

From molecular mechanisms of ageing to age-associated diseases

With age, individuals become more prone to serious, long-term illnesses, such as cancer, cardiovascular disease and neurodegeneration. Age-related diseases cause millions of deaths annually and pose enormous challenges for individuals and society. Despite their different clinical symptoms, most of those diseases have common molecular underpinnings, such as genomic instability, telomere attrition, epigenetic alterations and disrupted protein homeostasis.

To understand the process of ageing and to promote healthy ageing, i.e. to delay or prevent the onset of age-associated disease, an interdisciplinary approach targeting molecules, cells, organs and the entire organism is required. In Mainz, ageing has become a strong research focus. Initiatives such as the ReALity (Resistance, Adaptation & Longevity) network and the Centre for Healthy Ageing have been established to bring together basic and clinical researchers to promote healthy ageing and to prevent and treat age-related diseases. PhD Programmes and Master Modules have been developed to train young researchers in ageing research while offering access to cutting-edge technologies, advanced training in scientific, transferable and professional skills as well as career development and mentoring.

Being embedded in this stimulating environment, my lab focuses on RNA/DNA hybrids, telomere biology & genomic instability, the latter two being defined as hallmarks of ageing.

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