



Medical University Vienna, Department of Clinical Pathology

From left to right: Sigurd Krieger, Silvana Geleff, Nicole Huttary

Description of MUWs work:

We are establishing cell isolation and culture techniques for the final application test of the ChipScope nanoLED super resolution microscope. Our aim is to test the microscope by comparing living human lung fibroblasts of healthy donors to donors suffered from idiopathic pulmonary fibrosis (IPF), a severe, chronic, disabling lung disease that cause progressive irreversible lung damage, leading to shortness of breath and terminally to lung transplantation.

In accordance to legislation and ethics MUW already isolated lung fibroblasts from explanted human lungs. In parallel we work with commercially available standard lung fibroblast to investigate possible problems that arise from the microscopy process itself. In close collaboration with the Austrian Institute of Technology and the Technical University Braunschweig in Germany we examine light induced cell stress and cell bio-compatibility of microscope components to enable the construction of a microscope with the lowest possible impact on the cells.

Finally we will compare healthy and IPF diseased human fibroblast on a super resolution level to visualize known differences in the cell structure and function to provide a proof of concept. Moreover we will describe new cellular properties providing us with a better understanding of the disease.

Member profiles:

Silvana Geleff, MD, Pathologist, Lung Medical Specialist, Group Leader

<https://www.meduniwien.ac.at/hp/pathologie/allgemeine-informationen/mitarbeiter/geleff-silvana-prof-dr/>

Sigurd Krieger, Chemist, Technical Assistant

Nicole Huttary, Biomedical Assistant