

## Hosting group information for applicants

Name of DKFZ research division/group:

**DKFZ Clinical Cooperation Unit Pediatric Leukemia (A400),  
Group Research Focus: Proteomics, Leukemia and Resistance Mechanisms**

Contact person:

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Group homepage: **yet to be created (new group)**

Please visit our website for further information on our research and recent publications.

### RESEARCH PROFILE AND PROJECT TOPICS:

Our group focuses on understanding the architecture of how cancer cells establishes signaling events that initiate, sustain, and develop multi-layered networks crucial for the survival and in particular, upon drug exposure. We previously uncovered novel signaling pathways that are critical for cancer cells upon targeted therapy (Jayavelu AK, et al Nature 2020). Our goal is study how a cancer cells constructs a network in a system wide manner and the mechanism behind this, with the particular focus on Leukemia. Briefly, cells utilize temporal dynamics of signaling molecules i.e. transient or persistent signals to encode information. Leukemic cells reliant on frequently mutated driver-oncokinas establish signaling not just constitutively but for long duration i.e. persistent phosphorylation signals required for the survival and growth. However, how oncokinas achieve a system wide persistent signaling remains largely unknown. We will utilize cutting edge mass spectrometry technology to address these key questions through multi-level proteomics. Further we will investigate the mechanisms utilizing CRISPR screen, patient samples, and in vivo mouse models. The interested candidate should demonstrate a considerable skills in bioinformatics and proteomics.



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