

***Hibberdia magna* (Chrysophyceae): Bioprospecting of Fucoxanthin and Polyunsaturated fatty acids producers between freshwater flagellates.**

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Unlike the earlier expectations of applied phycology to produce a big bulk product as foods or fuels, recent aims have been shifted to finer and algae-specific products with much higher value. Some of these products are carotenoid pigments and polyunsaturated fatty acids which have a positive impact on human health and their demand is globally rising.

Fucoxanthin is a photosynthetic carotenoid pigment which is found only in some algae taxa. Present-day, seaweeds (*Phaeophyceae*) which are a traditional part of the seafood diet, are the major source of this compound for human consumption. For inland nations, seaweeds are usually not available or acceptable. Moreover Fucoxanthin content in the seaweed's biomass is quite low and worse accessible. Hence the novel source of this beneficial carotenoid is under examination. Unicellular algae from other Heterokont groups also produce it. Recently, some marine diatoms are broadly studied and also industrially cultivated but these algae are not suitable for inland culturing because of their saltwater requirement.

We focused to select some novel freshwater microalga strains which can be utilized as highly efficient Fucoxanthin and polyunsaturated fatty acids producers. We proceed brief screening of selected freshwater flagellated algae strains (*Haptophyceae*, *Synurophyceae*, *Chrysophyceae*) obtained from algae cultures collections. Algal specie *Hibberdia magna* came out of this screening as a potential candidate for deeper investigations. It has potential as a final producer neither as a good model organism for a further comparative investigation. We proceed row of manipulative cultivation experiments where we focused on its growing abilities, biomass production, Fucoxanthin content, and fatty acid profile according to cultivation medium, pH, temperature, and light character. The further aim is to design an optimal cultivation procedure to get the highest yields of those focused high valuable products from this organism.