



University of Naples Federico II

Department of Pharmacy

PhD course

Nutraceuticals, Functional Foods and Human Health

DIPARTIMENTO di FARMACIA



XXXLX cycle

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Metabolomic study of extracts from plants of the Mediterranean area

The research project aims at exploiting plant species typical of the Mediterranean area. First, an efficient extraction method, based on “green” solvents, will be developed for obtaining extracts rich in active compounds to be used as functional ingredients for the production of high-nutrition food. The extracts obtained will be characterized for the present metabolites using different analytical techniques, mainly HPLC coupled with high resolution mass spectrometry (LC-HRMS) and, when necessary for the complete identification of the metabolite, magnetic resonance spectroscopy (NMR). In parallel, the nutraceutical-relevant biological activities, such as antioxidant, anti-inflammatory, or antidiabetic, of the extracts will be evaluated. In addition, the project includes a scale-up phase of the extraction process, again monitored by LC-HRMS, and the study of possible formulations and applications of the obtained ingredients.

The research activity aligns with the national thematic areas of PNRR, particularly those related to biodiversity. The project's outcomes include scientific developments and enhancement of human capital, producing new technologies/knowledge through the exploitation of territorial resources and enabling the identification of high-value solutions for sustainable biodiversity management (quoted from D.D. No. 3138, 16-12-2021).