

2<sup>nd</sup> World Congress on

# Targeting Microbiota

Towards Clinical Revolution



*Special Session*

**Fecal Microbiota Transplantation:  
Practical Issues and Regulation**

**October 16-17, 2014**

**Institut Pasteur - Paris, France**

**[www.microbiota-site.com](http://www.microbiota-site.com)**

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**Targeting Microbiota**  
Towards Clinical Revolution

October 16-17, 2014 – Institut Pasteur, Paris, France

*Welcome to Targeting Microbiota World Congress*

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Dear Colleagues,

It is a pleasure to present you the **2<sup>nd</sup> World Congress on Targeting Microbiota** which will be held **at Institut Pasteur, Paris, France on October 16-17, 2014.**

❖ **Microbiota as the forgotten organ**

A large body of evidence show that a diverse population of micro-organisms lives in our skin, mouth, nose, lung and gut, where it plays a strategic role in regulating and possibly controlling human health, well-being, metabolism and diseases.

Microbiotas are maternally transmitted during birth and their composition is influenced by our environment and lifestyle. Intestinal flora is by far the best known microbiota composed of more than 10<sup>14</sup> cells comprising 1000 different species representing a biomass between 1 to 2 kg. Microbiota has probably multiple functions. Its considerable metabolic potential originates from a very high number of genes (the microbiome), which includes unique genes and 150-fold larger coding capacity than the human genome.

The microbiota diversity, its evolutive dynamics and influence on host metabolism open unique opportunities for the identification of new markers of the physiopathological state of each individual. For these raisons, it becomes increasingly important to identify the composition of microbiota and the mechanisms that regulates the host-microbiotal crosstalk. Additionally, targeting microbiota with antibiotics, probiotic or even fecal transplants, aiming to alter the microbiota composition, is considered a promising strategy for the development of new solutions for the treatment of disease.

❖ **Mitochondria-Microbiota Crosstalk: The Intriguing Relationship**

Interestingly, due to the prokaryotic origin of mitochondria, microbiota and mitochondria share commons features. From an evolutionary point of view this common origin may have strongly affected the functional interaction of resident micro-organisms with the host. Moreover, several decades of research on mitochondrial diseases have highlighted a wide and complex spectrum of effects due to mitochondrial impairment, with, however, still unclear links with the nature of affected tissues and organs. Interestingly, the mitochondrial spectrum of diseases for some aspects superimposes on the spectrum of diseases involving the microbiota. Based on these new advances, it becomes important to underscore the mitochondrial – microbiota relationship and possibly consider mitochondria as a particular component of the microbiota. This notion is particularly of interest also for future strategies aiming to the treatment of mitochondrial diseases.

❖ **Aims of Targeting Microbiota 2014**

- ✓ Discuss recent advances, implications, impact and perspectives of microbiota on health and diseases.
- ✓ Research in microbiota is facing important challenges. To date, the most relevant challenge is whether we can modulate and manipulate the human gut microbiota?

- ✓ How diet, food, antibiotics, hormones, prebiotics and fecal microbiota can affect resident microbiota ?
- ✓ How is microbiota defined in health and disease?
- ✓ What is the role of microbiota metabolism on host function and disease?
- ✓ How do microbiota interacts with the host and which function(s) microbiota do control and regulate?
- ✓ Can targeting microbiota prevent or treat inflammation-related diseases, metabolic disorders or CNS diseases?
- ✓ Do mitochondria and microbiota cross-talk and interact?
- ✓ How to avoid speculations and marketing on microbiota not supported by actual data?

#### ❖ **Among Targeting Microbiota 2014 sessions:**

- ✓ Microbiota and Innovations in 2014 : Recent Advances
  - Analysis of Bacterial Species and Metagenome
  - Tools and Innovations
- ✓ Microbiota, Innovative Methods & Biomarkers: From Predictive to Personalized Medicine
- ✓ Mitochondria-Microbiota Crosstalk: The Intriguing Relationship
  - The Redox balance and ROS as modulator of host gene expression
  - Microbiota, oxidative stress and Intestinal redox homeostasis
  - Impact of ROS on microbiota quality
- ✓ The Role of Microbiota in Health and Diseases: The Mechanistic Aspects
- ✓ New Challenges to Prevent and Treat Metabolic Diseases, Cancer, Liver, Kidney, Lung and Inflammation-Related Diseases
- ✓ Microbiota and Nutrition: Impact on Bioavailability and Absorption
- ✓ Microbiota and Longevity: The Missing Link
- ✓ Microbiota and Brain: Opportunity to Regulate Stress and Depression

