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An overview on the downstream processes applied in the microalgae deconstruction

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PURPOSE OF THE ABSTRACT

Microalgae are recognized as rich raw materials since they are composed of a large range of bioactive compounds, namely pigments, proteins, polysaccharides, and long fatty acids, all of which have been applied over the years in different industries, including cosmetics, animal feed, human food, and energy.
Behind the fact that the microalgae production requires simple conditions to produce large amounts of different bioactive compounds, it can be carried during the entire year, allowing for high yields of biomass production and bioactive compounds accumulation. Despite the high economical value of some of the ingredients accumulated in microalgae cells, its commercialization has still not reached its maximum, due to the high costs of the downstream processes being applied up to date. These are normally related with the processes' complexity, using large amounts of organic solvents or those using more sophisticated equipment and specialized human resources, compromising the compounds' sustainable and profitable commercialization. A critical overview [1] presenting the oldest and newest downstream processes will be scrutinized. Emphasis will be given to the most recent extractive approaches as well as the main commercial sectors targeted.

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FIGURES

FIGURE 1

FIGURE 2

KEYWORDS
microalgae | bioactive compounds | downstream processes | overview

BIBLIOGRAPHY

[1] ventura s.p.m., et al., Extraction of added-value compounds from microalgae. In: Muñoz R, Gonzalez-Fernandez C, editors. Microalgae-Based Biofuels and Bioproducts, 1st Edition. Elsevier; 2017.