

Master Thesis Position – Becher Lab, University of Zurich

Duration: 9-12 Months (start: as soon as possible)

Supervisor: Frederike Ridder (PhD Student)

Research Topic: The role of GM-CSF in the developing Salivary Gland

Our main interest are tissue resident macrophages, which are unique cells that can fulfil organ specific roles in development, homeostasis, and inflammation. If you are interested in the innate immune system and want to learn more about the diversity of macrophages this project promises an exciting master thesis for you.

In the salivary gland (SG), the saliva producing organ composed of the sublingual, submandibular and parotid gland, macrophages make up the predominant part of the immune compartment. Interestingly, the origin and functional repertoire of the CD11c+MHCII+ tissue resident macrophages are not well understood. Recently, phenotypic changes of the tissue resident macrophages have been shown to occur over the course of postnatal development and Csf1 has been introduced as main factor for the maintenance of the SG macrophages. The salivary gland tissue matures fully by postnatal day 30 (P30) and during this postnatal maturation the of CD11c+MHCII+ tissue resident phagocyte compartment is established. Here, we identified a yet undescribed Granulocyte-macrophage colony-stimulating factor (GM-CSF) dependent subset of tissue resident macrophages in the salivary gland which we termed GM-MACS.

Aims:

- Characterization of GM-MACS
- Establish the functional repertoire of GM-MACS in the SG
- Define location and niche of GM-MACS (histology, multiplexing immunofluorescence)
- Optimize/establish methods (histology, different assays, new flow cytometry panels etc.)

We offer:

- Becoming part of an exciting research project
- A Dynamic young and international team in a thriving research environment at the Institute of Experimental Immunology, University of Zurich
- Training in/ Application of various Cutting edge methods (Spectral flow cytometry, multiplex immunofluorescence histology, scRNAseq etc.)
- Weekly group meetings, journal flow and scientific seminars

Requirements:

- Interest in Basic Immunological research
- Highly motivated
- Willing to work with mice
- Experience with mouse work, flow cytometry or histology are a plus

Applications:

Please send your CV and a brief statement of research interest to ridder@immunology.uzh.ch