

## Press Release

## Research and Development

**Shiseido Accelerates R&D Efforts to Grow Derma Market in Japan,  
Working with Dermatologists and Other Specialists****Discovery of Methods for Early Prediction of Atopic Dermatitis and Food Allergies in Infants Through  
Collaborative Research with Tohoku University Hospital**

Shiseido conducted a study with the Department of Dermatology and Perinatal Care Center at Tohoku University Hospital (hereinafter, Tohoku University Hospital Department of Dermatology), which found that infants with high levels of specific proteins in the stratum corneum at 2 months old are more likely to develop atopic dermatitis and food allergies by age 3. This finding is expected to lead to the development of diagnostic methods that will enable early prediction of allergy risk in infancy. As more people suffer from atopic dermatitis and food allergies, proper care based on early prediction, which can lower the risk of developing allergies, is seen as potentially improving the quality of life of children and their families. The discovery that took over 10 years from conception was made possible by collaboration with the Tohoku University Hospital Department of Dermatology.

Dr. Maki Ozawa, Research Fellow at the Tohoku University Hospital Department of Dermatology and co-investigator of this study, received the Sanofi Outstanding Paper Award\*1 2025 in the "General Category." The results of this study were also presented at the Annual Meeting of the Japanese Society of Allergology held between October 24–26, 2025.

Shiseido has been conducting collaborative research with the Tohoku University Hospital Department of Dermatology for more than 35 years. Building on these results, it will continue to strengthen "sensitive skin science" through research and development in cooperation with dermatologists and other specialists in Japan and apply this to value development in areas such as cosmetics and services with the aim of realizing healthy beauty throughout each person's life (Figure 1).

\*1 Supported by Sanofi Japan, the Sanofi Outstanding Paper Award is an award that recognizes outstanding contributions in dermatological research and clinical practice, particularly in the field of atopic dermatitis and immunology.

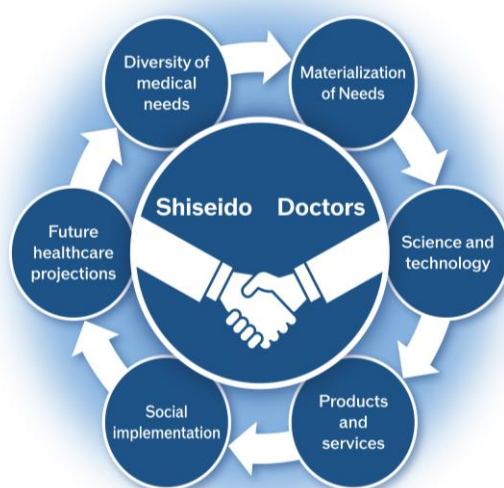


Figure 1. An illustration of what Shiseido aims to achieve through improved research collaboration with dermatologists and other specialists

**Research Background**

Shiseido has long been involved in dermatological research directed at achieving "beautiful and healthy skin" across a wide range of age groups and has promoted the research and development of cosmetics and other products. SCCA1 (also known as Serpin b3) is an essential protein found in the stratum corneum that plays a role in maintaining the homeostasis of the barrier function in the skin. In 2006, Shiseido discovered that this

protein (SCCA1) is a causal factor that reduces the barrier function of the skin. This finding earned the Top Award at the IFSCC,<sup>\*2</sup> the world's largest and prestigious research conference on cosmetics technology. From 2009 to 2010, many research results were published, including the discovery that the protein (SCCA1) can serve as a local severity indicator for the skin in infants with atopic dermatitis.

In 2014, a research paper was published showing that moisturizing the skin from infancy can reduce the incidence of atopic dermatitis by about 30%, highlighting the importance of skin care from an early age.

In recent years, substances absorbed through the skin have been suggested as a factor triggering various allergies. Therefore, in addition to preventing diseases such as atopic dermatitis, there has been a demand for "skin diagnostics" that can be used for early diagnosis and early prediction. To this end, Shiseido has embarked on further research collaboration with Tohoku University Hospital since 2016, aiming to establish non-invasive skin diagnostic techniques that can also be used in infants.

