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NMR metabolomics and spectrophotometric studies to infusions and decoctions of plant species to assess and compare the metabolic and antioxidant profiles

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NMR metabolomics and spectrophotometric studies (Folin–Ciocalteu, FRAP, ABTS) are implemented to infusions and decoctions of plant species to assess and compare the metabolic and antioxidant profiles for each botanical family. Multivariate and univariate data analyses highlighted the differences among the samples and pinpointed specific classes of compounds for each plant species as well as infusions and decoctions. The identified phenolic compounds by NMR, as well as the antioxidant profile, framed a trend of increased values in infusions compared to the decoctions. Furthermore, the infusion procedure positively affected the extractability of the phenolic compounds compared to decoctions. The highest total phenolic content (TPC) was found in *Mentha spicata*, while the lowest in *Matricaria chamomilla* preparations, irrespective of the preparation method. The preparation time for the decoctions was examined showing that the 15 min preparations were generally found richer in phenolics and of higher antioxidant activity.

Biography

Charalampos Proestos has completed his BSc in Chemistry at University of Ioannina, Greece and MSc in Food Science at Reading University, UK. He obtained his PhD in Food Chemistry at Agricultural University of Athens (AUA), Greece, where he continued his Postdoc working on natural antioxidants on programs funded by EU and Greece. After further training at Wageningen University, The Netherlands, he worked as a Research Associate at AUA. He worked as a Chemist for the Hellenic Food Authority (EFET), being food industry Auditor and Supervisor of the Chemical Laboratory in Athens accredited with ISO 17025. Currently he is working as an Assistant Professor in Department of Chemistry, National and Kapodistrian University of Athens. He has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of more than 10 repute journals.

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