

## **Development of CCC-based production systems to obtain valuable compounds from microalgae**

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Built on the latest advances in the development of increasingly sensitive and efficient analytical techniques, the identification of valuable bio-products in microalgae is widely known. However, the methods developed so far to obtain these compounds from their microalgae sources have limitations when scaled at a larger size and implied time- and solvent-consuming operations. Therefore, to contribute to the potential commercial use of extractable bio-products from microalga, greater efforts are still required in the fields of research and the development of isolation systems, using an efficient, cost-effective, and scalable isolation technology. Within this frame of reference, liquid-liquid chromatography techniques such as countercurrent chromatography (CCC) have emerged as a valuable alternative due to their high efficiency and proven scalability. My talk refers to the investigation and development of CCC processes for obtaining valuable polyunsaturated fatty acids (docosahexaenoic acid-DHA, docosapentaenoic acid - DPA, and eicosapentaenoic acid - EPA) and carotenoids (fucoxanthin) from microalga at the laboratory scales. Overall, this isolation approach may represent a useful model for the efficient production of these valuable compounds to meet potential demand from the nutraceutical, food, and pharmaceutical sectors.