Astaxanthin Innovation Reaches Commercial Scale

——*Algal Bio* and *Japan Bio Science Laboratory* Bring Joint Innovation to Market

First Joint Project from Algal Bio's Microalgae Bio-foundry Platform
Enters Market with New Cultivation Plant in Kyushu

TOKYO, July 10, 2025 - *Algal Bio*, a biotechnology company pioneering microalgae-based innovations, is pleased to announce that its joint development project with *Japan Bio Science Laboratory* (JBSL) has successfully reached the commercialization stage. The project focuses on producing high-concentration astaxanthin derived from *Haematococcus pluvialis*, a microalgae known for its rich antioxidant properties.

The technical development—including strain selection and cultivation process optimization—was jointly conducted by Algal Bio and JBSL. To transition into commercial production, JBSL independently constructed a fully indoor, closed-panel cultivation facility in Kyushu, the first of its kind in Japan. This new plant enables the stable, domestic production of high-concentration astaxanthin, with the entire process—from cultivation to extraction—completed within Japan. This milestone also marks the first commercialization originating from Algal Bio's Microalgae Bio-foundry Platform.

High-concentration, Japan-made astaxanthin cultivated in a fully enclosed indoor panel system.

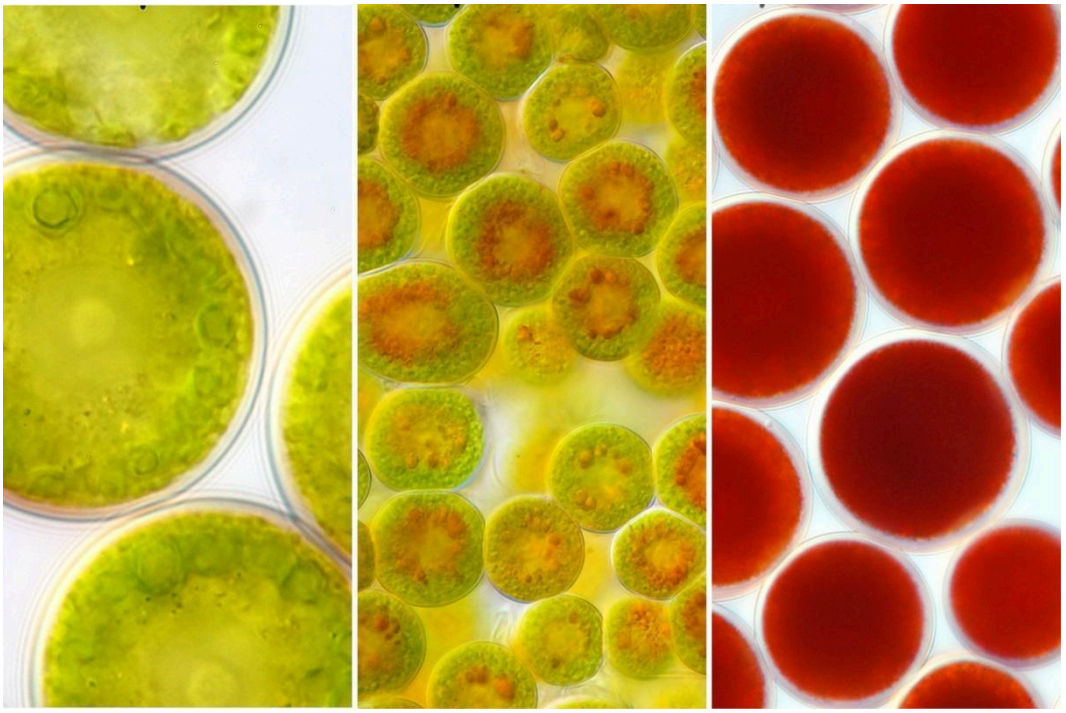
Founded in 2018, Algal Bio has developed a proprietary platform to accelerate microalgae innovation. Backed by a library of more than 1,260 strains across 100 species, the company supports everything from optimal strain selection and cultivation method design to pilot production and commercial scale-up.

This project began in response to JBSL's request to develop an astaxanthin production process that could be entirely managed within Japan. Algal Bio developed a cultivation method tailored to a proprietary *Haematococcus* strain, optimizing light conditions, nutrient composition, and environmental parameters to significantly enhance astaxanthin productivity. Although outdoor cultivation was initially considered, fluctuations in weather and light cycles posed challenges for quality consistency. As a solution, JBSL constructed Japan's first fully indoor, closed-panel system, ensuring consistent output and high quality in a controlled commercial setting.

This project represents the first successful commercialization to emerge from Algal Bio's Microalgae Bio-foundry Platform, which is designed to rapidly convert academic algae research into market-ready applications. The platform enables solutions in areas such as well-being, sustainable nutrition, the circular economy, carbon neutrality, and biomanufacturing.

About Haematococcus

Haematococcus pluvialis is a unicellular green microalgae known for producing astaxanthin, a red carotenoid pigment with powerful antioxidant and anti-inflammatory properties. These algae naturally inhabit freshwater environments such as ponds, temporary rainwater pools, cemetery stones, and greenhouse walls. Under stress conditions—such as high-intensity light or nutrient deficiency—they produce and store astaxanthin, turning from green to red to protect themselves. Astaxanthin derived from *Haematococcus* is widely used in health supplements, cosmetics, aquaculture feed, and functional food products.



About Japan Bio Science Laboratory

Since its establishment in 1986, Japan Bio Science Laboratory has been dedicated to the research, development, and production of functional ingredients, building on a foundation of fermentation and cultivation technologies. Its flagship products include the fermented botanical extract BIOZYME, first launched in 1974, and NSK, a natto-derived extract rich in nattokinase, introduced in 1998. Both products embody the company's strength in microbial culture and have earned widespread recognition for their quality and efficacy.

NSK in particular has become the company's leading ingredient, developed in collaboration with multiple universities and now sold in over 40 countries. This global success reflects the company's unwavering commitment to safety, quality, and consumer trust, as outlined in its quality policy: "Pursuing safety and peace of mind from the consumer's perspective."

In 2025, aiming for further growth, the company established a state-of-the-art, all-weather algae cultivation facility in Kyushu. As its first microalgae-based venture, Japan Bio Science Laboratory has begun cultivating Haematococcus algae for the production of domestically grown astaxanthin. As global standards for natural materials become increasingly stringent, the company continues to deliver products that respond to changing market needs—guided by its mission to "Apply the science of natural materials to make the world a healthier place from Japan."

http://www.jbsl-net.com/english/

About Algal Bio

Algal Bio is a research-driven startup committed to unleashing the full potential of microalgae to create a better future for people and the planet. Originating from more than 20 years of research at the University of Tokyo, the company is building one of the world's most advanced microalgae bio-foundry platforms. This platform combines a proprietary microalgae library containing over 1,260 strains from 100 species with deep expertise in strain selection, breeding, and cultivation optimization. It is also equipped with a dedicated pilot

plant for scale-up and validation, enabling rapid and precise development of tailored microalgae-based solutions.
Through close collaboration with partners across health, food, sustainability, and climate-related industries, Algal Bio brings innovative microalgae-derived products and technologies to market. These solutions are designed to address urgent global challenges such as human health, sustainable food supply, and environmental resilience.
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