Research profile for applicants

Name of DKFZ research division/group:	***Precision Sarcoma Research Group***
Contact person:	***Priya Chudasama,*** ***priya.chudasama@nct.heidelberg.de***
Group homepage: *Visit this website for further information on current research and recent publications.*	***https://www.dkfz.de/en/praezisions-sarkomforschung/index.php***
Eligibility:	• ***DKFZ Postdoctoral Fellowships***

RESEARCH PROFILE AND PROJECT TOPICS

The Precision Sarcoma Research group funded by the Emmy Noether Program of the German Research Foundation (DFG) has been established with the aim to better understand the molecular alterations underlying tumor development and to identify novel targets for precision cancer therapy. In a project-specific manner, we employ the latest technology platforms at the DKFZ, such as long-read sequencing, single nuclei sequencing, spatial multi-omics, as well as in-house generated tumor multi-omics profiling data (NCT/DKTK/MASTER program) to gain comprehensive insights into the biology of the tumors. Our expanding model system panel and comprehensive toolkit enabling functional genomics investigations (e.g. CRISPR/Cas9 libraries) further enables preclinical investigation of potentially clinically relevant findings. Currently, we are seeking a postdoctoral candidate for the following projects:

1. Characterizing genomic instability-driven tumor immune microenvironment and associated immunotherapeutic targets in sarcoma [DFG funded project, Cooperation partners: Lars Feuerbach, Benedikt Brors (DKFZ), Tom Wei-Wu Chen (National Taiwan University Hospital)]
2. Multi-omics and mechanistic deconvolution of artificial intelligence-based composite signatures generated from foundation models to decipher key processes in metastasis [BMBF funded project, Cooperation partners Jakob Nikolas Kather (TU Dresden), Daniel Truhn (RWTH Aachen)]

Depending on the choice of the project, interest and competence of the candidate, the position can be either fully dry-lab based or a mix of wet-lab and dry-lab projects. We look for the following competencies:

1. Strong background in analyzing and integrating large-scale bulk multi-omics datasets, experience in single-cell and spatial-omics approaches
2. Proficiency in programming languages such as R and Python, bash scripting and deep learning frameworks

3. Ability to acquire and process data from sequencing facilities or public resources, work with HPCs, run, adapt existing pipelines (in-house or nf-core) and develop new ones
4. Profound knowledge of cancer biology, immunology and cancer genomics and associated wet-lab methods (cancer hallmark assays, gene editing approaches)

In any case, the candidate will assume the leadership of the project in a multi-disciplinary collaborative team of molecular biologists (PhD candidate and research assistant) and clinicians by performing, directing and coordinating computational and wet lab research as well as scientific communication.