

Hosting group information for applicants

Name of DKFZ research division/group:

Immunotherapy & Immunoprevention (F130)

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Group homepage: <https://www.dkfz.de/en/immuntherapie-immunpraevention/index.php>

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

RESEARCH PROFILE AND PROJECT TOPICS:

The research focus of the group is on the development of epitope-specific immunotherapies of cancer. To define suitable target epitopes we have established a highly sensitive mass spectrometry (MS)-based approach that allows detection of MHC-presented peptides on the cell surface ("targeted immunopeptidomics"). It is currently applied to investigate epitopes derived from oncogenic HPV types, and tumor mutation-derived neoepitopes.

A new postdoctoral fellow in the group should on the one hand familiarize him/herself with the targeted MS approach and apply it to a new tumor entity. The main part of the project would be establishment of a new MS methodology, namely data-independent acquisition (DIA), for immunopeptidomics. DIA yields a digital map of analyzed samples that can then be searched for targets of interest. This requires the generation of a spectral library, but should be extended in a second step to algorithm-based library-free approaches. The proof-of-concept is planned with a well-characterized HPV-positive cell line. The successfully established workflow is expected to form the basis of various internal and external cooperations for neoepitope detection.



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