

METROFOOD-IT: Integrated Methodologies for Authenticity, Traceability and Nutritional Quality of Agrifood

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The Authenticity and Traceability laboratory is specialized in applying a fingerprinting strategy based on spectroscopy (NIR and MIR) and geochemical (multielement and isotopic signatures) analysis combined with chemometric data treatments to predict quality properties and for authentication of high-quality (PDO, PGI) agri-food products according to their geographical area of origin.

The Food, Nutrition and Health laboratory is specialized in the assessment of the Nutritional Quality and functionality of the agri-food products and side streams to improve also processing sustainability through food innovation. Metabolomics is applied using high-resolution mass spectrometry (LC/HRMS Orbitrap, LC/MS/MS, GC/MS), liquid and gas-chromatography (HPLC/DAD, GC/FID), Luminex technology (BioPlex200).

The laboratory of Microbial Ecology provides the expertise in food microbial ecology through the application of novel metagenomics-based techniques for identification of microbiome profiles (isolated strains, metagenomics profiles) as markers of food quality or origin tracer of food products (anaerobic cabinet, PCR machines and cabinets, Bioanalyzer of DNA quality for Shotgun metagenomics).

Keywords: multielement fingerprinting, isotopic signatures, metabolomic, microbiome, metagenomics profiles

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