

A Sustainable Procedure to Released Bioactive Compounds from Biomass

CSIC has developed a procedure to extract bioactive compounds from wet biomass, in example microalgae or/and seaweeds, by using a sequential methodology. The procedure is quick, selective, give high yields, maintain bioactivity and minimize the impact to the environment.

Industrial partners from the chemical or pharmaceutical or food industry are being sought to collaborate through a patent licence agreement.

An offer for Patent Licensing

A Sustainable Extraction of Bioactives from Algae

Extraction of biomass is performed in sequential steps comprising supercritical fluid extraction, pressurized liquid extraction, and subcritical extraction.

Wet biomass could include microalgae or seaweeds. For the compounds of interest quantified (lipids, proteins, sugars and the pigment fucoxanthin), recoveries reached values greater than 80% of lipids and 70% fucoxanthin present in algal biomass recovery.

In terms of the content of proteins and sugars, the process corresponding to the present invention allows to recover a percentage of proteins more than 18% and a 35% percentage of sugars from the algal biomass.

The residue of the sequential extraction contains mainly sugars and proteins.



A seaweed

Main innovations and advantages

- Bioactive extraction yields are clearly superior to those obtained using the procedure from dry biomass (lyophilized)
- The usual previous dry treatment of the biomass is avoided.
- Solvents are eliminated during the process to preserve released compounds from deleterious oxidation.

Patent Status

Priority patent application filed suitable for international extension

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