

CD8⁺ *Helper* T cells - a new facet of T cell immunity

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T-cell immunity is exerted by CD4⁺ T cells providing help for antigen-presenting cells as well as B cells. CD8⁺ T cells are primarily regarded as cytotoxic effector cells. We have recently identified and characterized a subset of CD8⁺ T cells capable of performing potent helper functions in immunity while lacking cytotoxic properties. These CD8⁺ T cells are characterized by the expression of CD40L, the ‘master’ T helper cell molecule expressed by the majority of activated CD4⁺ T *helper* cells.

In future projects we are focussing on the following questions and aims:

- i. How do CD8 T *helper* cells develop during immune responses *in vitro* and *in vivo*?
- ii. Can we specifically induce CD8⁺ T *helper* cells *in vitro* and *in vivo* for prophylactic / therapeutic induction of protective immunity in the absence of CD4⁺ T *helper* cells?
- iii. How can we distinguish the *in vivo* role of similar effector functions exerted by CD4⁺ versus CD8⁺ T cells during immune reactions?

We are convinced that according to their unique functional capacities CD8⁺ *Helper* T cells are a potent candidate T cell to execute or support effective anti-tumor or anti-pathogen immune therapies.

The project will involve cellular biology, molecular biology technologies and work with experimental infection and tumor models. Our current group consists of 2 PostDocs, 8 PhD students, 1 diploma student, 2 MD students, 2 technicians and one secretary.