



Master Thesis Position

Lab of Prof. Burkhard Becher, Institute of Experimental Immunology, University of Zurich

Start: as soon as possible (negotiable), duration: 9-12 months

Supervisor: Jonas Schmid, MD (PhD student)

Research Topic: Prediction of Response to Immune Checkpoint Inhibitor Therapy in Melanoma Patients

We are seeking a motivated master's student to join our project investigating how genetic polymorphisms influence the response to immune checkpoint inhibitors (ICIs) in melanoma patients. This project offers an exciting opportunity to deepen your understanding of human immunology through both experimental work and data analysis.

Immune checkpoint inhibitors (e.g., ipilimumab and nivolumab) are crucial in the treatment of advanced melanoma. In an initial analysis of a melanoma patient cohort, we observed that specific polymorphisms in Fc gamma receptor genes may impact the clinical response to combination ICI therapy. The goal of this project is to validate these findings in an independent cohort.

Additionally, the project will integrate data from polymorphism analysis, clinical patient characteristics, and advanced techniques like mass cytometry and flow cytometry. By doing so, we aim to comprehensively characterize immune features that influence treatment outcomes, ultimately contributing to more personalized treatment strategies for melanoma patients.

You will receive guidance throughout the experimental and data analysis phases, while also being encouraged to explore your own ideas and develop independent research.

Aims:

- Genotyping of the validation cohort and analysis of the treatment response.
- Analysis of mass and flow cytometry data.
- Integration of the different datasets and search for biomarkers that are predictive of treatment response.

We offer:

- The opportunity to join a large, experienced and highly motivated team of researchers.
- Training in cutting-edge technologies (algorithm-guided data analysis, possibility to help with spectral flow cytometry experiments).
- Weekly group meetings, journal flow, scientific seminars.

Requirements:

- Strong interest in immunology and data analysis.
- Basic knowledge of R programming (more advanced skills are a plus) and statistics.
- Experience with PCR experiments and flow cytometry are a plus (but not necessary).

Application:

Please send your CV and a short description of your motivation to:

jonas.schmid@immunology.uzh.ch