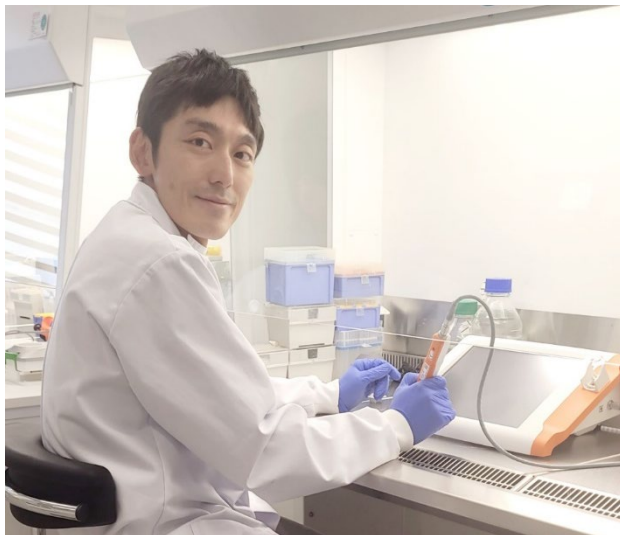


Research in Graubünden

## From Japan to Davos for the research

Uncovering the causes of atopic dermatitis



*Yasutaka Mitamura working with skin barrier measurement device. Image: SIAF*

The global reach of the research institutions, universities and clinics in the Academia Raetica scientific network is also reflected in the professional career of Japanese dermatologist and scientist Yasutaka Mitamura. Since 2019, Mitamura has dedicated himself to researching skin diseases at the Swiss Institute of Allergy and Asthma Research (SIAF) in Davos. He explains how this came about: “An encounter with Professor Cezmi Akdis, the Director of the SIAF, at a conference in Japan in 2018 was the catalyst for my move to Davos. Impressed by his expertise, I took the plunge and emailed him to ask whether it would be possible to work together. I showed my wife, who is also a doctor, some beautiful pictures of Davos and was able to convince her that we should move from Japan to Graubünden with our two daughters.”

Mitamura’s research interests focus in particular on atopic dermatitis, also known as neurodermatitis. This chronic skin disease can occur as early as infancy. It can affect more than 10% of the children and 4% of the adults in Switzerland. The disease is characterized by skin barrier disruption, which allows allergens, toxins, pathogens and pollutants to penetrate unhindered. The result is inflammatory reactions that can lead to redness, swelling, and itching, which can significantly affect the quality of life of those affected.

Last year, Mitamura presented new research findings on the molecular and genetic causes of atopic dermatitis together with researchers from the SIAF and renowned institutions from Switzerland, Germany and the USA. The study used innovative methods such as single-cell transcriptomics and spatial transcriptomics to examine and compare skin samples from atopic dermatitis patients and healthy individuals. Thanks to spatial transcriptomics, Mitamura and his collaborators were able to look closely at the genetic profiles of specific areas of the skin and obtain detailed information on the gene activity of different cell types.

Mitamura explains: “Our research has shown the characters and distributions of atopic dermatitis specific cells such as fibroblasts, macrophages, dendritic cells and T cells in the affected skin areas.” Mitamura emphasizes that these findings could provide potential starting points for the development of new drugs and biomarkers to combat inflammation and measure the severity of the disease more precisely.

Mitamura is also working with Swedish and French companies to develop a new experimental technique for researching the skin barrier: "With our new method, we can show in detail how skin damage occurs and thus develop a personalized therapy."

In the future, Mitamura hopes to set up his own research group at SIAF to further advance his research into skin diseases. With his commitment, Yasutaka Mitamura exemplifies the international excellence of the Academia Raetica network.

Yasutaka Mitamura and Daniela Heinen

#### About the SIAF

Research at the SIAF ([www.siaf.uzh.ch](http://www.siaf.uzh.ch)) focuses on the immunological basis of allergic and asthmatic diseases. The SIAF is affiliated with the University of Zurich and a member of the Life Science Zurich Graduate School.

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*Yasutaka Mitamura*

*Image: Academia Raetica*

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