

Green Extraction Technology for Algal Components

Low-temperature extraction
minimizing oxidation and degradation

Overview

The inventors have developed a subcritical separation technology, which, combined with a newly established method for estimating phase equilibria in a carbon dioxide–ethanol–water ternary solvent system near room temperature, enables the design of efficient extraction conditions for algal oils.

This invention proposes a clean extraction technology that mixes subcritical fluids with a feed solution (alcohol–water solution containing algae) to separate a vapor phase enriched in oils and a liquid phase enriched in chlorophyll and pheophorbide.

- Ⓞ Enhanced Safety
- Ⓞ Suppression of Oxidation and Thermal Degradation
- Ⓞ Energy Savings
- Ⓞ Low Environmental Impact

Product Application

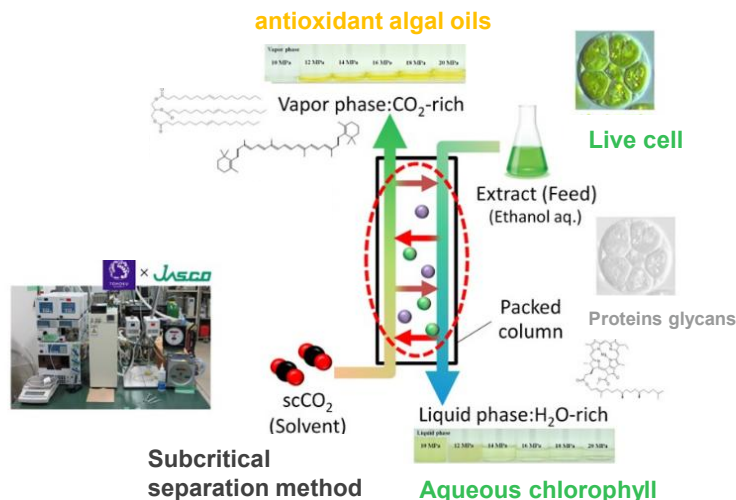
- ❑ Functional foods (antioxidant algal oils)
- ❑ Pharmaceutical ingredients
- ❑ Cosmetics and skin-care ingredients (high-purity, low-irritation oils)
- ❑ Biodiesel fuel

IP Data

IP No. : JP2026-39656A
Inventor : Masaki Ota, Masaru Watanabe, Masato Urabe
Admin No. : T23-067

Contact Us to Optimize
Your Process

Concept of the subcritical separation method



Related Works

- [1] [Fractionation of hops-extract–ethanol solutions using dense CO₂ with a counter-current extraction column - ScienceDirect](#)
- [2] [High-pressure phase equilibria of liquid CO₂ with ethanol - water mixtures - ScienceDirect](#)

Contact

Tohoku Techno Arch Co., Ltd.

Please visit [CONTACT](#) here