ABSTRACT:
Various extraction methods were assessed in their capacity to extract fatty acids from a dried biomass of *Thraustochytrium* sp. ONC-T18. Direct saponification using KOH in ethanol or in hexane:ethanol was one of the most efficient techniques to extract lipids (697 mg g\(^{-1}\)). The highest amount of fatty acids (714 mg g\(^{-1}\)) was extracted using a miniaturized Bligh and Dyer extraction technique. The use of ultrasonics to break down cell walls while extracting with solvents (methanol:chloroform) also offered high extraction yields of fatty acids (609 mg g\(^{-1}\)). Moreover, when the transesterification mixture used for a direct transesterification method was doubled, the extraction of fatty acids increased approximately 77\% (from 392 to 696 mg g\(^{-1}\)). This work showed that *Thraustochytrium* sp. ONC-T18 has the ability to produce over 700 mg g\(^{-1}\) of lipids, including more than 165 mg g\(^{-1}\) of docosahexaenoic acid, which makes this microorganism a potential candidate for the commercial production of polyunsaturated fatty acids. Finally, other lipids, such as myristic, palmitic, palmitoleic, and oleic acids, were also produced and recovered in significant amounts (54, 196, 123, and 81 mg g\(^{-1}\)), respectively.

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