SWISS BRIDGE

INVEST IN CANCER RESEARCH WORLDWIDE

PRESS RELEASE

Tumor heterogeneity: half a million Swiss francs for two research projects

Zurich, 29.10.2026 – Two researchers from Belgium and Switzerland have been awarded the SWISS BRIDGE Award 2026 for their innovative research projects in the field of tumor heterogeneity. The prize money of CHF 250,000 each is intended to investigate how differences between cancer cells and within the tumor microenvironment influence cancer progression and treatment response.

Tumors are made up of different cells that can vary in their genetic characteristics and biological behavior. This diversity, known as tumor heterogeneity, can occur within a single tumor as well as between primary tumors and metastases. It poses a major challenge for cancer treatment, as different tumor cell populations may respond differently to the same therapy.

This year's call for the SWISS BRIDGE Foundation cancer research award was dedicated to tumor heterogeneity. Research into this field is essential to better understand how differences within and between tumors arise, how they contribute to treatment resistance, and how this knowledge can be used to develop more targeted and effective therapies.

Two studies on tumor heterogeneity win the award

A total of 80 young researchers from Europe applied for the SWISS BRIDGE Award 2026. In a two-stage evaluation process, a distinguished jury ultimately prioritized two research projects. Prof. Abhishek D. Garg from KU Leuven and Prof. Dr. Arianna Baggiolini from the Institute of Oncology Research (IOR), Bellinzona will each receive CHF 250,000 to carry out their promising research projects.

The right timing for immunotherapy in kidney cancer

The study conducted by Prof. Garg and his team focuses on how the time-of-day influences the response of kidney tumors to immunotherapy. Kidney tumors can contain distinct regions with different immune cells, blood vessels, and biological signals, which may respond differently to treatment. At the same time, the immune system is regulated by the body's internal 24-hour clock, known as the circadian rhythm. AI and systems immunology-driven preliminary findings suggest that the optimal timing of immunotherapy may differ depending on the characteristics of the tumor. The researchers will therefore investigate how immune cells and blood vessels are distributed within resistant kidney tumors at different times of day and identify tumor regions associated with treatment resistance. Based on these findings, they aim to identify new treatment targets and develop better-timed immunotherapy combinations for resistant kidney tumors. This innovative research will be accelerated by using a lab-in-the-loop approach and powered by the RETROFIT immunotherapy platform Prof. Garg co-founded within KU Leuven. “Instead of assuming that the same treatment time works for every patient, we want to understand how the timing of immunotherapy can be

adapted to the biology of individual tumors," explains Prof. Garg. The findings, in collaboration with Prof. Dr. Benoit Beuselinck, could contribute to more personalized and effective immunotherapy for kidney cancer patients.

Neuronal mimicry in melanoma brain metastases

Prof. Dr. Baggiolini and her team are investigating why melanoma cells are particularly successful at spreading to the brain. The researchers have found that some melanoma cells in the brain activate genes normally found in neurons and acquire a neuronal-like identity. However, only a subset of cancer cells undergoes this transformation, and it remains unclear why some cells are able to adapt in this way while others are not. Using patient-specific brain organoids and advanced single-cell analyses, the team will investigate which molecular characteristics predispose melanoma cells to acquire this neuronal-like state and whether it helps them survive, resist treatment and form aggressive brain metastases. By tracking individual cancer cells and their descendants over time, the researchers will also determine whether this ability is already present in particular subpopulations or develops only after the cells encounter the brain environment. "We want to understand why some melanoma cells, but not others, are able to acquire this neuronal-like identity and whether this gives them an advantage in the brain," explains Prof. Baggiolini. The findings could help identify particularly adaptable and aggressive melanoma cell populations and reveal new targets for treating brain metastases.

The SWISS BRIDGE Foundation has raised over 50 million Swiss francs for global cancer research over the past 29 years, investing in innovative and high-quality research projects. In addition, the SWISS BRIDGE Award, with at least 500,000 Swiss francs awarded annually, is one of the most prestigious awards for groundbreaking cancer research and enjoys significant national and international recognition.

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