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**UNIVERSITÄT
BERN**

Faculty of Medicine

Department for BioMedical Research

Benoît Pochon Prize

The Benoît Pochon Prize was established in honour of the memory of Mr. Benoît Pochon, a former PhD student in the Radio-Oncology research group of the DBMR. The prize is awarded yearly to a doctoral student of the Department for BioMedical Research in recognition of the high quality and productivity of their research work.

Benoît Pochon Prize 2023

At DBMR Day for BioMedical Research on July 3, PD. Dr. Michaela Medova announced the winner of the Benoît Pochon Prize 2023.

The prize went to:



Dr. Martina Minoli

Supervisor: Prof. Dr. Marianna Kruithof-de Julio
Co-advisor Prof. Dr. Carsten Riether.

Title of the PhD thesis:

“Developing new Tools for Precision Medicine in Bladder Cancer”.

The DBMR congratulates Dr. Minoli!

Lay Summary:

The recurrence and long-term survival rates of bladder cancer (BLCa) patients have remained constant for decades, suggesting that the current treatment strategy, based on the 'one size fits all' approach, is not optimal for all patients who could benefit from more personalized approaches. The two studies presented in this thesis fit into this context and were aimed at the development of new tools for precision medicine in BLCa. Project 1 aimed to assess the utility of patient-derived organoids (PDOs) in preserving parental tumor (PT) features and testing drug response. BLCa PDOs showed concordance with PT in genetic and molecular characteristics, making them a valuable tool for drug screening. In terms of drug response, we observed heterogeneous responses to standard-of-care (SOC) drugs, with some PDOs showing resistance. By integrating drug response data with genetic information, potential markers of drug sensitivity were identified. Furthermore, analyzing longitudinal samples revealed a correlation between clonal evolution and drug response. This project created a valuable biobank of BLCa PDOs for drug testing. Project 2 aimed to establish and validate a single-cell flow cytometry (FCM) panel to characterize BLCa heterogeneity. Validation on BLCa samples revealed associations between marker expression and clinical and pathological features. Notably, the protein-level expression of markers like FGFR3 differed from transcriptional levels. The FCM panel holds promise for BLCa classification and personalized therapy, particularly when combined with targeted therapies. This project provides a protein-based marker profiling approach to enhance cancer diagnosis, guide personalized therapy, and monitor treatment response.

Published article:

Minoli et al., Bladder cancer organoids as a functional system to model different disease stages and therapy response. *Nat Commun* 14, 2214 (2023). <https://doi.org/10.1038/s41467-023-37696-2>