



SYMPOSIUMS

Brain Aging, Neurodegeneration and the Role of Natural Molecules in Maintaining Brain Health

11-13 October 2023

Polish Academy of Sciences Scientific Center in Paris

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Neurodegenerative diseases are complex age-related brain disorders with multiple dysfunctional pathways. Contributing factors, including pathological protein aggregation, synaptic and neuronal network dysfunction, aberrant proteostasis, cytoskeletal abnormalities, altered energy homeostasis, genetic defects, and inflammation, are well-established features of neurodegeneration leading to inevitable cell loss. There is also a growing body of evidence of the involvement of the gut-brain axis consisting of bidirectional communication between the enteric bacteria and the central nervous system via hormonal, neural, and immune pathways. The resulting combined effects of toxic gain and loss of function are suggested to contribute to the multi-hit process driving neurodegeneration. Nevertheless, the mechanism remains unclear, and no effective disease-modifying treatment exists. Therefore, the concept of brain health is emerging as an element of a holistic neuroprotective strategy.


Interest in the identification of neuroprotective compounds and nutritional interventions is increasing. In this respect, polyphenols and their metabolites are considered valuable sources of strengthening neuroprotection, including effects of antioxidants, anti-inflammatory, apoptosis, and autophagy, and are also highlighted through the intestine-brain axis. Given the complexity of the framework, it is essential to quantify the release patterns of the key molecules involved in interconnects in order to operate them effectively. Therefore, more research is needed on natural bioactive compounds with brain health

promotion characteristics for multi-target modulation in preventing neurodegenerative diseases and alleviating their symptoms.


The international conference aimed to create a platform for exchanging ideas by leading scientists working on neurodegenerative diseases and developing neuroprotective approaches using natural compounds and nutritional interventions. Moreover, the role of the gut-brain axis in neurodegeneration and neuroprotection and multimodal approaches for understanding neurodegeneration and holistic neuroprotection have been demonstrated.


THE INTERNATIONAL CONFERENCE

BRAIN AGING, NEURODEGENERATION





**AND THE ROLE OF NATURAL MOLECULES
IN MAINTAINING BRAIN HEALTH**

 Polish Academy of Sciences
Scientific Center in Paris
74, rue Lauriston - 75116
Paris


 11 - 13 OCT 2023
09:00 - 17:00


Organizers:

 PAN
Paris
Centre Scientifique
Académie Polonaise des Sciences

 MIP
Maj Institute of Pharmacology
Polish Academy of Sciences

Partners:

 université
de BORDEAUX

 frontiers | Frontiers in Neuroscience

Affiche

∞ PROGRAMME

Wednesday, October 11 2023

Brain aging and neurodegenerative diseases

- 09:00–9:15 Welcoming Remarks
Dr Eng. Magdalena Sajdak, PAS Scientific Center in Paris, France
Dr Małgorzata Kujawska, Poznań University of Medical Sciences, Poland
- 9:15–10:00 Dr Andrii Domanskyi – Orion Pharma, Helsinki, Finland
Targeting pathological protein aggregation in neurodegeneration: dead end or a new hope?
- 10:00–10:45 Dr Rosanna Parlato – Mannheim Center of Translational Neuroscience Medical Faculty Mannheim Heidelberg University, Mannheim, Germany
Dysregulation of quality control mechanisms in age-related neurodegenerative diseases
- 10:45–11:00 COFFEE BREAK
- 11:00–11:45 Dr Witold Konopka – Laboratory of Neuroplasticity and Metabolism Dept. of Life Sciences and Biotechnology PORT Łukasiewicz, Wrocław, Poland
Neuronal microRNA function in health and disease
- 11:45–12:30 Dr Katarzyna Kuter-Nowak – Dept Neuropsychopharmacology Maj Institute of Pharmacology PAS, Krakow, Poland
Glial cells – a new player in Parkinson's disease animal models
- 12:30–13:45 LUNCH BREAK (lunch at own cost)
- 13:45–14:30 Dr Vittorio Maglione – IRCCS Neuromed, Pozzilli (IS), Italy
Glycosphingolipid metabolism as potential therapeutic target for Huntington's disease

