

Press release

Rethinking Personalized Oncology: CAREOMICS Project Strengthens Individualized Therapy Decisions

Fürth, Munich, Bonn, June 26, 2025 – Each year, around 500,000 people in Germany are diagnosed with cancer for the first time. But not every therapy works equally well for every patient. Individual genetic characteristics play a crucial role in determining how effective a treatment will be and what side effects may occur.

The CAREOMICS project (Comprehensive Approach on Radio- and Pharmacogenomics in Oncological Decision Support) represents an innovative approach to personalized oncology. By specifically analyzing individual genetic characteristics in combination with radiogenomic (RGx) and pharmacogenetic (PGx) data, the project provides a solid foundation for selecting the best possible first-line therapy for each patient—precise, effective, and individually tailored.

Three strong partners are behind this forward-looking joint project: the Department of Radiation Oncology at the TUM University Hospital in Munich, the Institute of Human Genetics at the University Hospital Bonn, and PGXperts GmbH. PGXperts is responsible for project coordination and is developing the AI-powered decision support system designed to facilitate personalized treatment choices.

A key component of the project is a feasibility study that examines how the developed technologies can be integrated into clinical routine.

CAREOMICS pursues two key approaches:

1. Early risk detection

Right at the time of diagnosis, a genetic test is intended to help identify patients who may be particularly sensitive to certain therapies. For this purpose, a specially developed “Onco-Software” from PGXperts is used. It analyzes genetic data and provides physicians with practical decision support based on the latest scientific findings.

2. Personalized therapy supported by artificial intelligence

The goal is to learn from therapies that have been successfully used in the past and to gather insights that enable informed decisions for individually tailored treatments. Using artificial intelligence, treatment data is continuously analyzed to identify which therapies are particularly effective for which patient groups.

The project is funded by the Federal Ministry for Research, Technology and Space (BMFTR) as part of the funding initiative “Optimal Therapies through Data-Driven Decision and Support Systems” with €1.42 million and has a total volume of €1.89 million. The project will run for a duration of 2.5 years.

For more information, please visit: www.pgxperts.com

About PGXperts GmbH

PGXperts GmbH is a software company based in Fürth, Germany, dedicated to the digital health. The company focuses on facilitating Personalized Medication through pharmacogenetics for every patient, everywhere and at any time.

PGXperts GmbH was founded in 2024 as a spin-off of HMG Systems Engineering GmbH. Since 2014, a diverse and multidisciplinary research and development team has been working on translating scientific evidence in pharmacology and pharmacogenetics into the PGXperts system. The system was developed under a certified quality management system in accordance with EN ISO 13485. PGXperts GmbH develops and markets innovative solutions for medication management.

About University Hospital Bonn

Each year, around 500,000 patient treatments take place at the University Hospital Bonn (UKB), which employs approximately 9,500 staff members and has a total balance sheet of €1.8 billion. In addition to 3,500 medical and dental students, around 550 individuals are trained annually in a variety of healthcare professions. According to the *Focus* hospital ranking, UKB ranks first among university hospitals in North Rhine-Westphalia (NRW). In 2023, it secured over €100 million in third-party research funding and has the second-highest case mix index (severity of cases) in Germany. The F.A.Z. Institute ranked UKB first among university hospitals in the category "Germany's Training Champions 2024."

About TUM University Hospital

TUM Klinikum is the university hospital of the Technical University of Munich (TUM). It was established in August 2024 through the merger of the Hospital rechts der Isar and the German Heart Center Munich. Since then, approximately 8,700 employees at both sites have been caring for nearly 69,000 inpatient and day-care patients as well as around 300,000 outpatients each year. As a maximum care hospital with approximately 1,360 beds, TUM Klinikum covers all major medical specialties. It combines healthcare, research, and teaching with the shared mission of advancing medical progress.

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