#### ❖ **Special Session on Fecal Microbiota Transplantation**

A workshop on Fecal Microbiota Transplantation will be held on day 2. Fecal microbiota transplantation is a highly effective cure for many pathological conditions, but increased knowledge of the intestinal microbiota in health maintenance, as well as controlled trials of fecal microbiota transplantation in a wide range of disorders are needed before FMT can be accepted and applied clinically. The legal and regulatory aspects will be also discussed.

**A Network session** will be organized during the 2 days meeting to support exchange and interactions in leading fields linked to microbiota.

Startup and Biotech teams can present their innovations during a dedicated session **“10 minutes to convince”**.

A discussion will be held between speakers, Scientifics and industry sector about Microbiota and medicine of tomorrow.

We hope that you will join us for this dynamic and strategic program and look forward to welcoming you in Paris.

#### **Marvin Edeas**

Chairman of Targeting Mitochondria Task Force Group  
Berlin, Germany

#### **Miria Ricchetti**

Chairman of Local Organizing Committee  
Institut Pasteur, Paris

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*Agenda*

Day 1 - October 16, 2014

07h30 **Welcoming & Registration of Attendees**

9h00 **Welcome Introduction by Targeting Microbiota 2014 Chairmen**

9h05 **Opening of Targeting Microbiota World Congress on behalf of the President of Institut Pasteur,**  
by Prof. Philippe Sansonetti, Institut Pasteur, Paris, France

**Session 1: Microbiota 2014: State-of-the-Art & Visions**

9h10 **Evolution, Cooperation & Conflicts**  
Pierre-Henri Gouyon, National Museum of Natural History, Paris, France

9h40 **Impact of Human Microbiome research on public health**  
Stanislas Dusko Ehrlich, INRA, Metagenopolis, Jouy en Josas, France

10h10 **Interactions of Segmented Bacterium with the Host Immune System**  
Nadine Cerf-Bensoussan, Institut Imagine, Paris, France

**10h40 Break, Posters & Network Sessions**

11h10 **Microbiota and Intestinal Epithelium: Decrypting Signals in the Crypt**  
Philippe Sansonetti, Institut Pasteur, Paris, France

Short Oral Presentations upon abstracts Submission

**A single host-derived glycan arbitrates cooperation between host and microbe**  
Julia Schwartzman, University of Wisconsin, Madison, United States of America

**Alignment-free Analysis of Metagenomic Data with Machine Learning: An Alternative Approach for Studying Microbiota**  
Xuegong Zhang, Tsinghua University, China

**13h00 Lunch Break, Posters & Network Sessions**

**Session 2: Microbiota, Innovative Methods & Biomarkers:  
From Predictive to Personalized Medicine**

14h00 – 14h35

**Metaproteome Display: A novel approach for biomarker discovery in Inflammatory Bowel Disease**  
Jonas Zantow, TU Braunschweig, Germany

**Strain specific lactobacilli-mediated promotion of host juvenile growth: innovative technique brings new evidence from strains belonging to several lactobacilli species.**  
Mélodie Mitchell, IGFL, France

**A Fast And Inexpensive Flow Cytometry-Based Approach to Analyze the Commensal Microbiota**  
Jakob Zimmermann, DRFZ Berlin, Germany

