

## Nature article presents impact and importance of epithelial barrier damage on a range of common diseases.

STOCKHOLM, SWEDEN, — April 15, 2021 – SciBase Holding AB ["SciBase"] [STO:SCIB], a leading developer of augmented intelligence-based solutions for skin disorders, announced today the publication of a groundbreaking article presenting the "epithelial barrier hypothesis" in Nature Reviews Immunology. The article was written by Professor Cezmi Akdis at the Swiss Institute of Allergy and Asthma Research (SIAF). Prof. Akdis is the key research collaborator in SciBase's product development for skin barrier assessment. The article presents the background for the steep increase in allergic diseases over the last decades, and how this increase is connected to industrialization and modern lifestyle.

Simon Grant, CEO of SciBase *commented* "This article shows just how important the skin and epithelial barrier in general, are in the development of a range of diseases. It also illustrates the potential value of tools for epithelial barrier assessment. This week Prof Akdis and his team in Davos also published an article in Allergy on the use of Nevisense with perhaps the most common barrier-related disease, atopic dermatitis. The Nature article is impressive in its breadth and by extension what it can mean for SciBase's barrier assessment technology. I think this will help followers of SciBase understand why we have included barrier assessment as a key component of our strategy. The article is not just important from a scientific perspective; we also believe it will, together with the previously published article in Allergy, drive interest from researchers and potential industry partners. "

Professor Akdis provides some background. "There has been a steep increase in allergic and autoimmune diseases, reaching epidemic proportions and now affecting more than one billion people worldwide. These diseases are more common in industrialized countries, and their prevalence continues to rise in developing countries in parallel to urbanization and industrialization. Intact skin and mucosal barriers are crucial for the maintenance of tissue homeostasis as they protect host tissues from infections, environmental toxins, pollutants and allergens.

A defective epithelial barrier has been demonstrated in allergic and autoimmune conditions such as asthma, atopic dermatitis, allergic rhinitis, chronic rhinosinusitis, eosinophilic esophagitis, coeliac disease and inflammatory bowel disease. In addition, leakiness of the gut epithelium is also implicated in systemic autoimmune and metabolic conditions such as diabetes, obesity, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis and autoimmune hepatitis. Finally, distant inflammatory responses due to a 'leaky gut' and microbiome changes are suspected in Alzheimer disease, Parkinson disease, chronic depression and autism spectrum disorders.

The article introduces the 'epithelial barrier hypothesis', which proposes that the increase in epithelial barrier-damaging agents linked to industrialization, urbanization and modern life underlies the rise in allergic, autoimmune and other chronic conditions. Furthermore, it discusses how the immune responses to impaired microbiota, which normally acts as a barrier against pathogens, may be involved in the development of these diseases.

The research started in 1998 with the first studies showing mechanisms of eczema, mechanisms of epithelial cell death and continued with more than 60 publications, many major discoveries and one ready to use skin barrier detection instrument.

*The articles can be found at:*

Nature article: <https://www.nature.com/articles/s41577-021-00538-7>.

Allergy article: <https://onlinelibrary.wiley.com/doi/10.1111/all.14842?af=R>.

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*SciBase AB is a global medical technology company based in Stockholm, Sweden that develops unique point-of-care devices for the evaluation of skin disorders such as skin cancer and atopic dermatitis. SciBase's first product, Nevisense, helps clinicians detect melanoma, the most dangerous type of skin cancer. Further development has led to Nevisense also being used as a tool to assess the skin barrier and non-melanoma skin cancer. Nevisense is based on substantial research and has achieved excellent results in the largest clinical study ever conducted on the detection of malignant melanoma. Nevisense is CE marked in Europe, has TGA approval in Australia and an FDA approval (PMA) in the United States. SciBase technology is based Electrical Impedance Spectroscopy (EIS) combined with Artificial Intelligence (AI) algorithms that interpret the varying electrical properties of human tissue to detect malignancies and abnormalities. SciBase Holding AB is listed on First North Growth Market ["SCIB"]. Further information is available at [www.scibase.com](http://www.scibase.com).*

**About SIAF-SFI**

*The Swiss Institute of Allergy and Asthma Research (SIAF) is a department of the foundation Swiss Research Institutes for High Altitude Climate and Medicine Davos (SFI), an affiliated institute of the University of Zurich, and member of the Life Science Zurich Graduate School. SIAF members play leading roles in national and international organizations, such as European Academy of Allergy and Clinical Immunology and in editorial boards and editorships of top Journals in the field of allergy asthma and clinical immunology. At the same time, SIAF fulfills teaching obligations in the University of Zurich. The research activities at SIAF are focused on patient-relevant translational research and the investigation of the immunological principles in the field of skin atopic dermatitis, allergies and asthma to develop approaches for new preventive and curative treatments for patients. SIAF also promotes personalized medicine to develop treatment approaches that are better tailored to the needs of individual patients. These personalized medicine research activities are expected to not only help to find tailor-made therapies but also to develop more precise diagnosis. The continuously growing SIAF is one of the most cited and leading institutes in its area worldwide with more than 50,000 citations and 1,000 original research articles in the last 20 years. SIAF organizes the internationally renowned World Immune Regulation Meeting (WIRM) in Davos every year. SIAF works in close collaboration with the Christine Kühne-Center for Allergy Research and Education (CK-CARE), Davos. Further information is available at [www.siaf.uzh.ch](http://www.siaf.uzh.ch).*