

Shield against metastases and genetically protected CAR-T cells: Double honor for Mirco Julian Friedrich

Physician and cancer researcher **Mirco Julian Friedrich** from the **German Cancer Research Center (DKFZ)**, the stem cell research institute **HI-STEM***, and **Heidelberg University Hospital (UKHD)** has received two awards for two independent research projects: The Beug Foundation has honored his novel approach to preventing liver metastases with the **Metastasis Prize 2025**. The **Kind-Philipp Research Prize 2025** recognizes Friedrich's research on T cells, which he modifies to better protect them from attacks by natural killer cells. An initial clinical trial is already testing whether this approach can improve the effectiveness of cellular immunotherapies.

The Hartmut and Margrit Beug Foundation for Metastasis Research is awarding the **Metastasis Prize 2025**, worth €12,000, to Friedrich for his novel preventive approach to liver metastases. In many types of cancer, metastases preferentially develop in the liver because the tumor cells circulating in the blood take advantage of this organ's very favorable microenvironment to settle there. Friedrich and colleagues now plan to reprogram liver cells using mRNA, thereby making the microenvironment impermeable to cancer cells. The aim is to equip the liver with a kind of "protective shield" against metastases. This targeted gene therapy approach is intended to reduce the risk of developing liver metastases. In the long term, this may even allow certain cancer patients to avoid risk-reducing chemotherapy with all its side effects.

Friedrich will receive the **Kind-Philipp Research Prize 2025**, worth 10,000 euros, together with his former colleagues Kevin Lu (now at Essen University Hospital) and Michael Kilian (now at Harvard Medical School). The three researchers discovered that T cells, which recognize and attack cancer cells, are attacked and killed by another player in the immune system, natural killer cells. This poses a problem for cancer patients: The mechanism often prevents tumors from being successfully attacked by the immune system and can weaken the effect of modern cellular cancer immunotherapies such as CAR-T cell therapies.

Using the CRISPR/Cas9 gene editing tool, the three researchers succeeded in modifying T cells so that they are better protected against attacks by natural killer cells. Based on these results, Mirco Friedrich is now leading the clinical trial *PERSIST-B7H6* to investigate for the first time whether such genetically protected CAR-T cells survive longer in the body and can therefore fight cancer more effectively. This NCT bridge study is being conducted at the NCT sites in Heidelberg, West (Essen), and Berlin.

Mirco Julian Friedrich has been a working group leader at the DKFZ and HI-STEM gGmbH since 2025 and is a hematologist and oncologist at Heidelberg University Hospital. After studying medicine and completing his doctorate in Heidelberg and at Harvard Medical School, he was a postdoctoral fellow and EMBO Fellow at the Massachusetts Institute of Technology (MIT).

Friedrichs has received numerous awards for his research, including: Forbes 30 Under 30 - Europe, MIT McGovern Technology Award, DGHO Promotion Prize, Young Investigator Awards from the American Societies for Neuro-Oncology (SNO) and Multiple Myeloma Research (IMS).

*The Heidelberg Institute for Stem Cell Technology and Experimental Medicine (HI-STEM) gGmbH was founded in 2008 as a public-private partnership between the DKFZ and the Dietmar Hopp Foundation.

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Further information

