EMBO Workshop

Microglia in health and disease

21-24 May 2024
Genoa, Italy
Meeting sustainability

On behalf of the attendees, we have donated 1,750€ to Climeworks Solutions (https://climeworks.com/) to contribute towards the sustainability of our meeting. You can contribute too!

What is Climeworks Solutions?
Climeworks Solutions is a spin-off of the Professorship of Renewable Energy Carriers (PREC) at ETH Zurich, whose research program is aimed at the advancement of the thermal and chemical engineering sciences applied to renewable energy technologies.

How does it work?
Direct air capture supports nature by scaling CO₂ removal. Trees are critical in the fight against climate change for their ability to remove CO₂ from the atmosphere. However, as land space is limited, we also need solutions like direct air capture. On 0.42 acres, our Orca plant can capture up to 4000 tons of CO₂ from the air annually. That's almost 1000x more effective than trees on the same land.

Direct air capture is a technology that captures CO₂ directly from the air. Climeworks combines its direct air capture technology with permanent underground storage (direct air capture and storage = DAC+S) to lock the air-captured CO₂ away so it can no longer contribute to global warming. Direct air capture is one of today's most promising carbon removal technologies. They are continually researching and developing ours with a world-class team of over 150 engineers.

How can I contribute?
You can do a one-time donation or your amount of choice here:
Microglia in health and disease
21-24 May 2024 | Genoa, Italy
Day 1 | 21 May 2024

12:00  Registration

13:15  Opening Remarks

13:30  Keynote lecture
Roles of microglia in early brain development  Sonia Garel

SESSION 1 | Functional Genomics

14:30  DAP12 deficiency and microglia in human early-onset dementia  Marco Colonna

15:00  Human microglia diversity in development and disease  Bart Eggen

15:30  Coffee break & Meet the Speakers

16:00  Microglia in retinal degeneration  Daniel Saban

16:30  Go with your gut: microbiota meet microglia  Marco Prinz

17:00  Developing New Models to Connect Human Microglia States to Function in Health and Disease  Beth Stevens

17:30  Clonal hematopoiesis-associated, age-related motoric deficits caused by murine monocyte-derived microglia  Lior Schori

17:45  Microglial TDP-43 controls myelination and represses cryptic exons of Tyrobp in mice  Anne Claire Compagnon

18:00  Welcome reception & Meet the Speakers

18:30  Poster session 1

20:00  End of the day
Day 2 | 22 May 2024

SESSION 2 | Microglial regulation of neural circuits

9:00  Microglia mitochondrial complex I deficiency during development induces glial dysfunction and early lethality  Bella Mora-Romero

9:15  Chronic lipid accumulation in microglia impairs post-stroke functional recovery  Steffanie Heindl

9:30  Control of neuronal activity by microglial P2Y12 somatic junctions  Adam Denes

10:00  Microglia and wiring of neocortical inhibitory circuits  Morgane Thion

10:30  Coffee break & Meet the Speakers

11:00  Social deficits arising from postnatal immune activation in tuberous sclerosis  Alcino Silva

11:30  Microglial TREM2 in the regulation of synapses and circuits  Michela Matteoli

12:00  Chemogenetic activation of Gq in microglia leads to deficits in synaptic plasticity and neuronal communication  Marie-Luise Brehme

12:15  Microglial DISC1 Prevents Excessive Synaptic Elimination and Cognitive Dysfunctio  Chloë Trippaers

12:30  3Brain symposium: Microglia impact on neuronal network  Alejandra Carreira

12:45  Lunch box

13:00  Nomenclature panel discussion
SESSION 3 | Microglia and metabolic functions
14:00  Sex differences in microglia in autism models  Susanne Wolf
14:30  Exosomal-mediated communication between microglia and neurons Claudia Verderio
15:00  Nutrient-Driven Microglial Metabolic Reprogramming and its Impact on Mouse Behavior  Agnes Nadjar
16:00  Visit to Genoa historical center (upon request)
19:00  Poster session 2 | Apero
20:30  End of the day

