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Ionic liquid method for the extraction of lipid from microalgae biomass: a review

Motlagh S.R.[a], Elgharbawy A.A.[b], khezri R.[c], Harun R.[a], Biak D.R.A.[a], Hussain S.A.[a]

Save all to author list

[a] Department of Chemical and Environmental Engineering, Faculty of Engineering, University Putra Malaysia, UPM, Serdang, 43400, Selangor, Malaysia

[b] International Institute for Halal Research and Training (INHART), International Islamic University Malaysia, Gombak, 50728, Kuala Lumpur, Malaysia

[c] Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, 10330, Thailand

Abstract

Author keywords

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Abstract

Microalgae are an alternative source of renewable energy and high-value products for pharmaceutical, nutraceutical, etc., due to rich in carbohydrates, proteins, lipids, and high-density lipoproteins. Existing methods for cell disruption and extraction are costly and suffered from low proficiencies. Ionic liquids are proven to be an environmentally friendly substitute to conventional volatile organic solvents. They have been used in extracting different types of biomass, including microalgae. This article reviews the potential of ILs in extracting biomolecules, lipid, and omega-3, from microalgae biomass. The physicochemical properties of ILs, including viscosity, density, and melting point, their advantages and limitation, as well as toxicity and recyclability of ILs in lipid processing, are discussed. Graphical abstract: [Figure not available: see fulltext.] © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.

Author keywords

Cell disruption; Ionic liquids; Lipid extraction; Microalgae biomass; Omega-3

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Harun, R.; Department of Chemical and Environmental Engineering, Faculty of Engineering, University Putra Malaysia, UPM, Serdang, Selangor, Malaysia; email:mh_razif@upm.edu.my