Awards

# Artificial skin can assist development of treatments for systemic sclerosis

The 3D model developed by Djúlio Zanin, a PhD candidate at the University of São Paulo supported by FAPESP, won an award at an international rheumatology conference.

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Zanin explained his research in a video posted by the Ribeirão Preto Blood Center (*image: screenshot*).

**Agência FAPESP** – A three-dimensional skin model that can mimic what happens to people with systemic sclerosis has been developed with FAPESP's support by biologist **Djúlio Zanin**, a PhD candidate at the University of São Paulo's Ribeirão Preto Medical School (FMRP-USP) in Brazil, in collaboration with Dutch colleagues. A poster presentation on the invention was considered one of the best at the 43rd European Workshop for Rheumatology Research 2024 (**EWRR**) in Italy.

"My project is a laboratory 3D skin model that uses several cellular components including fibroblasts, which are cells present in human skin, and also immune system cells called monocytes. This skin is able to harden and thicken, mimicking what happens to the patient," Zanin says in a video **posted** on the Ribeirão Preto Blood Center's YouTube channel.

Systemic sclerosis, also known as scleroderma, is a rare chronic auto-immune disease of unknown cause. A buildup of collagen and other proteins in various tissues results in degenerative alterations and scarring in the skin, joints and internal organs, as well as blood vessel abnormalities.

As Zanin explained, the accumulation of collagen and other extracellular matrix molecules thickens and stiffens the skin. "The quality of life is significantly impaired. The patient has difficulty moving about and performing basic activities such as teeth cleaning," he said.

The 3D skin model can also help develop treatments by offering an effective alternative to animal testing, he added. "It can help us understand how the disease progresses and combat it with novel medications and therapeutic targets," he said.

Zanin is a member of the team at the **Center for Cell-Based Therapy** (**CTC**), a Research, Innovation and Dissemination Center (**RIDC**) funded by FAPESP and hosted by the Ribeirão Preto Blood Center. He is currently on a sandwich program at Radboud University Medical Center in the Netherlands with a **scholarship** from FAPESP. Thanks to the excellence of his abstract, his project received a grant from the European Alliance of Associations for Rheumatology (EULAR), enabling him to attend the workshop in Italy.

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