



**MASTER THESIS**

**“Orchestration of cancer immunity”**

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# Orchestration of cancer immunity

Conventional type I dendritic cells (cDC1) play a crucial role in the initiation and regulation of anti-cancer immunity. A key step for cancer immunity is the migration of cDC1 to tumor-draining lymph nodes, where cDC1 initiate cancer immunity by presenting tumor associated antigens to so-called cytotoxic T cells. Mengxin Wu's master project aims to understand the mechanisms that regulate the development and functionality of migratory cDC1 in tumors.

## Understanding the development of migrator cDC1

In her first experiments, Mengxin established a tumor-cDC1 coculture system that allows to generate different migratory and non-migratory cDC1 populations in vitro. Mengxin used this model to test the impact of variable experimental conditions, tumor cell-derived factors as well as proinflammatory mediators, on the development of migratory cDC1. In these experiments, she uncovered that neither the availability of tumor cell antigens nor the duration of tumor cell-cDC1 interaction were a major determinant for the migratory potential of cDC1. Rather, specific inflammatory mediators commonly released by cancer-associated cells, so-called cytokines, induced the development of migratory cDC1.

## The meaning of the investigation

This work identifies novel pathways that regulate the ability of cDC1 to exit the tumor tissue and migrate to lymph nodes. Based on Mengxin's findings, future studies will investigate how these pathways might be exploited to promote cDC1-mediated cancer immunity for cancer therapy.

Mengxin Wu is a former student of the Elite Graduate Program "Human Biology – Principles of Health and Disease", she finished her Master thesis within a Junior Research Group "Local immune control of cancer within the tumor microenvironment" funded by the Elite Network of Bavaria.

### Further informations:

<https://www.mhb.uni-muenchen.de/index.html>

<http://www.imi-muenchen.de/research-groups/boettcher/research-group-boettcher.html>

[www.elitenetzwerk.bayern.de](http://www.elitenetzwerk.bayern.de)