Universitätsklinikum Tübingen

EBERHARD KARLS UNIVERSITÄT TÜBINGEN

SFB/TR 156

# 3-year PhD position

# RNA SENSING IN SKIN IMMUNITY

**Section Innate Immunity (Alex Weber)**
**Dept. of Immunology, Tübingen**

**Topic |** RNA sensing by innate immune cells can lead to beneficial immune responses required for microbial control during skin infections. On the other hand under certain conditions, e.g. is the skin disease psoriasis, recognition of RNA can fuel detrimental autoimmune responses. Unfortunately, for the context of the skin the mechanistic details of sensing, the precise sources of immunostimulatory RNA in the skin, and the effects of RNA sensing on subsequent adaptive immune responses are incompletely known. These open questions will be addressed in this 3-year PhD project.

**Suggested reading |** Bork F, … , Weber AN. Release of the pre-assembled naRNA-LL37 composite DAMP re-defines neutrophil extracellular traps (NETs) as intentional inflammatory webs. Biorxiv doi.org/10.1101/2022.07.26.499571; Herster F, …, Weber AN. Neutrophil-extracellular trap-associated RNA (naRNA) and LL37 enable self-amplifying inflammation in psoriasis. Nat Commun 2020; Hafner A, … , Eigenbrod T. Crucial Role of Nucleic Acid Sensing via Endosomal Toll-Like Receptors for the Defense of Streptococcus pyogenes in vitro and in vivo. Front Immunol. 2019.

**Methods and skills to learn |** Immunology techniques (PBMC, neutrophil preparation, cell culture assays of cell lines and primary human and mouse immune cells, ELISA, flow cytometry), molecular biology (mutagenesis, PCR, restriction digests, sub-cloning), protein biochemistry (SDS-PAGE, immunoblot, immunoprecipitation, chromatography), microscopy (cell culture and tissue immunofluorescence, live cell), data analysis, scientific writing and presentation.

**The team |** In order to execute this project and complement our laboratory team we hope to **recruit bright and enthusiastic researchers**, including **one PhD student**. You would be part of a **dynamic research group** with a solid track record, and located in an **excellent scientific environment**, the Department of Immunology located on the campus of the University of Tübingen, one of Germany's Excellence Universities. The project is embedded in the multi-disciplinary Transregio SFB 156 skin research network composed of altogether 20 groups from Tübingen, Heidelberg and Mainz, with regular retreats, soft skill training etc. Another PhD student, based in the lab of Alexander Dalpke in Heidelberg, will work closely with us on this project, focusing on the role of RNA sensing in anti-microbial responses in the skin. In our well-funded laboratory you would find a **friendly, well-connected and international (German and English speaking) environment**, and a firm commitment to good supervision and professional development.

**Further information |** Please visit our website following the QR code. **Position to start no later than 01/2024 but ideally as early as 07/2023**, Duration: 3 years, Remuneration: DFG-funded German TV-L E13 65% position. **Application open NOW → apply ASAP**

**Your profile |** MSc degree (or equivalent) in biological sciences with research experience in molecular/cellular biology, microbiology/virology, biochemistry and/or immunology; high motivation to work independently and within a team; good command of the English language (written and spoken); German and international applications encouraged; international applicants will be supported to attend German courses; German skills not required to apply successfully.

**Your application |** Please **apply** electronically to alexander.weber@uni-tuebingen.de with all of the following: **Cover/motivation letter** (max 1 A4), **CV**, **transcripts** and **certificates** of MSc and BSc degree. If available, include **support letter** from a previous supervisor and TOEFL/IELTS English proficiency information. Applications will be reviewed on an ongoing basis and interviews scheduled accordingly.