St. Anna Kinderkrebsforschung
CHILDREN'S CANCER RESEARCH INSTITUTE

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MEDIZINISCHE UNIVERSITÄT WIEN

# Press Release

## Innovative Therapies for Children with Cancer: ITCC Conference for the first time in Vienna

(Vienna, May 23, 2023) **On May 25th, the first two-day conference of the consortium for "Innovative Therapies for Children with Cancer in Europe" (ITCC) will start in Vienna. St. Anna Children's Cancer Research Institute, St. Anna Children's Hospital, and the Pediatric Neuro-Oncology Department of the Medical University of Vienna welcome scientists from all over Europe and the USA. The common goal: Improving the treatment of pediatric cancer in the future.**

Malignant diseases such as cancer continue to be one of the leading causes of death among children and adolescents. The consortium for "Innovative Therapies for Children with Cancer in Europe" (ITCC) is one of the largest collaborative groups in the field of pediatric oncology, driving the development of new therapies for the treatment of cancer in children and adolescents. For the first time, the ITCC is convening in Vienna, and that too for two days.

"We are thrilled to host the first ITCC Scientific Days in Vienna! Together with St. Anna Children's Hospital and the Medical University of Vienna, we have put together an inspiring program and have managed to secure renowned cancer researchers as keynote speakers," says Prof. Dr. Kaan Boztug, Scientific Director of St. Anna Children's Cancer Research Institute, who co-organizes the Scientific Days.

### Understanding the fundamentals to improve treatment

Previously, members of the ITCC would gather once a year in Paris to discuss new scientific findings within their working groups. Now, the conference opens its doors to researchers outside of the ITCC as well and, thanks to the initiative of Austrian ITCC members, takes place in Vienna for the first time. The conference's focus is centered around the three pillars of the ITCC: leukemia and lymphomas, solid tumors, and brain tumors. "The Scientific Days serve as a powerful bridge that brings together young and experienced researchers to surpass boundaries and create new innovations. Scientists and experts connect here to collaborate on improving the treatment of pediatric cancer. The core lies in optimized treatment, while simultaneously delving into the depths of basic research and developing a better understanding," summarizes Priv.-Doz. DDr. Johannes Gojo, from the Pediatric Neuro-Oncology department at the Medical University of Vienna and co-organizer of the ITCC Scientific Days.

### Genetic alterations as the key to tumor therapy

The opening of the conference to non-ITCC members, offers a great opportunity to invite world-class researchers who reflect the three pillars of the ITCC. Professor Sir Mike Stratton, a superstar in tumor genome research, led the Cancer Genome Project at his institute and is currently studying the mutations occurring at the earliest stages of cancer development. "Our aim over many years has been to discover the genes that are frequently mutated in tumors, since these provide important insights into cancer biology and paths to new treatments. Today, we are trying to understand the way in which these mutated genes contribute to the long process of cancer development which takes place silently over many years or decades before the cancer manifests, with a long term view to cancer prevention." explains Stratton. "Since the full decoding of the genome, the focus has shifted to the investigation of the functions and regulations, as well as the misregulations, of specific genes. The goal is no longer to repair a mutated gene, but to correct the consequences resulting from the mutation," adds Boztug.

Mariella Filbin, MD, PhD, an expert in brain tumors and also an ITCC keynote speaker, is precisely focused on this in her research. Through in-depth molecular analyses of high-risk tumors such as high-grade gliomas or ependymomas, specific types of brain tumors, she identifies new therapeutic approaches. She discovered that tumors in children contain more immature cells than in adults. These cells can rapidly proliferate and grow, which likely explains the high aggressiveness in children with these diseases. "Detailed molecular examinations of

tumors at the single-cell level allow us to gain knowledge of the molecular biological properties of individual tumor cells within the tumor tissue. This enables us to derive new, promising therapeutic approaches. Initial tests in this direction are very promising and are currently being investigated in the laboratory," explains Filbin.

