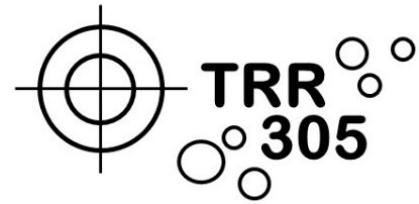


# Seminar series TRR 305 – Striking a moving target: From mechanisms of metastatic organ colonisation to novel systemic therapies



Wednesday, 31 January 2024

14.00 h

**hybrid (on site in Regensburg)**

Seminarroom of the Chair of Experimental Medicine

(H5, 1.OG, 2.13)

University Hospital Regensburg

**Prof. Dr. Maries van den Broek,**

University of Zurich, Institute of Experimental Immunology,  
Tumorimmunology



## Adventures of CD8+ T-cells in the tumor microenvironment

CD8+ T-cells are essential for the immunological control of cancer but their fate in the tumor microenvironment depends on numerous variables, many of which are insufficiently known. Type I interferon is a central factor in the tumor environment and as such, orchestrates many processes. For example, it promotes cross-presentation of antigens to CD8+ T-cells and is essential for the clinical response to radiotherapy. Furthermore, so-called hot tumors - tumors that are heavily infiltrated by T-cells - are characterized by a type-I-interferon-signature. Type I interferons are downstream of the cGAS-STING pathway that is activated by cytoplasmic double-stranded DNA. In contrast to healthy cells, cancer cells contain high concentrations of cytoplasmic double-stranded DNA, which can be even further increased by genotoxic treatments such as radiotherapy. There is evidence that the cGAS-STING pathway promotes immune-mediated cancer restriction, although our new data suggest that T-cell-intrinsic STING signaling compromises their function.

The seminar will address the apparent controversy related to STING signaling in the tumor microenvironment and will propose mechanisms of how genotoxic treatment can drive differentiation of tumor-resident CD8+ T-cells.

Linda Schadt, Colin Sparano, Nicole Angelika Schweiger, Karina Silina, Virginia Cecconi, Giulia Lucchiari, Hideo Yagita, Emilien Guggisberg, Sascha Saba, Zuzana Nascakova, Winfried Barchet, Maries van den Broek, Cancer-Cell-Intrinsic cGAS Expression Mediates Tumor Immunogenicity, *Cell Reports*, Volume 29, Issue 5, 2019, Pages 1236-1248.e7, ISSN 2211-1247, <https://doi.org/10.1016/j.celrep.2019.09.065>.

Tallón de Lara, P., Castañón, H., Vermeer, M. *et al.* CD39<sup>+</sup>PD-1<sup>+</sup>CD8<sup>+</sup> T cells mediate metastatic dormancy in breast cancer. *Nat Commun* 12, 769 (2021). <https://doi.org/10.1038/s41467-021-21045-2>

## Zoom-Meeting-Link

<https://uni-regensburg.zoom-x.de/meeting/register/u5UqdO6hqz0sHdA8H1NRCQZghTAXy4uUNGZN>

Meeting-ID: 617 3795 6674

Kenncode: 219353