- 14:30–15:15 Prof. Pierre-Marie Lledo – Laboratory of *Genes, Synapses and Cognition* at the CNRS and laboratory of *Perception and Memory* at the Pasteur Institute, Paris, France
The embodied brain
- 15:15–15:30 COFFEE BREAK
- 15:30–16:00 Dr Grzegorz Kreiner – Dept Brain Biochemistry Maj Institute of Pharmacology PAS, Kraków, Poland
CEPHARES – a new R&D center at the Maj Institute of Pharmacology: mission, opportunities, perspectives
- 16:00–16:20 ERC grants – Polish Academy of Sciences – Excellence in Science Department, Anna Urbańska
- 16:20–16:45 NAWA grants – Katarzyna Pietruszyńska
Presentation of available grant programs for scientists by representatives of these organizations
- 16:45 Day One Summary

Thursday, October 12 2023

Effect of nutrition on the brain. AI and nanotechnology in neurodegenerative diseases

- 9:15–16:45 All day poster session
Presenters are expected to mount their posters before the first lecture at the lobby or courtyard (if weathers allows). Poster size: vertical, preferably 70x100 cm, mounted by clips on the prepared stands. Presenting Authors are expected to be at their posters during the lunch break
- 9:15–10:00 Prof. Gerard Clarke – Dept Psychiatry and Neurobehavioral Science Ireland University of Cork, Ireland
Focus on stress and tryptophan metabolism in the microbiota-gut-brain axis

- 10:00–10:45 Prof. Peter McCaffery – Institute of Medical Sciences,
University of Aberdeen, Aberdeen, UK
A vitamin for sustaining the brain in health and disease
- 10:45–11:00 COFFEE BREAK
- 11:00–11:45 Prof. Jean Luc Olivier – CHRU de Nancy, Pôle des
Laboratoires, Service de Biochimie-Biologie Moléculaire-
Nutrition, Nancy, France
*Impact of dietary arachidonic acid on gut-brain axis,
putative contribution to AD*
- 11:45–12:30 Prof. Lydia Giménez Llorca – Universitat Autònoma
de Barcelona, Barcelona, Spain
*Coffee, sugars and fish in normal aging and Alzheimer's
disease under the lens of sex/gender translational behavioral
neuroscience*
- 12:30–14:00 LUNCH BREAK
- 14:00–14:45 Dr Ajeet Kaushik – Florida Polytechnic University, USA –
on-line
Nanobiotechnology is getting into the brain
- 14:45–15:30 Prof. Karol Kozak – Medical Faculty Technical University
Dresden, Dresden, Germany
AIMS ready for AI: neurological data acquisition platform
- 15:30–15:45 COFFEE BREAK (lunch on site, covered by organizers)
- 15:45–16:30 Prof. Martin Hofmann-Apitius – Fraunhofer Institute for
Algorithms and Scientific Computing SCAI, Sankt Augustin,
Germany
*PHARMACOMES: cause-and-effect models linking drugs,
targets and disease mechanisms*
- 16:30–17:00 Dr Małgorzata Chalupowski, Copernicus Institute for the
arts, Sciences and Law of New England
- 17:00 Day Two Summary

Friday, October 13**Neuroprotective role of phytochemicals and their metabolites**

- 9:15–10:00 Prof. Pierre Louis-Teissedre – Institut des Sciences de la vigne et du vin Université de Bordeaux, Bordeaux, France
Effects of tanins, grapes, and wines on chronic and degenerative diseases
- 10:00–10:45 Dr Michaël Jourdes – Institut des Sciences de la vigne et du vin Université de Bordeaux, Bordeaux, France
Phenolic compounds in food diet and their metabolite on degenerative diseases
- 10:45–11:00 COFFEE BREAK
- 11:00–11:45 Dr Małgorzata Kujawska – Poznan University of Medical Sciences Poznań, Poland
Ellagitannins-derived metabolite – Urolithin A as a neuroprotective agent in PD
- 11:45–12:15 Dr G. Kreiner – Dept. Brain Biochemistry Maj Institute of Pharmacology PAS, Krakow, Poland – Conference Summary and closing remarks