

INTEGRATED, HIGH PERFORMANCE APPROACH FOR TOXICOLOGICAL AND FUNCTIONAL ASSESSMENT OF ACTIVE INGREDIENTS AND COMPLEX MIXTURES IN FOOD

Innovative aspects and related benefits | development and integration of genotoxicity tests and multiparametric analyses of cellular functionality in state-of-the-art in vitro cell systems for a high performance toxicological screening of active ingredients and complex mixtures. Development and implementation of an innovative approach to exploit mouse models for hazard characterization and risk assessment associated with oral exposure to potentially harmful substances: assessment of genotoxic damage at multiple complexity levels, DNA, gene, chromosome; integration of organ-specific toxicity/genotoxicity analyses in validated sub-chronic toxicity testing to improve cost-effectiveness ratio of animal experiments.

Use | consultancy services to companies producing dietary supplements and fitoextracts in order to:

- contribute to safety assessment of plant extracts and vegetal waste derived biomolecules employed as phytotherapeutic medicinal products or nutraceuticals;
- contribute to determine the functional properties (antioxidizing and antimutagenic activities) of vegetable extracts used as dietary supplements.

Activities undertaken and in progress | The ENEA Laboratory of Biosafety and Risk Assessment provides consultancy services to companies for the toxicological assessment of plant extracts. Currently, the Laboratory is taking part in a Project funded by the European Food Safety Authority (EFSA) aiming at the toxicological characterization of food mycotoxins. Within a EU Seventh Framework Programme Project, the Laboratory participates in a study aiming at the toxicological evaluation of nanoparticles used as food additive.

