés

« Inhibitors of the bacterial transferase MraY, a key enzyme in peptidoglycan biosynthesis »

Jean-Philippe BARNIER – Université de Paris – Site des Cordeliers - Hôpital Européen Georges Pompidou

« Modulation of the specificity of carbapenems and diazabicyclooctanes for selective activity against *Mycobacterium tuberculosis* »

Manon LANG – Institut Pasteur

“A new mechanism of aminoglycosides uptake in Gram negative bacteria, application to the vectorization of antibiotics”

Mélanie ÉTHÈVE-QUELQUEJEU – Université de Paris – Campus Saint-Germain-des-Prés

« Synthesis of chemical tools to explore drug-target interactions »

Stéphanie PETRELLA – Institut Pasteur – Université de Paris

“An integrative approach for the study of a well validated drug target from *Mycobacterium tuberculosis* »

5.00pm - 5.15pm - Concluding remarks

Mélanie ÉTHÈVE-QUELQUEJEU (Université de Paris) & **Philippe GLASER** (Institut Pasteur)

5.15pm - 7pm - Beer & Snacks