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DKTK Tübingen: Scientific excellence opens up new possibilities for cancer treatment

This year's Ernst Jung Award for Medicine will be awarded to DKTK scientist Professor Dr. Hans-Georg Rammensee. Rammensee's research has been devoted to developing effective therapies individualized for each cancer patient, and the work of his lab represents important steps toward this goal. As an immunobiologist working at the DKTK partner site in Tübingen, Rammensee is considered a pioneer in the field of individualized cancer immunotherapy. For his outstanding work, Rammensee is now being awarded the Ernst Jung Award for Medicine, which is accompanied by a monetary prize of €300,000 – one of the highest in European medicine. He is a partner in the German Cancer Consortium (DKTK), through which the German Cancer Research Center (DKFZ) in Heidelberg is serving as a core center that is helping link university hospitals all over Germany that are specialized in research and treatment with a focus on oncological diseases.

"I am very pleased about this award," says Rammensee. "It provides an incentive that will help us overcome the many obstacles that still lie ahead. Personalized cancer therapy has made enormous progress in recent years and it is now within reach."

Cancer is diagnosed ever more frequently today. The latest cancer statistics for Germany suggest that every second person will be affected by cancer at some point during his or her lifetime. The chances for new cures and longer survival are better now than ever before. Yet there are more than 200 types of cancer that can affect various types of tissues, and the disease takes its own course in each affected individual. This creates the challenge of tailoring treatments to be effective against the cancer found in a single patient. This is where Rammensee's work comes in. He studies the structure of molecular peptides on the cell surface that have an important function in diseases, because they provide information about the status of the cell's health that can be read by the immune system. If a patient's cancer cells produce unique peptides that scientists can identify, it may be possible to teach the immune system to recognize them as well. This would trigger an immune response that very specifically destroys only diseased cells. Since the cells of individual patients often produce different peptides, the success of therapies will likely depend on finding markers that are unique to each case of cancer.

Many of the findings from Rammensee's lab in Tübingen have already been translated into clinical practice, including treatments based on the development of advanced cancer vaccines. Rammensee has been involved in the German Cancer Consortium (DKTK) since 2011. His main wish for the future is to find ways to accelerate the processes by which the results of research can be translated into novel types of therapies. "We need new infrastructures to ensure that findings from research reach patients as quickly as possible," he says. "This is what makes translational research in medicine so important."

Rammensee has been studying the immune system and ways that it can be used to fight cancer for almost 30 years. He has worked in the USA, in Switzerland and at the German Cancer Research Center (DKFZ) in Heidelberg, Germany. In 1996, he received a professorship for immunology at Tübingen University, where he currently heads the Department of Immunology at the Interfaculty Institute for Cell Biology (IFIZ).

The award is named for the Hamburg ship owner, entrepreneur, philanthropist and benefactor Ernst Jung, who died on January 8, 1976. He was an ardent supporter of the medical sciences and established the Ernst Jung Foundation, based in Hamburg, partly as a means of promoting biomedical research. The Foundation commemorates the anniversary of his death by naming the recipients of several major awards. On the 40th anniversary this year, two additional scientists were honored. The 2016 **Ernst Jung Gold Medal for Medicine** goes to Professor Peter Libby, MD, an American scientist working at Harvard Medical School. Dr. med. Sebastian Kobold, a tumor researcher and Senior Academic Assistant at the University of Munich, was named as the winner of the **Ernst Jung Career Advancement Award for Medical Research**. The awards will be presented at a ceremony in Hamburg on May 21, 2016.

Pictures available at: <http://www.jung-stiftung.de/de/presse-downloads/pressebilder/2016>

In the German Cancer Consortium (DKTK), the German Cancer Research Center (DKFZ) joins up with university hospitals all over Germany. Assembled around a core at the DKFZ in Heidelberg, the consortium unites twenty high-ranked institutes from seven partner sites: Berlin, Dresden, Essen/Dusseldorf, Frankfurt/Mainz, Freiburg, Munich and Tübingen, all specialized in research and treatment focused on oncological diseases. The DKTK was found to promote translational research, bringing together scientists, physicians and associates to work jointly toward the main goal of enhancing the translation of research from bench to bedside. New approaches in prevention, diagnostics and treatment will be applied to cancer in common translational centers at all partner sites. Patients will be recruited at all partner sites for innovative studies to be carried out by the consortium as a whole. All the data from this work will be collected in a universal system. The harmonization of techniques and methods used in laboratories will ensure identical standards for all researchers and physicians in the consortium. A joint infrastructure will make them available for communal research. With the school of oncology, the consortium is additionally dedicating itself to the education of new physicians and scientists. Talented young people will be trained in cancer medicine and translational cancer research in a common effort involving all members. The German Cancer Consortium is a joint initiative of the Federal Ministry of Education and Research, the participating German states, German Cancer Aid and the German Cancer Research Center. It is one of the six German Centers for Health Research (DZG).

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