<sup>\*2</sup> IFSCC: The International Federation of Societies of Cosmetic Chemists

### Quantification of Skin Proteins in Stratum Corneum to Predict Risk of Developing Atopic Dermatitis (AD) and Food Allergies (FA)

A prospective study was conducted in 117 infants (62 boys and 55 girls, all 2 months old) with at least one parent who had atopic dermatitis. Dermatologists regularly evaluated the infants, and SCCA1 levels in the stratum corneum were repeatedly measured using the tape-stripping method until the age of three. Statistical analysis of the relationship between the occurrence of atopic dermatitis / food allergies and SCCA1 level revealed that children who developed atopic dermatitis by age 3 had significantly higher SCCA1 levels in the cheek stratum corneum at 2 months compared with those who did not develop atopic dermatitis (Figure 2).

Similarly, infants who later developed food allergies showed significantly higher perioral SCCA1 levels at 2 months compared with those who did not (Figure 3).

Diagnosing atopic dermatitis and food allergies in the first months of life is challenging. As demonstrated in this study, identifying infants at risk as early as two months old may help prevent disease through timely and appropriate care.

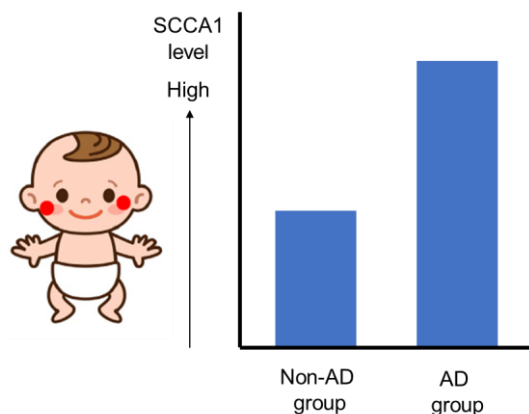


Figure 2. SCCA1 level in the cheeks  
(SCCA1 level at 2 months of ages with non-AD/AD in the first 3 years)

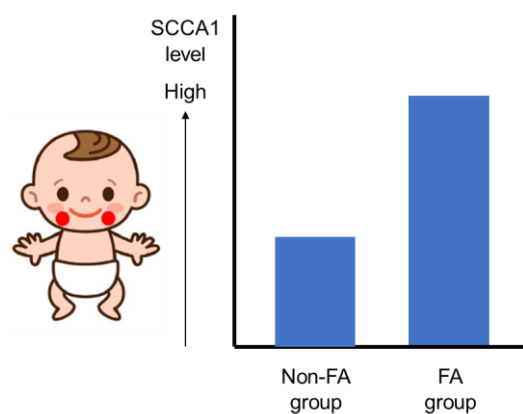


Figure 3. SCCA1 level around the mouth  
(SCCA1 level at 2 months of ages with non-FA/FA in the first 3 years)

### Directions for Future Research

Shiseido intends to combine advanced knowledge and technology gained from collaborative research and apply it to develop new cosmetics and services with a broad focus on sensitive skin and the field of cosmetic dermatology, thereby achieving the healthy beauty of individuals throughout their lifetime.

Additionally, by strengthening "sensitive skin science" through research and development in collaboration with dermatologists and other specialists and addressing the root causes of various sensitive skin symptoms, Shiseido will accelerate the growth of the derma market in Japan and work toward achieving ideal skin and reducing the stress and anxiety of consumers.

## **R&D Strategy**

Shiseido has established three pillars under its R&D philosophy “DYNAMIC HARMONY” to accelerate innovation: “Skin Beauty Innovation: Equity enhancement of brands,” “Sustainability Innovation: Circular value creation,” and “Future Beauty Innovation: Challenges in new areas.” Additionally, Shiseido promotes open innovation and advances new value creation through research alliances with various external organizations. The innovative research outcomes generated from the fusion of Shiseido's advanced science and the knowledge and technology of world-class research institutions are highly regarded academically on a global scale, including at the IFSCC Congress, the world's largest and most prestigious research conference on cosmetic technology.

## **About R&D Philosophy “DYNAMIC HARMONY”**

<https://corp.shiseido.com/en/rd/dynamicharmony/>

## **<Reference>**

The 24th IFSCC Congress 2006, Osaka Congress Award (Podium Presentation, Basic Research Award)  
Identification of a Regulatory Molecule in Keratinocyte Denucleation and Its Relevance to Barrier Disruption  
<https://corp.shiseido.com/en/rd/ifsc/14.html>