**Microbiota regulation of fungal infectivity**  
Melissa Palmieri, University of Perugia, Italy

## **Gut Microbiota are Related to Parkinson's Disease and Clinical Phenotype**

Filip Scheperjans, Helsinki University Central Hospital, Finland

## **Microbiota as reservoir for antibiotic resistance**

Dmitry Alexeev, RIPCМ, Russian Federation

### **Session 3: Mitochondria-Microbiota Crosstalk: The Intriguing Relationship**

*The Redox balance and ROS as modulator of host gene expression*

*Microbiota, oxidative stress and Intestinal redox homeostasis*

*Impact of ROS on microbiota quality*

#### **14h35 Mitochondria-Microbiota: The Intriguing Relationship**

Marvin Edeas, Targeting Mitochondria Task Force Group, Germany

#### **15h05 Redox Signaling Mediated by Gut Microbiota: A Mechanism of Host-Symbiont Crosstalk**

Andrew Scott Neish, Emory University School of Medicine, Atlanta, USA

#### **15h35 The Enteropathogen *Listeria monocytogenes* Alters host Cell Mitochondrial Dynamics**

Fabrizia Stavru, Institut Pasteur, Paris, France

#### **16h05 Novel strategies of mitochondria targeting by gastric pathogen *Helicobacter pylori***

Laurent Chatre, Institut Pasteur, Paris, France

**16h15 Break, Posters & Network Sessions**

### **Session 4: The Microbiota Role in Health & Diseases: The Mechanistic**

#### **16h45 Targeted modulation of the gut microbiota-host interaction reveals novel mechanisms involved in host response during obesity**

Patrice D. Cani, Louvain Drug Research Institute, Brussels, Belgium

#### **17h15 A functional genomics approach to the understanding of gastro-intestinal colonization by the opportunistic fungal pathogen *Candida albicans***

Christophe d'Enfert, Institut Pasteur, Paris, France

**Short Oral Presentations upon abstracts Submission**

**10 minutes to convince for Biotech & Start-ups teams**

#### **Gut Microbiota Modulate Lung Immunity against Mycobacterial Infection**

Chuan-Sheng Lin, Chang Gung University, Taiwan, Republic of China

#### **Use of Two NGS Approaches for Studying the Evolution of Skin Microbiota after Application of Exogenous Compounds**

Cyrille Jarrin, Libragen, France

#### **Dysbiotic microbiota in liver cirrhosis relates to systemic inflammation**

Valerio Iebba, University of Rome, Italy

#### **KLAST: a new high-performance sequence similarity search tool for metagenome analysis**

Patrick Durand, Korilog SARL, France

#### **OMNigene•GUT: A Novel Fecal Self-Collection, Stabilization and Transport System for Gut Microbiome Studies**

Carlos Merino, DNA Genotek Inc., Canada

#### **Metabiote®: integrated solution for analyses of bacterial microbiota**

Guillaume de Saint Martin, Genoscreen, France

#### **18h30 End of First Day**

#### **20h30 Dinner between Speakers & Attendees in a French typical Restaurant**

*If you are interested to take part to this dinner, please register online.*

## Day 2 - October 17, 2014

### Session 5: New Challenges to Prevent & Treat Metabolic Diseases, Cancer, Liver, Kidney, Lung & all Inflammation Related Diseases

- 9h00** **Uncultivated Bacterial Symbionts: A Rich Resource for Drug Development**  
Joern Piel, ETH Zürich, Zurich, Switzerland
- 9h30** **RORgt + Cells & Symbiotic Microbiota : Regulation of Intestinal immunity**  
Gerard Eberl, Institut Pasteur, Paris, France
- 10h00** **The new paradigm of tissue microbiota to intestinal immune defense in metabolic disease**  
Rémy Burcelin, INSERM, Toulouse, France

#### 10h30 Break, Posters & Network Sessions

- 11h00** **Modulation of the Anticancer Immune Effects of Cyclophosphamide by the Intestinal Microbiota**  
Sophie Viaud, Institut Gustave Roussy, Villejuif, France
- 11h30** **Commensal Microbiota as a Trigger of Spontaneous Autoimmune Demyelination**  
Gurumoorthy Krishnamoorthy, Max Planck Institute of Neurobiology, Munich, Germany
- 12h00** **NOD2-mediated Dysbiosis Predisposition to Transmissible Colitis & Colorectal Cancer**  
Mathias Chamaillard, Institut Pasteur, Lille, France

#### Short Oral Presentations upon abstracts Submission

12h30-13h15

**Gut microbiota modulated by Reg3alpha protects against lethal inflammatory bowel disease in mouse model**

Jamila Faivre, Hôpital Paul Brousse, France

**Gut microbial profile in patients with Chronic Kidney Disease on conservative treatment: Is there relationship with inflammation and markers of cardiovascular risk?**

