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Book of Abstracts of the 1st International Symposium on Profiling

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P3. Hydrophilic and lipophilic compounds in *Arenaria montana* L. and *Chenopodium ambrosioides* L. and bioactivity of their infusions and methanolic extracts

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Abstract

Some plants traditionally used have medicinal properties with great potential for therapeutic applications in the treatment of some diseases since they are a natural source of bioactive compounds [1]. *Arenaria Montana* L. and *Chenopodium ambrosioides* L., commonly used in Portuguese folk medicine, are examples of those plants acting in the gastrointestinal tract, stomach, indigestion, respiratory system, flu, cold, vomiting, anthelmintics and in the healing of skin ulcers caused by Leishmania species; furthermore, they revealed anti-inflammatory and antitumor properties [2,3]. In this work, the chemical composition of the mentioned plants in hydrophilic (sugars and organic acids) and lipophilic (fatty acids and tocopherols) compounds was determined by chromatographic techniques. Furthermore, the bioactive properties (antioxidant and antitumour activities, and hepatotoxicity) of their infusions and methanolic extracts were evaluated and compared. Radical scavenging activity, reducing power and inhibition of lipid peroxidation in brain homogenates were used to evaluate antioxidant activity, while antitumor potential was screened in different human tumour cell lines: MCF-7 (breast carcinoma), NCI-H460 (lung carcinoma), HCT-15 (colon carcinoma), HeLa (cervical carcinoma) and HepG2 (hepatocellular carcinoma). Hepatotoxicity in non-tumour liver cells was also accessed using a primary culture established by us (PLP2). *C. ambrosioides* was the most active regarding antioxidant activity (EC₅₀ values 0.47-2.53 and 0.25-2.32 mg/mL for methanolic extract and infusion, respectively). *A. montana* infusion showed the highest antitumour activity in all the tested cell lines (GI₅₀ values 58.67-231.08 µg/mL). This plant also gave the highest levels of saturated (43.16%) and monounsaturated (10.16%) fatty acids and sugars (10.15 g/100 g dw), particularly fructose (5.46 g/100 g dw). *C. ambrosioides* showed the highest content of α-linolenic acid (48.54%), tocopherols (202.34 mg/100 g dw), particularly α-tocopherol (199.37 mg/100 g dw) and organic acids (7.58 g/100 g dw), mainly oxalic acid (5.64 g/100 g dw). Overall, the studied plants proved to be good sources of natural bioactive compounds which may have industrial uses.

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