

Rocha, H. R., Coelho, M., Coelho, N., Morais, R. M. S. C., Pintado, M., & Gomes, A. M. (2025). *Linking bioaccessibility and carotenoids to antioxidant activity in diatoms*. Abstract from Encontro Ciência 2025.

Diatoms are photosynthetic microalgae with a siliceous cell wall and remarkable adaptability, making them a sustainable and renewable resource for high-value bioactive compounds (1,2). Their rapid growth, efficient carbon fixation, and minimal land and freshwater requirements (1,2) position them as attractive candidates for the development of eco-friendly products in the nutraceutical, pharmaceutical, and cosmetic industries. Among their most relevant metabolites are carotenoids and phenolic compounds, which exhibit strong antioxidant properties (3,4,5). This study explores the carotenoid profile of *Chaetoceros calcitrans*, *Nannofrustulum shiloi*, and *Cylindrotheca fusiformis*, and evaluates their antioxidant capacity using ABTS and DPPH assays. Furthermore, the natural bioaccessibility of carotenoids was assessed using the INFOGEST in vitro digestion model, highlighting the relevance of these compounds under physiological conditions and their potential for sustainable functional applications.