Denise Mafra, Federal Fluminense University, Brazil

**Inhibition of Hepatic Alcohol Toxicity by Correcting Intestinal Dysbiosis in Mice**

Gladys Ferrere, INSERM, France

**Intestinal Dysbiosis Explains Individual Differences In The Susceptibility To Alcoholic Liver Disease**

Gabriel Perlemuter, AP-HP, Antoine-Béclère University Hospital, France

**Altered gut microbial energy and metabolism in children with non alcoholic fatty liver disease**

Sonia Michail-Ramsy, USC and CHLA, USA

**Early gut colonization with toxin-producing Staphylococcus aureus may protect against the development of eczema**

Forough L. Nowrouzian, Gothenburg University, Sweden

**The microbiota of gallstone patients is enriched with Oscillospira, and further modified by cholecystectomy, without changes in fecal bile acids**

Gophna Uri, Tel Aviv University, Israel

#### 13h10 Lunch Break, Posters & Network Sessions

### Session 6: Microbiota & Brain: Perspectives & Opportunities

- 14h15** **The Microbiome-to-Host Communication Affecting Pregnancy and Fetal Growth in Early Postnatal Life**  
Sven Pettersson, Karolinska Institute, Solna, Sweden
- 14h45** **Mind-altering microorganisms: the impact of the gut microbiota on brain and behaviour**  
Niall Hyland, University College Cork, Cork, Ireland

### Session 7: Microbiota, Nutrition & Ageing

15h15 – 16h00

**Molecular mimicry between proteins from gut bacteria and host peptide hormones at the origin of eating disorders**

Sergueï Fetissov, Rouen University, France

**D-Fagomine balances gut Bacteroidales and reduces weight gain in rats fed a high-fat high-sucrose diet**

Sara Ramos-Romero, Institute for Advanced Chemistry of Catalonia, Spanish Research Council (CSIC), Spain

**Non digestible oligosaccharides modulate the gut microbiota to control the development of leukemia and associated cachexia**

Laure Bindels, Université Catholique de Louvain, Belgium

**Polyphenols and a Lectin-Limited Diet Promote Weight Loss By Altering the Human Gut Microbiome**

Steven Robert Gundry, The Center for Restorative Medicine, United States of America

**Effect of probiotics on gut microbiota and environmental toxins**

Gregor Reid, Lawson Health Research Institute, Canada

**The Microbiota of the Long Living Naked Mole Rat**

Gerd Birkenmeier, University of Leipzig, Germany

**16h00 Break, Posters & Network Sessions**

**Special Session on Fecal Microbiota Transplantation:  
Practical Issues & Regulation**

The aim of this special session is to discuss the latest advances, practical issues, limits of the intestinal microbiota and Fecal microbiota transplantation in various pathologies.

**17h00 Variation in bacterial community stability after fecal microbiota transplantation**

David Berry, University of Vienna, Vienna, Austria

**17h30 Juristical Hurdles and Possibilities for Companies providing Faecal Transplant Services**

Andreas Schwiertz, SymbioVaccin GmbH, Germany

**Alterations of Fecal Microbiota and Metabolic Landscape in Response to Oral or Intravenous Iron Replacement Therapy in Patients with Inflammatory Bowel Diseases**

Thomas Clavel, Technische Universität München, Germany

**Transplantation of Genetically and Diet-induced Obese Gut Microbiota in Conventional Mice Blunts High-Fat Diet-induced Glucose Homeostasis Imbalance**

Matteo Serino, INSERM UMR1048-I2MC, France

**Fecal Microbiota Transplantation for Recurrent Clostridium Difficile Infection in a Child via a Percutaneous Gastrojejunostomy**

Xavier Stephenne, Université Catholique de Louvain-Cliniques universitaires St Luc, Belgium

**Faecal microbiota transplantation: A sui generis biological drug, not a tissue**

Francis Megerlin, Université Paris Descartes, France

**18h30 Discussion & Conclusion of Targeting Microbiota 2014**

**Targeting Microbiota 2014 Awards:**

- ✓ [Scientific Contribution Award 2014](#)
- ✓ [Young Scientific Contribution for Oral and Poster Contribution](#)

**19h00 End of Targeting Microbiota 2014**



**For all request concerning demonstrations,  
exhibition and general information, please contact:**

**John Edwards**

**Targeting Microbiota 2014**

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