University of Basel

DBM Basel
Department of Biomedicine

MASTER THESIS PROJECT: IN BASIC IMMUNOLOGY

Monitoring the role of innate immune cells in eliciting anti-viral memory T cell responses

Contact

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Focus

Innate immune cell biology
Adaptive immune responses
Infection immunology

Background

Innate lymphoid cells (ILCs) are important for immune defense and tissue repair. We have shown that ILCs adapt their functions in a tissue specific manner. For example, while in the gut ILC responses result in tolerance to commensal pathogens, splenic ILCs elicit T helper lymphocyte immunity. Importantly, we recently found that activated ILCs can stimulate both naïve and memory CD4+T helper cells.

Project

MHCII+ ILC3s are almost as efficient as dendritic cells (DCs) in activating lymphocytic choriomeningitis virus (LCMV)-specific memory CD4+T cells in vitro. We will examine the ability of MHCII+ ILC3s in eliciting LCMV-specific memory responses in vivo by performing adoptive transfer experiments in mice. Moreover, we are interested in understanding whether MHCII+ ILC3s have a role in regulating tissue resident CD4+T memory cells (TRM). For this, we will study TRM formation and maintenance following LCMV infection in mice that lack ILC3s. Data obtained from this study will elucidate novel roles ILCs play in regulating CD4+T memory cell responses.

Requirements

Interest in basic immunology and relevant techniques such as flow cytometry, good laboratory, self-management and organizational skills. We are an international team of scientist looking for a highly-motivated team player.

We offer

A friendly and professional environment with close mentorship from a postdoctoral researcher.