

Master Thesis position in Immune Cell Signaling in B Cell Malignancies

Buchner Lab
TranslaTUM – Center for translational Cancer Research
TUM Universitäts Klinikum

Research focus

B cells play a central role in adaptive immunity, but when their signalling programmes become dysregulated, malignant B-cell lymphomas can arise. The Buchner group investigates the molecular mechanisms that support B-cell survival and drive cancer progression, with a focus on Chronic Lymphocytic Leukemia (CLL) and Multiple Myeloma (MM). Our research combines the study of B-cell–intrinsic signalling pathways, the metabolic regulation of malignant B cells, and interactions with immune cells in the tumour microenvironment.

We offer a Master's project focused on immune surveillance in Multiple Myeloma. In our previous work, we identified a nucleotide hydrolase as a potential facilitator of resistance to immune-based therapies in Multiple Myeloma. Building on these findings, this project aims to define the role of nucleotide hydrolases, such as CD39, in cancer cell interactions with the tumour microenvironment and in the establishment of a tumour-supportive milieu.

Methods used

This project will employ a range of *in vitro* approaches to investigate the role of nucleotide hydrolases in Multiple Myeloma. A major component will involve cell culture–based assays and the generation of CRISPR–Cas9 knockout (KO) cell lines, followed by their functional and phenotypic characterisation. Additional methods are expected to include flow cytometry, viability assays, ELISA, and sequencing-based analyses.

Prior experience in cell culture and flow cytometry will be of benefit but is not a prerequisite. As part of our team, you will have the opportunity to gain hands-on experience in multiple useful techniques commonly used in cancer immunology while addressing clinically relevant questions. You will also be trained in data analysis and build a sound knowledge of the complexities of haematological cancers in our weekly meetings.

If you are a highly motivated master's student, curious to learn more about the intricacies of B cell malignancies, please get in touch by sending an **email** with your CV to annika.jasper@tum.de

Start date: flexible. A prior lab rotation to get acquainted with our group is also possible.