THE HUMAN MICROBIOTA & BRAIN DISEASES | 3rd Edition
THERAPEUTIC TARGETS

2 April 2019
Geneva University Hospitals

www.microbiote2019.org
The past two years have seen an exponential increase of lay and scientific publications on the effects of the trillions small guests that each of us more or less willingly hosts even in the most secluded and intimate folds and holes of our body. High time, given that the power house of eukaryotic cells, mitochondria, are but ancient bacteria.

Reports have been published on the association of some bacterial strains in the guts (gut bacteria being by far the most represented microbial community) on human physiology (infant growth....) and somatic diseases (obesity, alcoholism, irritable-bowel syndrome and rheumatoid arthritis) and brain diseases (depression, autism, multiple sclerosis, Parkinson’s disease, Alzheimer’s disease).

Reports have multiplied of animal experiments showing that some natural features (resistance to infections and carcinogenic exposures) can be transferred from one animal to another by gut bacteria transfer. Not only, but it is increasingly clear that a number of environmental events can affect the bacterial composition of gut flora (diet, physical exercise, exposure to cold), that the animals with the modified version of the gut flora acquire specific physical and behavioral features (weight changes, sociability, motor impairments), and that such features can be transferred to non-exposed animals by gut bacteria transfer.

How much of these results is journalism hype and how much is sound science? How close (or how far for that matter) are we from gut flora manipulations in humans to protect from dreaded brain diseases?

The 3rd edition of this conference, which previously attracted 500 participants from Europe, will try and give an answer thanks to a panel of renowned national and international experts on the microbiota and the brain.

**AIMS**
To update physicians and scientists on the latest discoveries on the role of the GMB in neuropsychiatric and neurodegenerative diseases.

To identify leads for microbiota-based interventions for brain diseases.

**PUBLIC**
Physicians, neuroscientists, biologists.

**PRESENTATION FORMAT**
Hybrid: in person and videoconference (Vconf)
13.30 **Welcome Address**
Giovanni B Frisoni, Jacques Schrenzel, Mirko Trajkovski

**MAIN LECTURE | PATHOPHYSIOLOGY**

13.45 **Introduction**  
Mirko Trajkovski

13.50 **Interaction between the microbiota and the immune system**  
Andrew J Macpherson, Bern, Switzerland

14.05 **Q&A**

**ORAL COMMUNICATIONS | PHYSIOLOGY OF THE MICROBIOTA**
*Chair: Mirko Trajkovski*

14.10 **Stability of the human faecal microbiome**  
Andrew T. Chan, Boston, Massachusetts, USA (Vconf)

14.25 **Q&A**

14.30 **Host microbiota constantly control maturation and function of microglia in the CNS**  
Daniel Erny, Freiburg, Germany

14.45 **Q&A**

**MAIN LECTURE | NON - BRAIN DISEASES**

14.50 **Introduction**  
Giovanni B Frisoni

14.55 **Microbiota-fat signaling axis**  
Mirko Trajkovski, Geneva, Switzerland

**Microbiota-based treatment of non-brain diseases: leads for neurodegenerative diseases**  
Jacques Schrenzel, Geneva, Switzerland

15.25 **Q&A**

**ORAL COMMUNICATIONS | ALZHEIMER’S DISEASE**
*Chair: Jacques Schrenzel*

15.35 **Brain amyloidosis, pro-inflammatory gut bacteria, and peripheral inflammation in cognitively impaired elderly**  
Annamaria Cattaneo, Brescia, Italy
Active Invasion of Porphyromonas gingivitis and Infection-Induced Complement Activation in ApoE/Mice Brains
Sim K. Singhrao, Preston, United Kingdom

Microglia-derived ASC specks cross-seed amyloid-β in Alzheimer's disease
Michael Heneka, Bonn, Germany

Amyloid-β peptide protects against microbial infection in mouse and worm models of Alzheimer's disease
Robert D Moir, Charlestown, Massachusetts (Vconf)

Q&A

Break

MAIN LECTURE | FUTURE RESEARCH AVENUES

Introduction
Giovanni B Frisoni

From descriptive taxonomy to functional taxonomy of the microbiota
Stilianos Louca, Vancouver, Canada (Vconf)

Q&A

ORAL COMMUNICATIONS | MICROBIOTA MANIPULATION AND BRAIN HEALTH

Chair: Giovanni B Frisoni

Microbiota modulation counteracts Alzheimer's disease progression influencing neuronal proteolysis and gut hormones plasma levels
Laura Bonfili, Camerino, Italy

Gut microbiota as a target to attain longevity
Patrizia Brigidi, Bologna, Italy

Q&A

Conclusion
Mirko Trajkovski, Jacques Schrenzel, Giovanni B. Frisoni

Cocktail
ORGANIZERS

**GIOVANNI B. FRISONI** (Faculty of Medicine & University Hospitals of Geneva)  
GBF is a clinical neurologist. His recent interests encompass the use of Alzheimer’s imaging and CSF diagnostic biomarkers in the clinic and the role of the gut microbiota in the pathogenesis of Alzheimer’s disease.  
([https://www.unige.ch/medecine/psyat/fr/groupes-de-recherche/frisoni/](https://www.unige.ch/medecine/psyat/fr/groupes-de-recherche/frisoni/))

**JACQUES SCHRENZEL** (Faculty of Medicine & University Hospitals of Geneva)  
JS is Head of the Bacteriology and of the Genomic Research Laboratories ([www.genomic.ch](http://www.genomic.ch)). He is recognised for his work to translate molecular technologies to clinical microbiology.

**MIRKO TRAJKOVSKI** (Faculty of Medicine, University of Geneva)  
MT obtained his PhD at the Max Planck in 2005 and did his postdoctoral work at the ETH Zurich. Group leader and Lecturer in Metabolism and Metabolic Diseases at the University College London (UCL) in 2012. Assistant Professor at the Geneva Faculty of Medicine and awarded with the SNSF professorship. In 2014 he was awarded the prestigious ERC starting grant. His recent work focuses on the effect of the gut microbiota in metabolic diseases.

**SCIENTIFIC BOARD**  
Tristan Bolmont, Annamaria Cattaneo, Jean François Démonet, Stephan Éliez, Taoufiq Harach, Gabriel Gold, Moira Marizzoni, Philippe Millet, Benjamin Tournier.

**POST GRAD CME**  
CME credits will be requested to: Association des médecins du canton de Genève, FAMH Medical Laboratories of Switzerland, Swiss Neurological Society, Swiss Professional Society of Geriatrics, Swiss Society of Gastroenterology, Swiss Society of General Internal Medicine, Swiss Society of Psychiatry and Psychotherapy.
Registration
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Location
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