

July 29, 2022

DIC Corporation

DIC and Debut Biotech Advance and Scale Biomanufacturing of Sustainable Red Colorants for Food, Nutrition, and Cosmetics

Tokyo, Japan—DIC Corporation (DIC) announced the start of the second phase of a joint development agreement with California-based biotech startup Debut Biotechnology, Inc. (Debut Biotech), a synthetic biology company at the forefront of advanced biomanufacturing technology. The agreement focuses on creating natural red colorants for the food, nutrition, and cosmetics industries.

Debut Biotech's proprietary continuous technology overcomes traditional biomanufacturing barriers through a cell-free approach — retaining enzymes and other useful parts of cells, while discarding limiting parts. By working with vital cell enzymes under optimum conditions, Debut Biotech engineers optimized reactions, synthesizing stable targets with high purity. The result is the efficient and continuous manufacturing of biomaterials and other active ingredient products previously overlooked due to low material yields.

In July 2021, DIC and Debut Biotech launched the [first phase of their joint development](#) agreement (JDA) to develop a new method for synthesizing natural pigments. Working together, DIC and Debut Biotech achieved titers one-thousand times higher than traditional fermentation methods typically deliver.

In this second phase, DIC and Debut Biotech will utilize the knowledge gained in the first phase to further develop and scale up a sustainable and highly efficient production process for high-performance natural pigments — specifically, bright, vibrant reds.

DIC and Debut Biotech will accelerate R&D collaborations to deliver high-purity and odorless natural pigment products for foods, nutrition, and cosmetics. By using plant-derived materials, the unstable quality control and supply issues that have long-continued to challenge natural product and bio-based material producers are eliminated.

As a leading global provider of printing inks and organic pigments, DIC is constantly striving to develop safer and more sustainable products. Through this JDA with Debut Biotech, DIC continues to realize the DIC Vision—*to improve the human condition by safely delivering color and comfort for sustainable prosperity*—offering safer and more sustainable products.

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News Release



About DIC

DIC Corporation is one of the world's leading fine chemicals companies and the core of the DIC Group, a multinational organization comprising over 190 companies around the globe, including Sun Chemical Corporation, in more than 60 countries and territories. The DIC Group is recognized as a global leader in the markets for a variety of products essential to modern lifestyles, including packaging materials, display materials such as those used in television and computer displays, and high-performance materials for smartphones and other digital devices, as well as for automobiles. Through such products, the Group endeavors to deliver safety and peace of mind, and color and comfort, to people everywhere. The DIC Group also seeks to contribute to a sustainable society by developing innovative products that respond to social change and which help address social imperatives. With annual consolidated net sales exceeding ¥800 billion and 22,000-plus employees worldwide, we pledge to continue working in close cooperation with our customers wherever they are. Please visit our website for more details: <https://www.dic-global.com/>

About Debut Biotech

Debut Biotech is unlocking and delivering high performance ingredients through advanced, cell-free biomanufacturing. Our platform harnesses precision fermentation and cell-free bioconversions to overcome the bottlenecks associated with traditional biomanufacturing methods.

The cell-free approach delivers high value ingredients that cannot be made via fermentation alone. To overcome the limits of the cell, we eliminate the cell. This method leverages the most useful parts of the cell — such as enzymes — while those with limiting properties — like the cell wall — are removed. Our hybrid fermentation and cell-free approaches unlock latent markets, providing access to sustainably produced, natural ingredients with health benefits that no others can. We are committed to traversing the entire process, from ingredient discovery to the scaling of these products, for consumer markets. <https://debutbiotech.com/>

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