

Media release, September 17, 2021

## **Dr. Josef Steiner Cancer Research Award 2021 goes to immunologist**

**The Dr. Josef Steiner Cancer Research Award 2021, endowed with 1 million Swiss francs and originally referred to as the “Nobel Prize for Cancer Research”, is awarded to Prof. Dr. med. Andrea Ablasser of the Swiss Federal Institute of Technology (EPFL) in Lausanne. In her work, she discovered new mechanisms by which the immune system recognizes viruses as foreign particles. Interestingly, these mechanisms also apply to cancer cells which behave similarly to viruses with regards to genetic instability and the capacity to evade detection by the immune system. The findings open new perspectives in cancer immunotherapy that may ultimately lead to the development of new therapeutic strategies.**

The Board of the Dr. Josef Steiner Cancer Foundation consisting of physiologists from the Universities of Bern, Geneva and Zürich has announced that Dr. Josef Steiner Cancer Research Award 2021 goes to Prof. Dr. med. Andrea Ablasser. The physician researcher at the Global Health Institute of the Swiss Federal Institute of Technology (EPFL) is receiving the award in recognition of her groundbreaking research in the field of immunorecognition of viruses that are equally important for the detection of cancer cells by the immune system.

The renowned research award, which was donated in the 1980s by the late Dr. Josef Steiner, a pharmacist from Biel/Bienne, is awarded every other year to an excellent project in the field of cancer research and is being staged for the 22<sup>nd</sup> time this year. It includes a research project grant of 1 million Swiss francs (€900,000) and a personal award amounting to 50,000 Swiss francs. Due to the Covid situation, the Award Ceremony at the University of Bern is postponed to a later date.

### **Sensing DNA as a danger signal inside cells**

Every organism must defend itself against viral infection to survive. A vital task of the innate immune system is to detect viruses and activate protective antiviral defense measures. Billions of years ago, a signaling pathway, the so-called cGAS-STING pathway, evolved to carry out precisely this fundamental function. It recognizes microbial DNA as a signal of infection and, in turn, triggers potent antiviral immune responses. However, as it turns out, DNA not only alerts the immune system to viral infection. Instead, “out-of-context” DNA is a hallmark feature of many human pathologies, including cancer, and a central trigger of potent, natural anti-tumor immune responses. Andrea Ablasser and her team contributed to the characterization of the cGAS-STING innate DNA sensing machinery, and they discovered that DNA-dependent innate immunity participates in the elimination of pre-cancerous cells. Moreover, she has developed a pharmacological strategy that enables specific intervention into pathological immune responses driven by the body’s own DNA.

With her project, Andrea Ablasser aims to provide comprehensive new insight into the intricate connections between the innate immune system and cancer evolution. The funds of the Dr. Josef Steiner Cancer Research Award will be used primarily to devise an entire novel immune-therapeutic approach to harness the cGAS-STING pathway to fight cancer more efficiently.

Stephan Rohr, Co-Director of the Institute for Physiology and president of the foundation's board, said about the winner: "Among the many applications for the 22<sup>nd</sup> Dr. Josef Steiner Award, the project by the renowned immunologist Prof. Dr. med. Andrea Ablasser stood out by offering new perspectives in our understanding of the process of immune evasion of cancer cells which is central to the danger posed by these cells to the body. The award enables Prof. Ablasser to further investigate the respective mechanisms and to translate the findings into potentially exciting novel pharmacological treatments."

### **Short biography of Andrea Ablasser**

In 2008, Andrea Ablasser completed her studies in Medicine at the University of Munich where, two years later, she obtained her doctoral degree based on her work done at the University of Bonn in the Institute for Clinical Chemistry and Clinical Pharmacology. In 2014, she became Tenure Track Assistant Professor at the EPFL where she holds a full professorship since 2021. Prof. Ablasser has won many prestigious national and international awards and prizes.

### **The Dr. Josef Steiner Cancer Research Award**

In its efforts to promote cancer research efficiently and sustainably in the spirit of the founder, each Dr. Josef Steiner Cancer Research Award is given to an excellent research project of a young investigator in this field. The Swiss Dr. Peter Cerutti was honored as the first prize winner in 1986. Since then, numerous excellent researchers from Europe, the US and Australia have received the Dr. Josef Steiner Cancer Research Award. It has been issued every other year since 1998. The winning project is supported for a period of four years with a sum of 1 million Swiss francs. It is the award of a private foundation with the biggest cash prize of its kind in the world and was originally referred to as the "Nobel Prize for Cancer Research". The winning project is selected following a multi-stage process in which the scientific quality, the originality, the qualification of the project authors and the feasibility of the proposed studies are all taken into consideration.

### **The Dr. Josef Steiner Cancer Foundation**

Dr. Josef Steiner, former owner of "Dr. Steiner's Pharmacy and Train Station Drugstore" in Biel/Bienne, left behind a huge fortune when he died in 1983. In accordance with his will, the entire fortune was to be used to establish the Dr. Josef Steiner Cancer Foundation. The aim of the foundation is promoting cancer research and honoring highly-deserving scientists in all fields of cancer research. The board of the Dr. Josef Steiner Cancer Foundation consists of full professors from the Departments of Physiology at the Universities of Bern, Geneva and Zürich. In accordance with Dr. Steiner's will, the board is chaired by the member from Bern which is currently Prof. Stephan Rohr. [www.steinerstiftung.unibe.ch](http://www.steinerstiftung.unibe.ch)

### **Further information:**

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