Day 3 | 23 May 2024
SESSION 4 | Microglia in Neurodegeneration
9:00  Control of microglial proliferation  Diego Gomez-Nicola
9:30  Disease-Associated Microglia: A Universal Immune Sensor of Neurodegeneration  Ido Amit
10:00  Microglial phagocytosis of myelin debris  Mikael Simons
10:30  Coffee break & Meet the Speakers
11:00  Lysosomes regulate myeloid cell states and immune responses  Leon Tejwani
11:15  Microglial activation mediated by the loss of NPC1 leads to neurodegeneration  Sabina Tahirovic
11:30  Flash talks
   • Using therapeutic anti-Aβ antibodies to modulate the human microglial responses to Aβ pathology  Giulia Albertini
• Fabp5 mediates lipid metabolism to drive microglia phenotype transition and neuroinflammation following stroke Yan Li
• Senescent microglia conserved in aging and Alzheimer’s disease exhibit elevated TREM2 protein levels Noa Rachmian
• SorLA limits inflammatory properties of microglia during glioma progression Paulina Kaminska
• Galectin-3 role in the interaction of microglia and amyloid-beta in vitro Lluís Camprubí
• Multicolor fate mapping of microglia reveals clonal expansion, heterogeneity, and cell-cell interactions after ischemic stroke. Majed Kikhia
• Fibrillar amyloid-beta induces cellular stress and alters protein degradation in microglia Alison Carlisle
• An in vitro Platform to Generate Human Brain Macrophages by Assembling a Vascularized Cerebral Organoid Niche with Hematopoietic Progenitors. Amin Yarmand
• Unraveling Microglial Dynamics in Glioma: a Fate Mapping Approach for the Identification of Disease-Associated Microglia Jiawen Qian
• Manipulation of the mononuclear phagocyte system via CSF1R to understand endogenous mechanisms and augmentation of post-stroke neuroplasticity Colin Crawford

12:30 Lunch box & Meet the Editors

SESSION 5 | Models and Methodologies

13:30 Keynote lecture
Neuronal and glial 3D chromatin architecture informs the cellular etiology of brain disorders Daniel Geschwind

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14:30 Flash talks

- Development of a proteogenomic tool to characterize human microglia at the single cell level. **Verena Haage**
- ARG1-expressing microglia show a distinct molecular signature and modulate postnatal development and function of the mouse brain. **Vassilis Stratoulias**
- A novel organoid-based platform to decode regional diversity of human microglia phenotypes. **Irene Santisteban Ortiz**
- Microglial Rac1 is Essential for Experience-Dependent Cognitive Performance. **Tiago Almeida**
- Conditional knockout of the cytoskeletal proteins ADF and Cofilin-1 in microglia affects microglial morphology and function. **Marie Roggan**
- Microglia derived from ApoE4 iPSCs exhibit cell cycle dependent senescence. **Jasmin Revanna**
- Microglia-derived Insulin-like Growth Factor 1 is critical for neurodevelopment. **Dominika Rusin**
- A human-specific modifier of microglial function. **Carlos Diaz Salazar Albelda**
- Mapping 3D genome architecture of single mammalian microglial cells. **Yunji Seo**
- The Impact of High Fat Diet on Microglial Cells and Social Behavior in Mice: Implications for Diet-Induced Changes in Brain Function. **Sara Cornuti**

15:00 Coffee break & Meet the Speakers
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15:30  iPSC-derived human microglia  Sally Cowley
16:00  Microglial depletion paradigms  Bo Peng
16:30  Tracking microglial states in development and disease  Tristan Li
16:45  Microglia brainization: the shift from initial colonization to adult-like dynamics, morphology and function in the postnatal hippocampus and cerebellum  Marta Pereira-Iglesias

17:00  Poster session 3
18:30  End of the day
20:00  Conference reception and party

Day 4 | 24 May 2024

SESSION 6 | Microglial interaction with other cell types
9:00  Microglia and macrophage ontogeny  Elvira Mass

EMBO YI Lecture
10:00  Early life high fructose exposure disrupts microglia function and impedes neurodevelopment  Justin Perry
10:15  Peripheral nervous system microglia regulate neuronal soma size throughout evolution  Hanjie Li
10:30  Coffee break & Meet the Speakers
11:00  Microglial development in zebrafish  Zilong Wen
11:30  Control of neuronal efferocytosis  Francesca Peri
12:00  Ben Barres Award
12:15  Closing and Departure

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