

PRESS & MEDIA RELEASE

Resistance to cancer therapies: A half a Million Swiss Francs for two research projects

Zurich, 24 October 2023 – Two research scientists from Austria and Switzerland will receive the SWISS BRIDGE Award 2023. The award sum of 250,000 Swiss francs each is intended to contribute to a better understanding of the development of therapy resistance in cancer and to find new treatment methods.

Most cancer patients initially respond well to their therapies. Over time, however, resistance to these therapies can develop, causing the treatments to stop working. As a result, the cancer becomes uncontrollable, and the cancer can continue to spread throughout the body. The exact causes and how such therapy resistance develops are not yet sufficiently understood.

For this reason, the SWISS BRIDGE foundation has dedicated this year's award to this topic. A total of 70 young scientists from all over Europe applied for the award this year. In a two-stage evaluation process, a scientific jury of distinguished experts gave priority to two research projects. The investigators, Anna Christina Obenauf from the Research Institute of Molecular Pathology in Vienna and Lukas Flatz from the Cantonal Hospital in St. Gallen, will each receive 250,000 Swiss francs to be invested in the realization of their research projects.

Fighting resistant cells

Anna Christina Obenauf and her team are studying treatment resistance in lung cancer. About 20 to 25 percent of lung cancer cases have mutations in a gene called KRAS. If these mutations are present, novel targeted therapies have been available for treatment for several years. Although these novel therapies initially achieve impressive results, most patients cannot be cured due to the emergence of resistance. The award-winning project aims to study a specific type of cancer cells that can survive therapeutic treatment and eventually become insensitive to the therapy, known as persister cells. "We want to understand why these cells survive and develop resistance, and then find ways to stop them before they become a problem," says Anna Christina Obenauf. To do this, they use cutting-edge technologies that allow them to track the behavior and molecular evolution of individual cancer cells. In the context of new targeted KRAS therapies, they thus hope to discover weak points in the persister cells that can be attacked in combination with other therapies.

Discover markers of resistance in skin cancer

Lukas Flatz and his research group study skin cancers such as squamous cell carcinoma and melanoma. For these cancers, too, a new form of therapy known as immune checkpoint inhibitors has revolutionized treatment in recent years. But here, too, the development of resistance poses a major challenge in treatment. Lukas Flatz and his team have found evidence that a process called tumor differentiation may be responsible for this resistance. In this process, cancer cells lose their specialized properties and become more primitive. This can lead to them being less well recognized and fought by the body's immune defenses and allowing them to spread to other parts of the body. "We believe that the de-differentiation of cancer cells is caused by a process called immune editing, in which the immune system puts pressure on the tumors and changes their properties," says Lukas Flatz. In the project, he and his team want to discover markers for de-differentiation in melanoma and squamous cell carcinoma. This could significantly improve the diagnosis of these cancers and open up new treatment options.

*Over the past 25 years, the **SWISS BRIDGE Foundation** has raised over 45 million Swiss francs for cancer research worldwide and invested in innovative and high-quality research projects. In addition, the SWISS BRIDGE Award of at least 500,000 Swiss francs is presented annually for outstanding research projects. It is one of the most prestigious awards for pioneering cancer research and therefore enjoys a high national and international profile.*

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