



PRESS RELEASE

February 6, 2025 Graduate School of Medicine , Yamaguchi University UBE Corporation

Joint research for new combined cancer immunotherapy commenced by the Department of Gastroenterological, Breast and Endocrine Surgery, Graduate School of Medicine, Yamaguchi University and UBE Corporation

We announce today that the Department of Gastroenterological, Breast and Endocrine Surgery, Graduate School of Medicine, Yamaguchi University (Professor Hiroaki Nagano, hereinafter, "Dept. of Digestive and Oncological Surgery") and UBE Corporation (President: Masato Izumihara; Head Office: Minato-ku, Tokyo; hereinafter, "UBE") have begun to conduct joint research for a new combined immunotherapy for cancer that enhances the therapeutic effects of immune checkpoint inhibitors^{*1} on gastrointestinal cancer.

In this research, we aim to develop a strategy to induce an "immunologically hot state^{*2}" in the immune environment around cancer cells (tumor microenvironment) and improve the efficacy in a broader range of patients.

^{*1} Immune checkpoint inhibitor (ICIs): A drug that releases the brake on immune cells from cancer cells ^{*2} Immunologically hot state: A state characterized by immune cells working actively in tumors to be effective in attacking cancer cells

Background for the start of the joint research

In recent years, cancer immunotherapy has been attracting much attention as a promising treatment for many malignant tumors, including gastrointestinal cancer. ICIs, in particular, are therapeutics that act on cancer to make it less able to evade immune cells. However, currently only 20–30% of patients show a clear response to ICIs. One of the reasons for this is that many cancer tissues are in an "immunologically cold state^{*3}" such that immune cells are not sufficiently activated.

In collaboration with the Course of Immunology, Graduate School of Medicine, Yamaguchi University (Professor Koji Tamada), the Dept. of Digestive and Oncological Surgery has been developing a combination immune drug capable of aggressively activating immune responses in tumors (Kano Y, et al. Cancer Sci. 2016; Matsui H, et al. J Immunother. 2019; Nakajima M, et al. Cancer Immunol. Immunother. 2020).

^{*3} Immunologically cold state: A state characterized by immune cells having their action suppressed in tumors and being unable to effectively attack cancer cells

Findings in early research

In a clinical study conducted by the Dept. of Digestive and Oncological Surgery, approximately 60% of patients with hepatocellular carcinoma receiving this comb. were found to have an "immunologically hot state" in their cancer (Nakajima M, et al. Hepatol Res. 2023). This result is significantly higher than the proportion in patients with hepatocellular carcinoma who did not receive this comb. (approximately 20–30%), suggesting that the comb. makes the tumor microenvironment favorable to immune cells.

Furthermore, basic research with a mouse model of colon cancer suggested that this combination immune drug may provide comparable treatment efficacy while reducing dosage of ICIs (Ozasa T, et al. Sci Rep. 2025). This is noteworthy as it should lessen drug burdens on the patient.

Objective and goal

In this joint research, we aim to promote the infiltration of more immune cells into gastrointestinal cancer and its activation by combining UBE's cutting-edge compound and this combination immune drug that has been developed by the Dept. of Digestive and Oncological Surgery. This will enable ICIs to be fully effective in a broader range of patients, rather than in a limited patient population.

Expected outcomes

The findings and technical expertise from this research would pave the way to more effective immunotherapy for patients who have been enjoying only limited therapeutic effects so far. Bridging from basic research to clinical applications, this research is also expected to contribute to the development of a new mode of community healthcare and improve the health of people in society at large.

<For more information, please contact>

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