

&lt; Press Release &gt;

National University Corporation Oita University

Aderans Co., Ltd.

**Oita University, a National University Corporation, & Aderans Co., Ltd.****Establish an endowed chair for the prevention of chemotherapy-induced alopecia (CIA) and for hair regrowth based on the results of the 10-year joint research****Industry-academia collaboration on CIA prevention and hair regrowth using an alpha-lipoic acid derivative, Oita University's research focus**

National University Corporation Oita University (Oita City, Oita; President: Seigo Kitano) and Aderans Co., Ltd. (Head Office: Shinjuku-ku, Tokyo, Japan; Group CEO, Representative Director, and President: Yoshihiro Tsumura) have agreed to establish an endowed chair "Department of Advanced Medical Research and Development for Cancer and Hair [Aderans]," focusing on the prevention of hair loss as a side effect of chemotherapy and on hair regrowth. The agreement was signed on Wednesday, June 15, 2022, and the program will be officially launched on Friday, July 1, 2022.

Since 2013, Oita University and Aderans have worked together in industry-academia joint research as an initiative to address chemotherapy-induced alopecia (CIA). This joint effort has produced a number of results including the basic research clarifying the mechanism of CIA (published in the academic journal "Cancer Science"), a multi-center joint clinical trial showing the effect of an alpha-lipoic acid (ALA) derivative in promoting recovery from CIA (published in the academic journal "Breast Cancer Research and Treatment"), and the development of scalp care lotion using the ALA derivative.

In recent years, approximately one million people are diagnosed with cancer annually, and one in two people will develop cancer at some point in their lives. The advancement of cancer treatment has enabled people to live longer after the diagnosis, with an increasing number of patients engaging in work while receiving outpatient care. It is therefore becoming more important than ever, academically and socially, to improve cancer patients' quality of life (QOL), to develop care that addresses appearance-related symptoms including hair loss, as well as to promote research and development in new health management and medical care while effectively using hair. Chemotherapy is one of the three pillars of cancer treatments, along with surgery and radiation therapy, and many patients suffer from hair loss it causes. However, we have yet to find adequate preventive measures. Through our joint efforts in basic and clinical research, we have clarified the mechanism of CIA and shown the effectiveness of the ALA derivative against CIA. The results of these efforts are expected to help improve many cancer patients' QOL in the future.



From Left: Professor Masafumi Inomata, President Seigo Kitano (both from Oita University), and Yoshihiro Tsumura (President, Aderans, Co., Ltd.)

To explore new ways to apply the ALA derivative, to develop international measures to address medical needs within and outside Japan, and to address various needs in society such as better QOL of cancer patients, Oita University and Aderans concluded that it would be effective to further develop the existing framework of our joint research and establish an endowed chair as a research and educational institution. This has resulted in the agreement on the establishment of the chair.

## ■ About the Establishment of the Endowed Chair

### ➤ **Comment from Dr. Seigo Kitano (President, Oita University)**

Oita University strives to contribute to social development by making available its achievements in education and research. This endowed chair will help us build a research and development system through industry-academia collaboration, allowing us to facilitate and share hair-related research aiming to improve cancer patients' QOL. These activities will then enable us to develop more practical products and to nurture human resources capable of managing care for cancer patients' symptoms. The establishment of this endowed chair is therefore extremely meaningful.

[President Kitano profile]

Dr. Kitano was born in Wakayama Prefecture, graduated from Kyushu University School of Medicine in 1976, became Professor at the Department of Surgery I, Oita University Faculty of Medicine in 1996, and has been serving as President of Oita University since October 2011. Specializing in gastroenterological surgery, endoscopic surgery, and gastroenterological endoscopy, he is a renowned expert in laparoscopic gastrointestinal surgery. Since he performed the first laparoscopic cholecystectomy in western Japan in 1990, he has played a leading role in its technical development and broader application, aiming to expand this technique to the overall gastrointestinal surgery. He is President Emeritus of the Japan Society for Endoscopic Surgery and the Japanese Society of Gastroenterological Surgery. He also serves as President of many organizations including the Asian Medical Education and Training Support, the Japan Looks Care Medical Association, and the International Caremake Association.

### ➤ **Comment from Dr. Masafumi Inomata (Director, the Endowed Chair; Professor, Department of Gastroenterological and Pediatric Surgery, Oita University Faculty of Medicine)**

Since our university has engaged in advanced research on CIA, establishing the new endowed chair in collaboration with the global company can help us make further progress in treatment development. Through this joint effort, we should be able to make significant contributions to helping millions of patients suffering from CIA, not only in Japan but also across the globe.

