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**Supervisor:**

Prof. Alessandra Braca

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**PhD project title:**

Study of plant species with antimicrobial activity

**Research summary:**

My research project aims to study plant extracts with antimicrobial activity by following this procedure: a preliminary metabolomic profiling, then the isolation and characterization of the secondary metabolites and subsequently antimicrobial activity assays on both whole extracts and pure isolated molecules. The experimental phases of the project include plant selection, extraction of metabolites from the plant matrix, metabolomic analysis with UHPLC-ESI-HR-Orbitrap/MS for phytochemical fingerprinting, isolation of compounds by Sephadex®, Biotage®-Isolera™ and RP-HPLC chromatographic techniques, and finally, structural characterization by 1D- and 2D-NMR and mass spectrometry. The study focuses on plants not yet extensively studied that possess a variety of secondary metabolites and could play an important role in human wellbeing and, represent a significant source of novel antimicrobial agents that could potentially act as an alternative strategy to fight the antibiotic resistances.

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