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New Laboratory Established at the Shimadzu × Tohoku University Supersulfides Life Science Co-Creation Research Center

Contributing to Early Diagnosis Technology, Prediction of Therapeutic Effects, and Development of Drugs and Functionally-Enhanced Foods

On April 18, Shimadzu Corporation (hereinafter “Shimadzu,” located in Kyoto City, Kyoto Prefecture, and led by President & CEO Yasunori Yamamoto) and Tohoku University (located in Sendai, Miyagi Prefecture, and led by President Teiji Tominaga) established a new laboratory at the Shimadzu × Tohoku University Supersulfides Life Science Co-Creation Research Center. Since March 2024, when the Co-Creation Research Center was established, research was conducted at existing facilities, but the new laboratory, located in a fully renovated research space in a separate 2-story building, offers more space and multiple additional analytical and measuring instruments installed. That will enable more efficient and multifaceted research and is anticipated for use in identifying the properties of supersulfides involved in the aging mechanism of biological organisms, establishing medical diagnostic and treatment methods for various diseases, and developing functionally-enhanced foods with even more health benefits.

From the left are Ryo Yamaguchi (Healthcare Solutions Unit, Solutions Center of Excellence, Analytical & Measuring Instruments Division) and President & CEO Yasunori Yamamoto of Shimadzu Corporation, Tohoku University Director Tsuyoshi Tohyama (in charge of enterprise partnerships), and Tohoku University Professor Takaaki Akaike from the Graduate School of Medicine.

In 2017, Tohoku University Professor Takaaki Akaike (Redox Molecular Medicine, Graduate School of Medicine) was the first person in the world to discover that biological organisms metabolize energy by means of supersulfides. Shimadzu Corporation has been collaborating in joint research with the

Akaike Laboratory since 2020. In 2021, that collaboration resulted in developing LC/MS/MS method package software for reactive sulfur profiling based on measuring supersulfides in biological organisms using a Shimadzu liquid chromatograph mass spectrometer (LC-MS) system. After the Co-Creation Research Center was established in March 2024, it used existing facilities within the university to conduct research, while concurrently renovating a separate building for conducting more efficiently and to enable more sophisticated research.

The research space at the new laboratory was expanded to 4 times the previous space and multiple additional analytical and measuring instruments were installed, including LC-MS and gas chromatograph mass spectrometer systems. The improved research environment has enabled more efficient and multifaceted research, such as for determining the properties of supersulfide molecules or for observing the distribution of supersulfide molecules within organs using an imaging mass microscope. Both parties are aiming to use advancements in supersulfide molecule analysis to develop technologies for early diagnosis, to predict therapeutic effects, and to develop new drugs or functionally-enhanced foods.

Shimadzu × Tohoku University Supersulfides Life Science Co-Creation Research Center

Overview of Co-Creation Research Center

Name: Shimadzu × Tohoku University Supersulfides Life Science Co-Creation Research Center

Location: Supersulfides Life Science Co-Creation Research Center, 2-1 Seiryo-machi, Aoba-ku, Sendai

Available Equipment: Liquid chromatograph mass spectrometer, gas chromatograph mass spectrometer, imaging mass microscope, liquid chromatograph, gas chromatograph, etc.

Research Period: April 2024 to March 2027

Related Information

November 11, 2020 | News & Notices

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https://www.shimadzu.com/news/vdwgz9lkhixterja.html

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Contributing to the Development of Anti-Aging Drugs and Foods by Identifying Properties of Supersulfides with High Antioxidative Properties

Establishment of Shimadzu × Tohoku University Supersulfides Life Science Co-Creation Research Center

https://www.shimadzu.com/news/2024/f-_4wpx5el5u5gx1.html