

Neuroscience Lecture



Friday, 15 March 2024



12.00 o'clock



University of Bern, Department of
Physiology, Seminarraum, 2nd Floor,
Room 259
Bühlplatz 5, 3012 Bern

Multiphoton imaging to understand brain diseases

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Neurologic and neurodegenerative diseases are characterised by neuronal dysfunction. Multiphoton imaging in rodents has greatly advanced our knowledge about dynamic processes of neurons and glia in the brain of living animals. We recently established three-photon imaging, enabling us to follow neuronal and glial dynamics at sub-cellular resolution more than a millimetre deep in the intact brain. In a European collaborative project, we investigated whether the complement pathway is involved in synaptic changes characteristic for schizophrenia. Especially, we analysed whether and how microglia might contribute to these synaptic changes. We found that C4-overexpression lead to decreased synapse densities. Knockout of the CR3-receptor ameliorated or prevented these changes indicating a role for microglia in this process. These data support the view that microglia are important cells for the formation, maintenance and removal of synapses.

Chair: Prof. Dr. Benoit Zuber

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