[Professor Inomata profile]

Dr. Inomata was born in Oita Prefecture, graduated from Oita University Faculty of Medicine in 1988, became Associate Professor at the Department of Comprehensive Surgery I, Oita University Faculty of Medicine in 2010, and has been serving as Professor at the Department of Gastroenterological and Pediatric Surgery in the Faculty since 2014. He has also been Deputy Director of the Oita University Hospital and Head of the Clinical Training Institute for Interns since 2020. He has received numerous awards including the Best Award in 2011 at the 7th OOTR (Organisation for Oncology and Translational Research) conference in Hong Kong for his study on side effects of chemotherapy, the Hirayama Award in 2012 at the 17th Annual Meeting of Japan Society of Clinical Hair Restoration in Tokyo, and the Masanori Shimoyama Award from JCOG (Japan Clinical Oncology Group) in 2015. He specializes in gastroenterological surgery, surgical oncology, and endoscopic surgery.

### ➤ **Comment from Yoshihiro Tsumura (Representative Director and President, Aderans)**

Aderans Co., Ltd. has actively conducted industry-academia joint research with universities in pursuit of "product excellence," a key component of our management philosophy, aiming to put smiles on the faces of people with hair problems around the world. These efforts have resulted in numerous innovations, mainly in research on hair and skin care. In the research with Oita University, we have worked closely with President Kitano, Professor Inomata, as well as other members of Oita University and medical institutes affiliated with the research association Cancer, Inflammation and Alpha-Lipoic Acid. The research started based on the superb function of the new ALA derivative and found highly reliable evidence, which has helped us contribute to society. We have decided to establish the endowed chair to further refine and move forward with the research, with a strong commitment to providing as much support as possible to people suffering from CIA and other skin problems caused by chemotherapy.

## ■ Hair-Related Activities by Oita University and Aderans

### ➤ **Oita University**

In 2009, Oita University Faculty of Medicine launched research to identify relationships between antioxidants and diseases such as cancer and inflammation, under the leadership of Professor (currently

University President) Seigo Kitano at the Department of Comprehensive Surgery I and Professor Takayuki Noguchi at the Department of Anesthesiology and Intensive Care Medicine. In 2010, they founded the research association called Cancer, Inflammation and Alpha-Lipoic Acid. In this process, research was also conducted to improve effects of cancer treatment and to reduce side effects of chemotherapy.

Chemotherapy can affect normal cells as well, and its side effects include hair loss that occurs in rapidly proliferating hair matrix cells. Since hair loss during chemotherapy can create psychological distress, it is one of the reasons for patients to refuse this treatment. Developing methods to prevent and treat hair loss has therefore been considered an urgent issue to address. In response, we have conducted research at Oita University, mainly through basic experiments on a novel antioxidant (the ALA derivative), including its relationships with in vivo metabolism and with control of redox (oxidation and reduction) as well as its effects on antioxidation and prevention of CIA. These efforts are led by Associate Professor (currently Professor) Masafumi Inomata and other members of the Department of Gastroenterological and Pediatric Surgery, in collaboration with the Department of Anesthesiology and Intensive Care Medicine, Department of Dermatology, Department of Molecular Pathology, and General Clinical Research Center.

Also, our clinical trial with breast cancer patients receiving chemotherapy has shown that applying the ALA derivative on a scalp is effective in promoting recovery from CIA.

