

&lt; Press Release &gt;

**Aderans**

## **Aderans R&D team presents the results of a joint study with Kazusa DNA Research Institute at the 12th World Congress for Hair Research**

### **The project since 2020 to use hair components in medical examinations**

Aderans Co., Ltd. (Head Office: Shinjuku-ku, Tokyo, Japan; Group CEO, Representative Director, and President: Yoshihiro Tsumura), promoting the wellness industry of hair, beauty, and health on a global scale, presented findings from the multi-omics analysis of metabolites in hair at the 12th World Congress for Hair Research (WCHR 2022), which took place at the Melbourne Convention and Exhibition Centre (Melbourne, Victoria, Australia) from Friday, November 18 to Monday, November 21, 2022. The presentation was made as a result of a joint research project with Kazusa DNA Research Institute.

As hair grows, it accumulates biological information which remains stable over time. Leveraging this feature, researchers across the world have been analyzing the components of hair to make them useful as biomarkers. However, hair is yet to be widely used in this area as few reports have comprehensively analyzed its components or evaluated the stability of these components over time.

To facilitate the use of hair components in medical examinations, since 2020, we have been conducting joint research with Kazusa DNA Research Institute, the world's first institute specialized in DNA-related research, exploring ways to accurately measure the components of hair. The presentation at WCHR 2022 was the interim report of this research project. WCHR, which is held every other year, is the leading academic conference on hair research at a global level, bringing together physicians and researchers across the world in the fields of hair and skin to present their research results through lectures and poster sessions.

The oral presentation of our research was given on Sunday, November 20 by Dr. Kazutaka Ikeda (Group Leader, Laboratory of Biomolecule Analysis, Kazusa DNA Research Institute).



**Dr. Ikeda giving the presentation**

## ■ Presentation Overview

### Title

Exploring Health Indicator Molecules in Hair by Multi-omics Analysis

\* Multi-omics is an academic field to conduct comprehensive exploratory research on various molecules that function in organisms. Some examples include lipidomics, metabolomics, and proteomics, that analyze hydrophobic metabolites (lipids), hydrophilic metabolites, and proteins, respectively.

### Presenter

Dr. Kazutaka Ikeda  
Group Leader, Laboratory of Biomolecule Analysis  
Kazusa DNA Research Institute



### Summary

As hair grows, it accumulates biological information which remains stable over time. Leveraging this feature as a potential “memory” device, researchers across the world have been analyzing the components of hair and developing a system to make them useful as biomarkers. However, hair is yet to be widely used in this area as few reports have comprehensively analyzed its components or evaluated the stability of these components over time.

In this study, we performed a multi-omics analysis on the components of hair using the sample of three healthy males and three healthy females. The sample was segmented into roots, the middle part, and tips, which corresponded to one month, six months, and 12 months before the analysis, respectively. We also examined the stability of identified molecules over time.

Through the analysis, we have successfully identified a total of 7,401 molecules, the largest number ever in the world, including 95 through metabolomics, 466 through lipidomics, and 6,840 through proteomics. As for the stability of these molecules, hydrophilic metabolites such as amino acids showed a significant decrease over time. In contrast, many lipids and proteins were relatively stable over time, suggesting their potential as suitable candidates for biomarkers.

Building upon the findings, we will examine correlations between these candidate molecules and other health information, such as blood concentration and medical examination results, aiming to enable the practical use of hair in healthcare systems.

### Overview of the Conference

Title : The 12th World Congress for Hair Research  
Dates : Friday, November 18 to Monday, November 21, 2022  
Venue : Melbourne Convention and Exhibition Centre (Melbourne, Victoria, Australia)  
President : Prof. Rodney Sinclair

As a leading company in the field of total hair solutions, Aderans actively engages in a wide range of hair-related research, such as research and development of functional artificial hair and medical wigs, research related to hair growth and hair scalp care, and research on prevention of chemotherapy-induced alopecia. Through these efforts, we strive to develop “product excellence,” which is one of our management philosophies, and facilitate the development of the hair-related industry.

We believe that disseminating and presenting the findings of such research through academic conferences in Japan and overseas will further advance the hair-related industry. Such initiatives will then contribute to solving hair problems facing many people as well as improving their physical and mental health, thereby helping us fulfill our corporate social responsibility (CSR).

#### < Media Inquiries >

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