



**Winner 2018**  
Andrea Ablasser,  
Switzerland

## Andrea Ablasser, Eppendorf Young Investigator 2018

*»I am greatly honored to receive the prestigious Eppendorf Award. It recognizes the contributions of several gifted colleagues and students, who all took part in this long, but exciting research effort. We are fascinated by the fundamental mechanisms of innate immune recognition that enable defense against pathogens and hope that our research will in the future aid the development of new treatment options for human diseases.«*

Andrea Ablasser

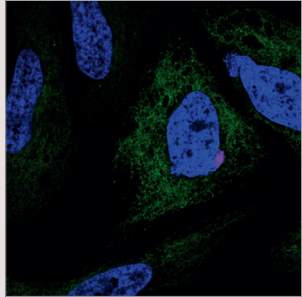
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## Award-Winning Research

The life of any organism depends on the ability of cells to recognize and eliminate harmful microbes. In order to achieve recognition of pathogens, the innate immune system has evolved a sensing strategy that bases on the recognition of nucleic acids – the basic building blocks of “life” itself. Upon activation, these signaling receptors can trigger a variety of distinct effector responses collectively aimed towards maintaining the integrity of the host. Furthermore, innate nucleic acid receptors can also detect stress signals emanating from non-infectious cellular damage.



The innate immune receptor cGAS (red) promotes self-DNA sensing in mammalian cells

Over the last years research in our laboratory has focused on the characterization of the physiological role of the cyclic GMP-AMP synthase (cGAS) Stimulator of interferon genes (STING) pathway – a major pathway for the detection of cytosolic double-stranded DNA. This led us to identify a key function of this pathway in the host response against *Mycobacterium tuberculosis* the causative agent of Tuberculosis. More recently, we have discovered that beyond infection, the cGAS-STING pathway is also promoting cellular senescence, a critical stress response program and a key driver of aging. Intrigued by these findings, our future goal is to further explore the molecular links that exist between the mechanisms of innate immune signaling and those underlying cellular stress responses, including the aging processes. We believe that the realization of this goal may provide new concepts for the treatment of human diseases that are associated with infectious diseases or ageing.

### **Dr. Andrea Ablasser**

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