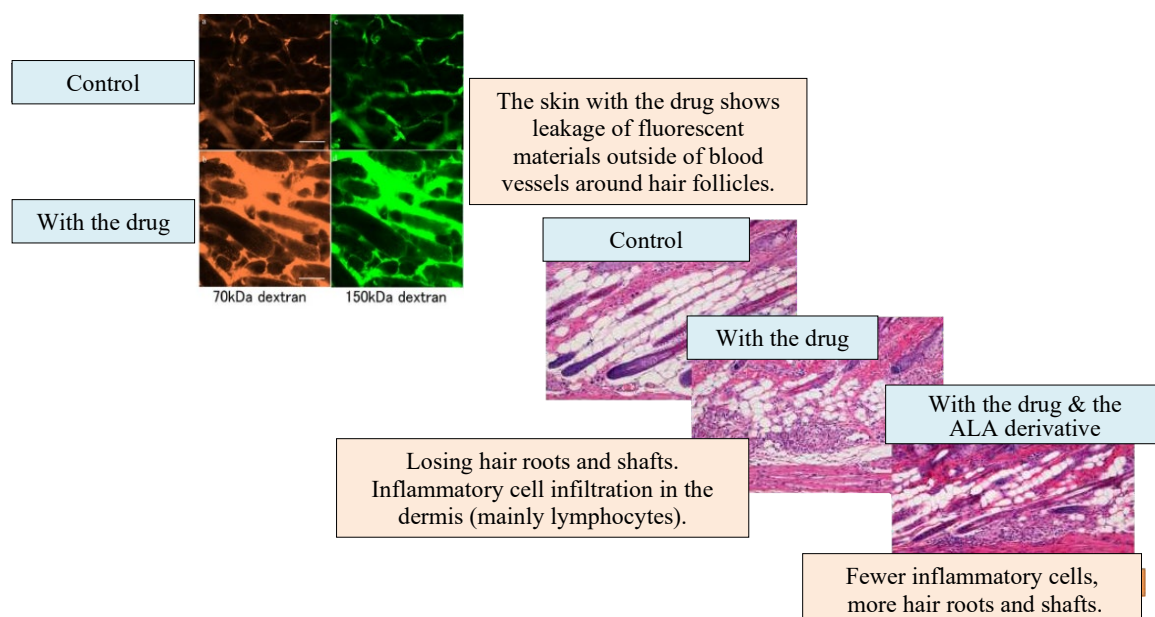
### ➤ Aderans

Since its establishment in 1968, Aderans, as a leading company in total hair-related solutions, has continued to prepare and offer a variety of solutions to address each customer's different hair-related concerns and requests. We are always committed to the development of products and services, such as hair and scalp checkups, hair growth and volumizing services, as well as wig products. The Aderans Group has expanded not only within Japan but also to other countries, including the hair transplantation business in the US and Spain. In Europe, building upon a business model developed in Japan, the in-hospital hair salon business was launched in Sweden in 2011 and has expanded to the Netherlands and Germany.

To deepen the research on hair and scalps, we have also developed collaboration with universities. One example is an endowed chair established in 2006 at Osaka University Graduate School of Medicine. This program is currently led by Specially Appointed Professor Shigeki Inui, striving to offer new solutions to people who are concerned about thinning hair.

### ■ The Mechanism of Hair Loss and Pain as Side Effects of Chemotherapy and Effects of the ALA Derivative

We have yet to find the mechanism of hair loss and pain as side effects of chemotherapy. An animal experiment we have conducted shows that a chemotherapy drug causes an increase in vascular permeability around hair follicles, which can be one of the factors associated with hair loss. We have also found that application of a novel antioxidant (the ALA derivative) lowers the severity of CIA while reducing inflammatory cell infiltration in skin, damage to hair roots and hair shafts, oxidative stress, and apoptosis.



## ■ Overview of the Endowed Chair

Name : Department of Advanced Medical Research and Development for Cancer and Hair [Aderans]

Period : July 1, 2022, to June 30, 2025

Aims : To explore new ways to apply the ALA derivative  
To develop international measures to address medical needs within and outside Japan  
To improve cancer patients' QOL, etc.

Director : Dr. Masafumi Inomata (Professor, Department of Gastroenterological and Pediatric Surgery, Oita University Faculty of Medicine; with concurrent appointments)

Main staff: Dr. Yutaka Hatano (Professor, Department of Dermatology, Oita University Faculty of Medicine; with a concurrent appointment)

Dr. Yohei Kono (Associate Professor, Department of Advanced Medical Research and Development for Cancer and Hair)

Dr. Takahiro Hiratsuka (Visiting Associate Professor, Department of Advanced Medical Research and Development for Cancer and Hair)

\* Associate Professor Kono and Visiting Associate Professor Hiratsuka assume the posts on July 1, when the endowed chair is launched.

	Progress toward the establishment of the endowed chair
2010	< Oita University > • <b>Finds a new way to apply</b> a novel antioxidant (the ALA derivative). • <b>Applies for a patent:</b> <u>preventive effects on CIA</u> .
2013	< Oita University and Aderans > Begin the joint research.
2014	< Oita University > <b>Acquires a patent:</b> <u>preventive effects on CIA</u> (Patent No. 5578997).
2018	< Oita University and Aderans > Launch a jointly developed product.
2019	< Oita University > Publishes a report on a multi-center joint clinical trial, evaluating clinical effectiveness (in the academic journal "Breast Cancer Research and Treatment").
2020	< Oita University > Publishes a report on basic research, clarifying the mechanism of CIA (in the academic journal "Cancer Science").
2022	< Oita University and Aderans > Establish the endowed chair.

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