

## Hosting group information for applicants

Name of DKFZ research division/group:

**Division of Translational Pediatric Sarcoma Research (B410)**

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Group homepage: <https://www.dkfz.de/en/translacionale-paediatriche-sarkomforschung/index.php>

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

### RESEARCH PROFILE AND PROJECT TOPICS:

Our mission is to improve outcome for children, adolescents, and young adults with sarcoma. Our investigations start with the analysis of the patients' tumors, followed by studying patient-derived cell lines and tumors (PDX) using a wide variety of in silico, in vitro, and in vivo techniques. We aim at developing novel therapeutic strategies based on new insights into the molecular mechanisms following three major lines of research:

1) Tumorigenesis in the context of developmental pathways

Dominant oncogenes often interfere with developmental pathways. We are interested in the mechanisms through which oncogenes arrest sarcoma cells in an undifferentiated state via deregulation of key developmental pathways, and how they cooperate to promote tumorigenesis and metastasis.

2) Therapy resistance, tumor heterogeneity, and predictive biomarkers

Resistance to conventional chemotherapeutics is frequent in pediatric sarcomas as a result of considerable tumor-heterogeneity. We strive to illuminate the genetics and biology of tumor-heterogeneity and for identifying predictive biomarkers and targeted therapeutics that may help to overcome chemo-resistance.

3) Interaction of germline variants and somatic mutations

Mutant oncogenes are the major drivers of pediatric sarcomas. However, their uniform expression cannot explain the high diversity of clinical outcomes. Hence, we study the



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mechanisms of how somatic driver mutations interact with (regulatory) germline variants and how this translates into the clinic.

#### Possible Postdoc projects:

We offer ambitious Postdoctoral projects in all above-mentioned research areas. All projects will involve cutting-edge technologies and will offer the candidates to apply a broad spectrum of methods. We will provide a highly motivated scientific environment as part of our collaborative, dynamic and international team.



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