



Bioactivity screening of *Aurantiochytrium* sp. for antioxidant activities

Joaquina Pinheiro^{1*}, Maria Paulo², Joana Coutinho², Teresa M. Baptista¹, Susana M. Bernardino¹, Carla Tecelão¹, Maria M. Gil¹ and Marco Lemos¹

¹ Centro de Ciências do Mar e do Ambiente (IPLeiria), Portugal

² Depsiextracta, Tecnologias Biológicas Lda, Coruche, Portugal

Aurantiochytrium sp. is a heterotrophic microalgae that, in certain growth conditions, besides producing significant amounts of squalene, may potentially produce other bioactive compounds with high value and commercial interest such as docosahexaenoic acid (DHA), carotenoids, among others.

Antioxidant compounds, naturally occurring in microalgae sources, have been identified as free radical or active oxygen scavengers, with beneficial effects on oxidation and oxidative damage inhibition in human body and foods. Several in vitro methodologies have been proposed to evaluate the antioxidant capacity, such as free radicals: 2,2-diphenyl-1-picrylhydrazyl (DPPH) and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS+), and reactive species including hydrogen peroxide (H₂O₂), singlet oxygen (O₂), and superoxide anion (O₂⁻) (Balboa et al., 2013).

The main objective of the present study was to evaluate the antioxidant activity of aqueous and ethanolic extracts of *Aurantiochytrium* sp., by means of different methodologies: reducing and scavenging activity by total phenolics content (TPC, Singleton & Rossi, 1965), DPPH (Custódio et al., 2012), and oxygen radical absorbance capacity (ORAC, Dávalos et al., 2004). The obtained results indicated that the microalgae *Aurantiochytrium* sp. is rich in antioxidant compounds, by reducing activity through total phenolics and DPPH, as well as scavenging activity by ORAC. Moreover, it is evident the higher selectivity of ethanol as solvent for the extraction of antioxidants compounds.

The potential of this microalgae biomass as a good, natural and sustainable source for use as a functional food ingredient is evident, representing an opportunity with additional benefits due to the antioxidant role in diseases prevention and treatment.

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* **Correspondence:** Dr. Joaquina Pinheiro, Centro de Ciências do Mar e do Ambiente (IPLeiria), Peniche, Portugal, joaquina.pinheiro@ipleiria.pt