THE HUMAN MICROBIOTA & BRAIN DISEASES | 4th Edition

THERAPEUTIC TARGETS

7 May 2021
Online Event

PROGRAM & REGISTRATION
www.microbiote-geneva.org
CONTEXT
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 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 4th 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
Fully online. Registered videoconference.
8.00 Welcome Address
Giovanni B. Frisoni

NEURODEGENERATIVE DISEASES AND MICROBIOTA
Moderator: A. Cattaneo
8.15 Understanding relationships between the microbiome and cognition: opportunities for cognitive enhancement
Con Stough, Australia

8.30 Potential Role of Gut Microbiota in ALS Pathogenesis and Possible Novel Therapeutic Strategies
Letizia Mazzini, Italy

8.45 Gut microbiome composition and function in persons with Parkinson's disease
Rejko Kruger, Luxemburg

9.00 Gut microorganisms act together to exacerbate inflammation in spinal cords
Hiroshi Ohno, Japan

9.15 Q&A

MAIN LECTURE | PERSONALISED MEDICINE AND MICROBIOTA
Moderator: J. Schrenzel
9.35 Host Micro Biome Interactions in Health and Disease
Eran Elinav, Israel

10.05 Q&A

10.15 Break

TECHNOLOGICAL BREAKTHROUGH
Moderator: J. Schrenzel
10.30 An innovative organ-on-a-chip platform to study the microbiota–gut–brain axis in neurodegeneration
Carmen Giordano, Italy
Engineered phages as personalized precision antimicrobials
Samuel Kilcher, ETH Zurich

**END OF MORNING SESSION**

MAIN LECTURE | MICROBIOTA AND REURODEVELOPMENT
Moderator: M. Marizzoni
16.30 The maternal microbiome modulates fetal neurodevelopment in mice
Helen Vuong, California
17.00 Q&A

INSIGHT OF BRAIN DISEASES | MICROBIOTA MECHANISTIC INTERACTION WITH ANIMAL MODEL AND CLINICAL STUDIES
Moderator: G. B. Frisoni
17.10 Pathways underlying the transfer of autistic behavior from humans to mice
Sarkis K. Mazmanian, California
17.40 The gut microbiota modulates central and peripheral innate immunity in Alzheimer’s disease
Laura Cox, Massachusetts
17.55 The bidirectional link between CNS and gut microbiota in epilepsy and other neuropsychiatric diseases
Pasquale Striano, Italy
18.10 Microbiota transfer therapy as potential treatment for children with autism spectrum disorder?
Rosa Krajmalnik-Brown, Arizona
18.40 Q&A

CONCLUSION
Giovanni B. Frisoni
ORGANIZERS

GIANNI 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/migrg/fr/groupes-de-recherche/935frisoni/)

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

ANNAMARIA CATTANEO (IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli)
AC is the Head of the Laboratory of Biological Psychiatry, at the IRCCS San Giovanni di Dio- Fatebenefratelli, and Assistant Professor at the University of Milan. She is coordinating -omics and bioinformatics analyses to identify biomarkers associated with illness and treatment response in psychiatric disorders and Alzheimer's Disease. She is leading several national and international projects focused on i) the role of stress or exposure to adversities on the future vulnerability later in life; ii) on the identification of biomarkers of treatment response and iii) on the role of the gut microbiome on central functions.)

SCIENTIFIC BOARD
Moira Marizzoni, Claire Chevalier, 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 and Association Suisse des Neuropsychologues.

INFORMATION
Registration: microbiote-geneva.org