Bringing **INNOVATIVE** MICROALGAE-BASED compounds to the **MARKET**

**RoadMAP**

**Algae selection**
Selection of about 10 strains including natural, mutant and GMO for an improved production of terpenes and terpenoids for application in fragrances, and cosmetic actives, nutraceuticals and agrochemicals.

**Up-scaling**
Upscaling of the production systems for algae culture and terpene production. After setting the process books for implementing the optimised process design, experimental large scale manufacturing of innovative algal products will be carried out.

**Management**
WP8 and WP9 deal respectively with the exploitation/dissemination/communication activities and with management/coordination tasks of the Project. WP10 addresses the Project’s ethical requirements, particularly given its work with GMOs.

**Product and market acceptance**
The whole value chain of production will be evaluated through life cycle, technical-economic and environmental analyses which are required for market acceptance of algae biomass production. The acceptability of algal products will be assessed.

**ALGAE ARE A FERTILE SOURCE OF POTENTIAL NEW NATURAL MATERIALS.** ABACUS will make a major step in mastering the value chain for competitive, algae-based products.
ABACUS is a 3-year project aiming at a business-oriented and technology-driven development of a new algal biorefinery, thereby bringing to the market innovative alga-based ingredients for high value applications, with focus on algal terpenoids for fragrances to long-chain terpenoids (carotenoids) for nutraceuticals and cosmetic actives.

The concept of ABACUS will associate several interdisciplinary approaches in order to support a high-value products oriented market development:
• Selection and Biological engineering of microalgal strains and oriented photosynthesis of terpenoids
• Technological development of algae biomass production system to optimize cultivation and photosynthesis of terpenoids
• Technological development of the downstream processing step to reduce harvesting time and costs (both investment and operational costs), and to be environmentally acceptable
• Market development oriented to new added value algae bio-based materials and new bio based value chain production

Terpenoids are molecules that can be found in photosynthetic microorganisms like plants or algae. They represent a renewable alternative to petroleum-derived fuel and building blocks of synthetic biopolymers as well as high value compounds for cosmetic and nutraceutical uses.

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