

Process for Production of Added-Value Water-Extract from Liquid Biomass

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Abstract : Coupled Membrane Separation Technology (CMST), including Cross Flow Microfiltration (CFM) and Reverse Osmosis (RO), are used to concentrate microalgae biomass or/and to extract and concentrate water-soluble metabolites produced during micro-algae production cycle, as well as water recycling. Micro-algae biomass was produced using different feeding mixtures of ingredients: pure chemical origin compounds and natural/ecological water-extracted components from available local plants. Micro-algae was grown either in conventional plastic bags (100L/unit) or in small-scale innovative bioreactors (75L). Biomass was concentrated as CFM retentate using a P19-60 ceramic membrane (0.2µm pore size), and water-soluble micro-algae metabolites left in the CFM filtrate were concentrated by RO. Large volumes of water (micro-algae culture media) of were recycled by the CMTS for another biomass production cycle.

Keywords : extraction, membrane process, microalgae, natural compound

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