



University of
Zurich ^{UZH}

Institute for
Regenerative
Medicine • IREM



Colloquium

Clinical Colloquium Regenerative Medicine

Monday, January 28th, 13:00 – 14:00

University of Zurich, Campus Schlieren

Wagistrasse 12, Seminar room 6th floor,

8952 Schlieren

Prof. Sebastian Jessberger

Laboratory of Neural Plasticity, Brain Research Institute, University of Zurich

Elucidating the molecular and cellular dynamics of neurogenesis

Neural stem cells generate new neurons in distinct regions of the mammalian brain throughout life. This process, called adult neurogenesis, is critically involved in certain forms of learning and memory. In addition, failing or altered neurogenesis has been associated with a number of neuro-psychiatric diseases such as major depression and epilepsy. We aim to characterize the cellular and molecular mechanisms regulating neural stem cell activity and behavior. However, the mechanisms underlying life-long neurogenesis on a single cell level remain poorly understood due to a lack of longitudinal observations of individual neural stem cells and their progeny within their endogenous niche. Here we present new approaches to study the cellular principles underlying neurogenesis within the endogenous adult hippocampal niche. Further, we provide evidence for novel molecular mechanisms governing the neurogenic process in the adult brain. Thus, the data presented provide new insights into the cellular principles of hippocampal neurogenesis and identify novel mechanisms regulating the behavior of rodent and human neural stem cells.

Organizer: Prof. Simon P. Hoerstrup / Prof. Roger M. Nitsch

Execution/Chair: Dr. Steffen M. Zeisberger / Dr. Christian Tackenberg

IREM, University of Zurich