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Kao Precision Monitoring Commercialized for the First Time Skin Analysis Service Using Skin Surface Lipids-RNA Monitoring Introduced

Kao Corporation is promoting Precision Life Care to identify the precise reasons for health problems through precision monitoring and suggest appropriate solutions from various vantage points. Kao's cosmetics business has now achieved precision monitoring, whose core element employs skin surface lipids- RNA (SSL-RNA) monitoring technology^{*1} to give a detailed picture of the skin's current condition. This service, called Skin Potential Analysis, will be launched in November 2022 and will allow customers to learn about their skin's current condition and suggest the appropriate skin care they require.

*1 Kao news release, June 10, 2019 <https://www.kao.com/global/en/news/rd/2019/20190610-002/>
Kao's original non-invasive analytical method for monitoring RNA—Discovery of the presence of human RNA in sebum

■ Background to Introduction

With the human lifespan now approaching 100 years, there has been increasing focus on living in good health and enjoying good quality of life. It is easy nowadays to obtain information for monitoring skin and health, but with so many options available, consumers must be discerning in selecting the best way of learning about their current condition and methods to help them achieve their beauty goals. Against this background, Kao has targeted precision health care in its K25 medium-term business plan and is emphasizing the importance of precisely identifying individuals' current condition.

The same can be said for the field of beauty. Knowing precise information about one's skin condition is the shortest way to the most appropriate skin care. With this in mind, Kao is introducing precision monitoring via Skin Potential Analysis (Figure 1) for the first time.

■ Skin Potential Analysis Made Possible by Kao Technology

Kao has developed SSL-RNA monitoring technology, in which facial sebum is collected with oil blotting film and RNA extracted from the sebum is exhaustively analyzed. Research up to now has identified nearly 10,000 types of SSL-RNA expression information, which may be useful for identifying atopic dermatitis in infants and toddlers or early-stage Parkinson's disease. It has also been reported that factors within the skin or inside the body responsible for the skin's condition or skin problems, which had been difficult to determine so far, can be predicted and identified at the gene expression level.

In addition, research to analyze the functions of the stratum corneum, the skin's outermost layer responsible for the skin's attractive appearance, is being conducted. Technology (Corneo-spectrum Analysis) has been created to collect all substances information making up the stratum corneum at the molecular level and subject the data to multivariate analysis, making it possible to predict the intrinsic functions of the stratum corneum.

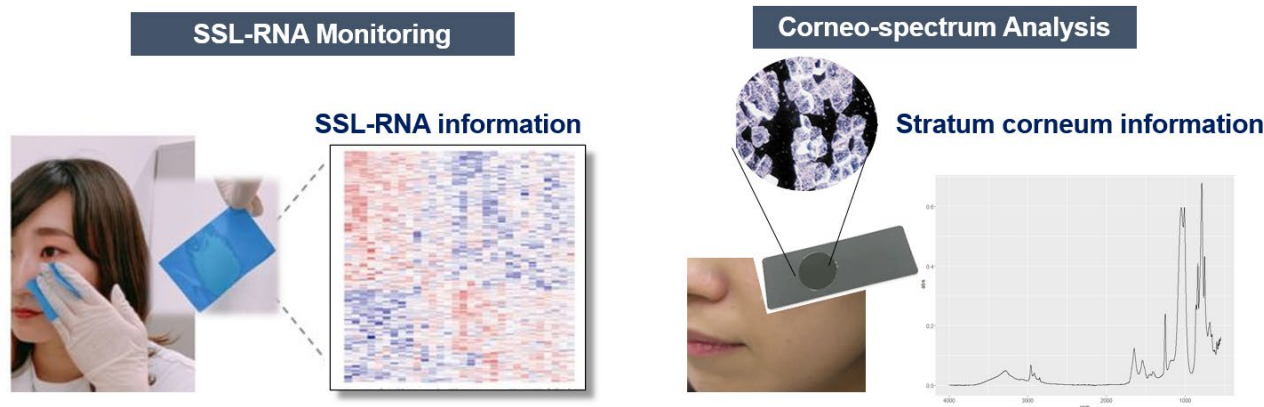


Figure 1: Skin Potential Analysis via precision monitoring technology

■ Categories that Can Be Identified with Skin Potential Analysis

Using the two biological specimens of SSL-RNA and the stratum corneum, Skin Potential Analysis, Kao's most potent tool so far for precise skin analysis, aims to pinpoint what is happening in the skin at the time of analysis. Specifically, it analyzes 12 markers responsible for attractive skin (Figure 2), such as the skin's barrier function, sensitivity to UV rays, and glycation level. Results are compared to the average of the same age groups, giving customers information about their current skin condition.

Categories
Moisture content
Ceramide quality
Corneocyte quality
Multilayered corneocyte level
Barrier function
Melanin content
UV ray damage level
Sensitivity to UV ray damage
Glycation level
Oxidation level
Ability to deliver beauty
Total oxidation level

Figure 2: Skin Potential Analysis categories

■ Advantages of Skin Potential Analysis

The most distinctive feature of Skin Potential Analysis is the use of biological specimens rich in internal skin data not apparent from the skin's appearance. For example, although a person may currently be experiencing dry skin, different approaches will be needed if the condition has different causes. SSL-RNA expression information not only helps confirm the skin condition, it can also infer the reason for dry skin specific to each individual.

If customers themselves collect SSL-RNA and corneum specimens using the appropriate method, this service allows them to obtain detailed information about their skin condition even if there is no store or advisor nearby.

Kao's introduction of precision skin monitoring makes it possible for individual customers to learn about their skin condition and supports them in finding the most appropriate skin care for their needs.

<Related Information>

■ Skin Surface Lipids-RNA Monitoring Technology: Changes Found in Skin Surface Lipids-RNA in Infants with Atopic Dermatitis

<https://www.kao.com/global/en/news/rd/2020/20201016-001/>

■ Skin Surface Lipids-RNA Monitoring Technology: Highly Precise Predictions of Constantly Changing Skin Conditions with Skin Surface Lipids-RNA Monitoring Technology

<https://www.kao.com/global/en/news/rd/2020/20201116-001/>

■ Juntendo, Kao and PFN Discover Skin Surface Lipids-RNA Patterns: Specific to Patients with Parkinson's Disease

<https://www.kao.com/global/en/news/rd/2021/20210921-002/>

About Kao

Kao creates high-value-added products and services that provide care and enrichment for the life of all people and the planet. Through its portfolio of over 20 leading brands such as *Attack*, *Bioré*, *Goldwell*, *Jergens*, *John Frieda*, *Kanebo*, *Laurier*, *Merries*, and *Molton Brown*, Kao is part of the everyday lives of people in Asia, Oceania, North America, and Europe. Combined with its chemical business, which contributes to a wide range of industries, Kao generates about 1,420 billion yen in annual sales. Kao employs about 33,500 people worldwide and has 135 years of history in innovation. Please visit the Kao Group website for updated information.

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