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Japan establishes consortium for 3D bioprinting cultured meat manufacturing

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On March 29, the Graduate School of Engineering, Osaka University (Osaka University), Shimadzu Corporation (Shimadzu), Itoham Yonekyu Holdings Inc. (Itoham Yonekyu), Toppan Inc. (Toppan), and SIGMAXYZ Inc. (SIGMAXYZ) established â??the future creation consortium for cultured meat.â• The consortium focuses on "concrete initiatives for practical implementation of the manufacturing technology of edible cultured meat using 3D bioprinting." Through cross-company collaboration, we will carry on "developing 3D bioprinting technology for application", "establishing an integrated value chain from production to logistics", and â??contributing to legislation through collaboration with government offices and private companies." By exhibiting at the 2025 World Exposition in Osaka, Kansai, we will concentrate on "providing information that helps people understand cultured meat," aiming to realize the world's first use of cultured meat.

The consortium consists of "operating partners," who develop technologies, negotiate with government offices and related organizations, and provide information to the public; "R&D partners," who engage in joint research in specific technology areas; and "practical implementation partners," who dispatch information to make cultured meat-related technologies and products popular.

"Operating Partners" are Osaka University, Shimadzu, Itoham Yonekyu, Toppan, and SIGMAXYZ. For the positions of "R&D partners" and "practical implementation partners," consortium is inviting applications from various fields.

The 3D bioprinting technology developed by Osaka University can freely produce muscle tissue structures and is expected to be used in the fields of food, regenerative medicine, and drug design. In August 2021, Osaka University and Toppan published a paper on a technology that produces different kinds of fibrous tissues, such as muscle, fat, and blood vessels using 3D printing and bundles up and integrates them. After the technology was established, Osaka University, Shimadzu,

and SIGMAXYZ signed a partnership agreement for the practical implementation of 3D bioprinting technology in March 2022 and began working on its practical implementation. By receiving Itoham Yonekyu as a member, who has extended its knowledge about meat over the years, "the future creation consortium for cultured meat" will further develop collaborations and accelerate technological development. Prior to the establishment of the consortium, Osaka University, Shimadzu, Itoham Yonekyu, Toppan, and SIGMAXYZ signed an agreement for "the practical implementation of cultured meat technology by 3D printing" to build a system for the initiatives.

With the establishment of the consortium, Osaka University, Itoham Yonekyu, and Toppan opened a "Joint Research Laboratory for Social Implementation of Cultured Meat" in Suita Campus, Osaka University. The joint research laboratory and "Osaka University Shimadzu Omics Innovation Research Laboratories," which is established in December 2019, will serve as the center for research promotion of the consortium.
The five parties are planning co-sponsor the "Osaka Healthcare Pavilion Nest for Reborn" exhibited at the Osaka-Kansai Expo by Osaka Prefecture and Osaka City, and to display an automated cultured meat production system and provide cultured meat produced by 3D bioprinting technology to visitors who wish to eat at the 2025 World Exposition in Osaka, Kansai, using the event as a place to communicate the initiatives of the consortium to the world. Through the Osaka Expo, we will present the ideal form of cultured meat as one of the "future foods," which will lower the burden on the environment and solve the global protein shortage. This will help people have a better understanding of what cultured meat is about. Through the initiatives of the consortium, the five parties will contribute to solving environmental and food problems, improving people's health, and proposing future foods.