

Postdoc (m/f/d)

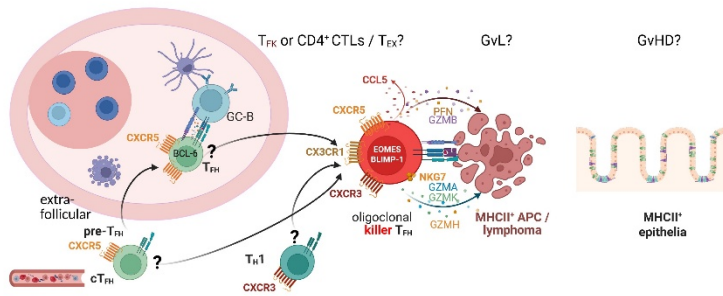
T-cell immunology / tumor immunology
Funded by the Wilhelm Sander Foundation
2 years, possibly 2 additional years



www.pathologie.uni-wuerzburg.de

Recently, we identified a distinct subset of T-follicular helper (T_{FH}) cells with a cytotoxic phenotype and named them "killer T_{FH} (T_{FK})".¹ Single-cell RNA sequencing of human $CD3^+CD4^+CD45RA^-CXCR5^+$ T_{FH} cells revealed that these cells express natural killer cell granule protein 7, granzymes, and perforin. MHC-II-restricted stimulation provoked T_{FK} cell degranulation. T_{FK} cells accumulate in the blood of patients undergoing allogeneic hematopoietic stem cell transplantation (allo-HCT) while receiving calcineurin inhibitors, and especially in patients with chronic graft-versus-host disease (GvHD). Conversely, we found that the frequencies of both cytotoxic $CD4^+$ non- T_{FH} cells and T_{FK} cells increased in lymphoma. These cells could kill malignant B cells when isolated *in vitro*.² This raises questions about their role *in vivo*. Are they involved in the graft-versus-leukemia (GvL) effect mediated by cotransplanted T cells during allo-HCT? Under what conditions do they target MHC-II⁺ tumors? But do T_{FK} cells participate in GvHD?

1. Liang, C., Spoerl, S., Xiao, Y., Habenicht, K.M., Haeusel, S.S., Sandner, I., Winkler, J., Strieder, N., Eder, R., Stanewsky, H., Alexiou, C., Dudziak, D., Rosenwald, A., Edinger, M., Rehli, M., Hoffmann, P., Winkler, T.H., and Berberich-Siebelt, F. (2024). Oligoclonal $CD4^+CXCR5^+$ T cells with a cytotoxic phenotype appear in tonsils and blood. *Commun Biol* 7, 879.
2. Xiao, Y., Haeusel, S.S., Jethva, G., Weber, J., Rosenwald, A., and Berberich-Siebelt, F. (2025). Cytotoxic $CD4^+$ T-follicular cells may mediate killing against lymphoma cells. *Front Immunol* 16, 1657046.



With your help as a postdoc, we will answer these questions using animal models for GvL/GvHD research. We will thereby investigate whether T_{FK} cells originate from T_{FH} cells or if they are a form of pre-exhausted $CD4^+$ T cells. Using gene editing, we will identify the essential molecules necessary for the differentiation and function of T_{FK} cells, which will reveal how they could be targeted for anti-tumor therapy.

Your profile

- Completed PhD
- Immunologist by training
- Experienced with animal models (FELASA B)
- Highly motivated, team-oriented, and committed to scientific excellence
- Proficient in English

Application (single PDF, max. 5 MB)

- CV + publications
- Cover letter
- Two referees' contact
- Bsc/Msc/PhD transcripts
- GDPR applies
- To: apl. Prof. Dr. Friederike Berberich-Siebelt path230@mail.uni-wuerzburg.de
- Full-time (TV-L E13) | Start as soon as possible | Apply by 01.05.2026

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