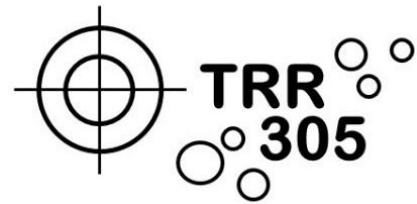


Seminar series TRR 305 – Striking a moving target: From mechanisms of metastatic organ colonisation to novel systemic therapies



Wednesday, 28 February 2024
15:00 h

hybrid (on site in Erlangen)

TRC Auditorium Translational Research Center, Raum 0.010
Schwabachanlage 12, 91054 Erlangen

Prof. Dr. Andreas Koeberle

Michael Popp Institute
Center for Molecular Biosciences Innsbruck (CMBI)



Harnessing Lipidomics: Unveiling Innovative Biogenic Agents against Cancer and Inflammation

Cell-fate decisions involve changes in (lipid) metabolism that significantly influence health and disease. Alongside their fundamental roles in cellular compartmentalization and energy metabolism, various less abundant lipid species exist amidst lipid diversity and are increasingly being discovered as signaling molecules, such as second messengers or lipokines, with pivotal functions in programmed cell death and immune regulation. By exploiting the mechanistic diversity of cytotoxic natural products, we are deciphering lipid-controlled mechanisms through functional multiomics. This strategy reveals auspicious targets for pharmacotherapy, guides lead discovery and advances therapeutic innovation. This talk will introduce our quantitative lipidomics methodology, describe the challenges and nuances of lipidomic interrogation, and demonstrate the power of lipidomics-driven multiomics in chemical biology and molecular pharmacology at the intersection of cancer and inflammation for exemplary projects.

Thürmer M., Gollowitzer A., Pein H, Neukirch K., Gelmez E., Walt, L., Wielsch N., Winkler R., Löser K., Grander J., Hotze M, Harder S., Döding A., Meßner M., Troisi F., Ardelt M., Schlüter H., Pachmayr J., Gutiérrez-Gutiérrez Ó., Rudolph K.L, Thedieck K., Schulze-Späte U., González-Estévez C., Kosan C., Svatoš A., Kwiatkowski M., Koeberle, A., PI(18:1/18:1) is a SCD1-derived lipokine that limits stress signaling. *Nat Commun* **13**, 2982 (2022).
<https://doi.org/10.1038/s41467-022-30374-9>

Tran Thi Van Anh, Alilou Mostafa, Zhigang Rao, Simona Pace, Stefan Schwaiger, Christian Kretzer, Veronika Temml, Carsten Giesel, Paul M. Jordan, Rossella Bilancia, Christina Weinigel, Silke Rummeler, Birgit Waltenberger, Tran Hung, Antonietta Rossi, Hermann Stuppner, Oliver Werz, Andreas Koeberle, From Vietnamese plants to a biflavonoid that relieves inflammation by triggering the lipid mediator class switch to resolution, *Acta Pharmaceutica Sinica B*, Volume 11, Issue 6, 2021, Pages 1629-1647, ISSN 2211-3835,
<https://doi.org/10.1016/j.apsb.2021.04.011>.

Zoom-Meeting-Link:

<https://fau.zoom-x.de/j/65963584896?pwd=RGNCWUhaVzZkcU84bkhZT0wzcExEZz09>

Meeting-ID: 659 6358 4896
Kenncode: 945081