

Hosting group information for applicants

Name of DKFZ research division/group:

Clinical Cooperation Unit Applied Tumor-Immunity (D120)

Contact person: **Prof. Dr. Dirk Jäger (dirk.jaeger@nct-heidelberg.de)**

Group homepage: <http://www.dkfz.de/en/angewandte-tumor-immunitaet/index.php>

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

RESEARCH PROFILE AND PROJECT TOPICS:

To contribute to the goal of life without cancer our group specializes in unleashing the full potential of the patient's immune system to seek and destroy tumor cells. Due to the mutated nature of cancer cells and the resulting expression of neoantigens, these cells can potentially be detected by the immune system. However, as tumor cells present and secrete signals that create a microenvironment that can inhibit T cells from infiltrating and recognizing tumors, we explore and exploit various possibilities around checkpoint inhibition to neutralize the tumor's immune-evading microenvironment, and have shown that combinatorial immunotherapies can lead to clinical responses in otherwise non-responders (Halama et al., 2016).

We employ and develop advanced analytical methods to characterize tumor host interactions, including whole-slide imaging coupled with automatic image processing, laser microdissection, and multiplex proteomics technologies and develop drugs against novel immunological targets, including cellular therapies, bispecific antibodies, and computer-based algorithms. Further, to determine the prognostic and predictive value of blood based biomarkers we established a platform for multiplex analysis of serum antibodies against tumor-associated antigens (Zörnig et al., 2015). Importantly, we also established a human tumor explant model in our lab, allowing safe testing of novel drugs and drug combinations (Halama et al., Cancer Cell 2016).

We are building on these promising technologies and findings and have initiated several clinical trials.

Potential project: Project in personalized cancer immunotherapy



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