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Carotenoids recovery from brown macroalgae using surface-active solvents

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PURPOSE OF THE ABSTRACT

Carotenoids are lipophilic compounds and their production is one of the most challenging, yet rewarding activities in blue biorefinery. Some carotenoids (fucoxanthin included) have an improved antioxidant activity and many studies have confirmed their health benefits. Fucoxanthin is considered as one of the most important intracellular active metabolites present in brown macroalgae.

Aqueous solutions of different surface-active ionic liquids and anionic surfactants were evaluated for the carotenoids extraction from macroalgae and microalgae.

Two distinct processes were recently established for the recovery of carotenoids from *Sargassum muticum* and a specific species of microalgae, the latest allowing the licensing of the technology. In this presentation, the criteria and rationale behind the development of efficient and simple downstream processes associated to different marine biomass matrices will be scrutinized [1,2].

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FIGURES

FIGURE 1

FIGURE 2

KEYWORDS

Surface-active alternative solvents | Brown macroalgae | Carotenoids | Downstream processes

BIBLIOGRAPHY

[1] f. a. vieira, r.j.r. guilherme, m.c. neves, a. rego, m. h. abreu, j.a.p. coutinho, s.p.m. ventura, sep. pur. technol. 201, 196, 300-308.

[2] f. a. vieira, r.j.r. guilherme, m.c. neves, a. rego, m. h. abreu, e. r. o. rodrigues, m. maraschin, j. a. p. coutinho, s. p. m. ventura, sep. pur. technol. 2017, 172, 268–276.