MILBON

News Release

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Milbon Awarded First Place in the “Best Poster Presentation” at the 17th Asian Societies of Cosmetic Scientists (ASCS) Conference 2025 in Manila

Atomic-level elucidation of the mechanism by which components suppress thermal aggregation of proteins

Milbon Co., Ltd. (head office: Chuo-ku, Tokyo, President and CEO: Hidenori Sakashita), a manufacturer of salon-exclusive haircare products and cosmetics, was awarded first place in the “Best Poster Presentation” at the 17th Asian Societies of Cosmetic Scientists (ASCS) Conference 2025 in Manila, in cooperation with Professor Kentaro Shiraki of the University of Tsukuba.

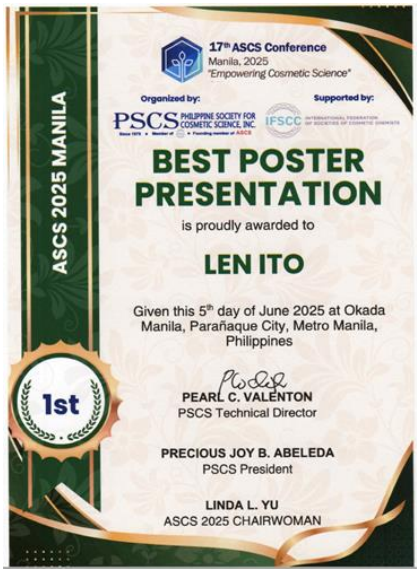
The Asian Societies of Cosmetic Scientists (ASCS) is a collaborative organization of associations of cosmetic scientists in Asia, Oceania, and the Middle East. Its purpose is to promote academic exchanges across regions, and in doing so contribute to the advancement of cosmetic science and the cosmetics industry. As part of this mission, the “Best Poster Presentation” award is presented to recognize outstanding research contributions showcased through poster presentations.

[Award Overview]

Academic conference: 17th ASCS Conference 2025

Title of presentation: 1.17 Å*1 resolution reveals that the aggregation suppressor breaks hydration network on the aromatic surface of protein

Presenter: Len Ito



[Research Overview]

When heat-based treatments such as straight perms and hot perms are performed, proteins inside the hair are denatured and aggregated by the heat. This results in structural deformation and deterioration of hair texture. For that reason, Milbon has been conducting research in cooperation with the University of Tsukuba

on the suppression of thermal aggregation of protein in hair and has discovered effective treatment components. However, this thermal aggregation suppression mechanism has not yet been fully elucidated.

In this research, we aimed to elucidate how thermal aggregation-suppressing components interact with proteins at the atomic level and clarified the mechanism using X-ray crystallography*3 at SPring-8*2.

[Future Vision]

Milbon will utilize this research to explore and develop new components that protect hair from heat damage, while continuing to conduct innovative hair research to establish foundational haircare technologies and develop highly functional products.

≪**Terminology**≫

*1 Å (angstrom)

A unit of length equivalent to one ten-billionth of a meter or 0.1 nanometers.

The bond length of an oxygen molecule (O_2) is approximately 1.21 Å. In this observation, we succeeded in capturing the aggregation suppression mechanism with a higher resolution of 1.17 Å.

*2 Large synchrotron radiation facility SPring-8

Located in Harima Science Park City, Hyogo Prefecture, Japan, SPring-8 is a RIKEN facility that can deliver the world's most powerful synchrotron radiation. The name SPring-8 is derived from Super Photon ring-8 GeV (8 GeV, or 8 giga electron volts). Synchrotron radiation, consisting of powerful beams of electromagnetic radiation, is produced when electron beams— accelerated to nearly the speed of light— are forced to travel along a curved path by a magnetic field.

Reference: SPring-8 website

*3 X-ray crystallography

An analytical method for determining the atomic-level structure of substances. In this research, observation was conducted at a high resolution of 1.17 Å using SPring-8.

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