



Università degli Studi di Napoli Federico II

PhD in Biotechnology - 38th cycle

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**Analysis of plant Mother Tinctures: towards the
characterization of new bioactive compounds in
herbal extracts**

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Plants represent a huge and not completely explored source of biologically active molecules to be used for several human needs¹⁻³, such as medicines, nutritional supplements and agricultural bioactive compounds⁴⁻⁶. The present project perfectly fits in the current PNRR, in particular with the Green Revolution and the Ecological Transition, and provides a clue toward a strong synergy between industry and research. Indeed, it is mainly based on the complete characterization of a set of plant extracts (Mother Tinctures, MT), hydro-alcoholic extracts obtained through cold maceration. MTs will be analyzed with the most advanced diagnostic techniques, to precisely define their chemical composition and evaluate their biological effects on eukaryotic cell-based models to evaluate antioxidant, anti-inflammatory, anti-aging, anti-cancer and immunostimulant properties.

Finally, some MTs will be tested as bio-pesticides and bio-stimulants, thus opening the way to the replacement of synthetic pesticides. This approach appears very innovative and in line with a green chemistry approach applied to agriculture and environmental pollution.

References

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