

# MAGNIFICENT

Microalgae As a Green source for Nutritional Ingredients for Food/Feed and Ingredients for Cosmetics by cost-Effective New Technologies

## Summary

MAGNIFICENT seeks to develop a new value chain for food, aquafeed and cosmetic ingredients based on microalgae. Currently, market opportunities for microalgae-based products are restricted to high-value products, as production costs are currently prohibitive to use it as a feedstock.

There is an existing capacity for large scale production, but both the variety of products and number of market opportunities is currently limited, mainly to dietary supplements and cosmetics. Magnificent will use these facilities to develop the biorefinery concept further, validate the value chains and develop new ingredients.

MAGNIFICENT will seek to expand the range of products and their market volume substantially and sustainably, improving current applications and developing new ones, such as food and aquatic feed. It will do this by developing and validating a new value chain for cultivating and processing microalgae, addressing both upstream and downstream processes.

<https://magnificent-algae.eu/>

**Type of Action:**  
Research & Innovation Action

**Value Chain:** Aquatic biomass

**Start date:** 01 June 2017

**End date:** 31 May 2021

**BBI JU contribution:** € 5,330,572.50

## Objectives

Technological objectives:

- Demonstrate the viability of high performance biomass and product production technology by developing an integrated microalgae biorefinery concept
- Demonstrate high performance and low environmental impact during extraction separation and purification
- Develop improved strains of microalgae
- Develop and test new ingredients for cosmetic food and aquafeed products

Economic objectives

- To make production of microalgae economically viable
- To develop a cost competitive integrated biorefinery for microalgae
- To increase the number of commercial cosmetics, food and feed products using algae

## Expected impacts

MAGNIFICENT will have the following impact:

- Scaling up of algae biomass production and subsequent reduction in cost
- Significant increase in yield optimisation, improved product quality and reduction in energy use and improved environmental footprint.
- Creation of a range of innovative high value products from microalgae, developed in partnership with all actors in the value chain, including consumers.
- Integration of microalgae as a new biomass resource for the food, aquafeed and cosmetic sectors.
- Creation of new, skilled jobs in algae cultivation and processing in engineering, construction, operation. In future, large-scale cultivation systems will take place underdeveloped areas unsuitable for agriculture.



Environmental objectives:

- To replace non-sustainable ingredients for sustainable alternatives.

## Project coordination

- Wageningen University (The Netherlands)
- Stichting Wageningen Research (The Netherlands)
- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (Germany)
- Necton - Companhia Portuguesa de Culturas Marinhas SA (Portugal)
- Cmp - Cimentos Maceira E Pataias SA (Portugal)
- Sparos LDA (Portugal)
- Erdyn Consultants (France)
- Alga Development Engineering And Services SL (Spain)
- Madebiotech - C R & D, S.A. Zona Franca da Madeira (Portugal)
- Narec Distributed Energy Ltd (UK)
- Algosource Technologies (France)
- Kemin Industries (Belgium)
- IMEnz Bioengineering BV (Netherlands)
- N-zyme Biotec GmbH (Germany)
- Natac Biotech SL (Spain)
- Total Raffinage Chimie SA (France)

**Organisation name:** Wageningen University (The Netherlands)