

MAGNIFICENT

Reliable microalgae products serving market demands for
a sustainable future.



Microalgae are a promising feedstock for sustainable production of food, feed and non-food products. Microalgae can be grown on land unsuitable for agriculture using seawater and CO₂ from flue gas or absorbed from the air. Algae cultures have a high areal productivity, and the produced biomass is a rich source of proteins, oils, polysaccharides and high-added value compounds incl. omega fatty acids, colorants, anti-oxidants, and other bioactive ingredients. There is presently a large production capacity for a limited number of microalgae strains in Europe. However, the number of concrete products is limited. Expansion of algae application in consumer products requires reduction of production costs, increase of the production scale and enhancement of economic revenues through development of new products and applications. The MAGNIFICENT project addresses these challenges. The enlargement of market applications for high-value microalgae ingredients will lead to new business opportunities, industrialize the technology and provide the knowledge and experience required to enter the medium to low value market within 5-10 years.



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MAGNIFICENT aims to expand the range of commercial algae products and their market volume substantially and in a sustainable manner. The overall objective is to develop and validate a sustainable and economically feasible new value chain based on cultivation and processing of microalgae, with the aim to transform microalgae biomass into valuable ingredients for food, aquafeed and cosmetics applications. To achieve this, the various steps in the production chain will be optimized. The cultivation of the microalgae will be improved by the selection of new, better performing algae varieties, by adaptation of the cultivation process to reach a higher

concentration of valuable target products and by improvement of the extraction and purification processes. In this way the overall aim to maximise the production of compounds of interest can be achieved. In the project the focus is on production of phospholipids rich in omega-3 fatty acids and fucoxanthin. Development and validation of new product formulations based on these compounds are included in the project.

The work is supported by chain evaluation, market assessment, socio-economic impact assessment and Life Cycle Assessment. Specific attention is paid to the requirements of the EU regulatory framework.

The MAGNIFICENT consortium has 16 partners from 7 EU countries incl. 10 Small and Medium-sized Enterprises, 3 Large Enterprises, 1 University and 2 Research and Technology Organisations, and comprises commercial partners in the entire value chain and the 3 target markets.