**Big Data facilitates treatment decisions**

In cancer research, the challenge often lies in correlating misregulated genes with specific symptoms and corresponding therapeutic options – a task made easier thanks to centralized databases. A prime example of this is the research conducted by Dr. Soheil Meshinchi, an expert in leukemia, particularly acute myeloid leukemia (AML), and a keynote speaker at the ITCC conference. He examined the genetic information of nearly 1,000 children participating in AML studies conducted by the Children's Oncology Group (COG). In the process, he discovered that mutations commonly found in adult AML patients are almost non-existent in pediatric patients. "These results underscore the need for and facilitate the development of age-appropriate targeted therapies for the treatment of pediatric AML," says Meshinchi.

**Understanding the origin of cancer**

Dr. Sam Behjati, who has also been invited as a keynote speaker, is an expert in leukemia, also. "Our research operates at the interface of cancer genomics and single-cell transcriptomics, aiming to decipher the identity and origin of cancer cells." This is crucial because it is not always possible to determine the tissue from which a cancer cell originally developed. An example of this is one of Behjati's studies on the development of acute B-cell lymphoblastic leukemia (B-ALL) in infants. It revealed that these cancer cells originate from a very early developmental stage, unlike other types of ALL, leaving their origin unclear. However, in order to develop therapies, it is important to understand the interaction between leukemia cells and the patients' organisms, as this can provide clues as to how they spread or develop resistance to treatments. This knowledge enables researchers to develop targeted therapeutic approaches that can utilize or influence these specific characteristics of cancer cells, regardless of their tissue of origin.

"When selecting the speakers, it was important to us to have a mixture of basic research and translational early clinical studies," says Boztug. The opening of the conference marks a milestone that enables the introduction of new ideas and findings into the community and promotes a broader dialogue. "We can look forward to high-quality abstracts ranging from molecular foundations to drug screening in the field of pediatric oncology. This year's ITCC conference sets new standards in collaboration and exchange among top-notch researchers to advance progress in pediatric cancer research," says Univ.-Doz. Dr. Michael Dworzak, Deputy Medical Director of St. Anna Children's Hospital and co-organizer of the ITCC Scientific Days.

**About St. Anna Children's Cancer Research Institute**

The St. Anna Children's Cancer Research Institute (CCRI) is an international and interdisciplinary research institution that aims to develop and improve diagnostic, prognostic, and therapeutic strategies for the treatment of children and adolescents with cancer through innovative research. Engaging dedicated research groups in the fields of tumor genomics and epigenomics, immunology, molecular biology, cell biology, bioinformatics, and clinical research, the CCRI works collaboratively to integrate the specific characteristics of pediatric tumor diseases and align the latest scientific-experimental findings with the clinical needs of physicians, ultimately striving to enhance the well-being of young patients. www.ccri.at www.kinderkrebsforschung.at

**About St. Anna Children's Hospital**

Since its establishment in 1837, St. Anna Children's Hospital has evolved into a leading institution in pediatric and adolescent medicine, providing state-of-the-art medical care. In addition to its role as a general children's hospital,

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St. Anna Children's Hospital has gained an excellent reputation nationwide and internationally as a center for the treatment of pediatric blood and tumor diseases (cancer). St. Anna Children's Hospital GmbH is a subsidiary of the Austrian Red Cross, Vienna Regional Association. It is an independent hospital affiliated with the Vienna General Hospital (AKH Wien) and serves as the Clinical Department for General Pediatrics and Pediatric Hemato-Oncology at the University Clinic of Pediatrics and Adolescent Medicine. www.stanna.at

**About Pediatric Neuro-Oncology at the Medical University of Vienna**

The Pediatric Neuro-Oncology department at the Medical University of Vienna (MedUni Vienna) is one of the largest centers for the treatment of central nervous system tumors in children and adolescents in the German-speaking region. The specific needs of children and adolescents with central nervous system tumors are addressed by a multidisciplinary team and networking within the Comprehensive Center for Pediatrics and the Comprehensive Cancer Center. The internationally established research focus at MedUni Vienna aims to enhance the diagnosis and treatment of these diseases using state-of-the-art scientific methods.

MedUni Vienna is one of the most renowned medical education and research institutions in Europe, with a rich tradition. With approximately 8,000 students, it is the largest medical educational institution in the German-speaking region. With over 6,000 employees, 30 university clinics and two clinical institutes, 13 medical-theoretical centers, and numerous highly specialized laboratories, it ranks among Europe's leading research institutions in the biomedical field. MedUni Vienna also houses the Josephinum, a medical history museum. For more information: www.meduniwien.ac.at

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