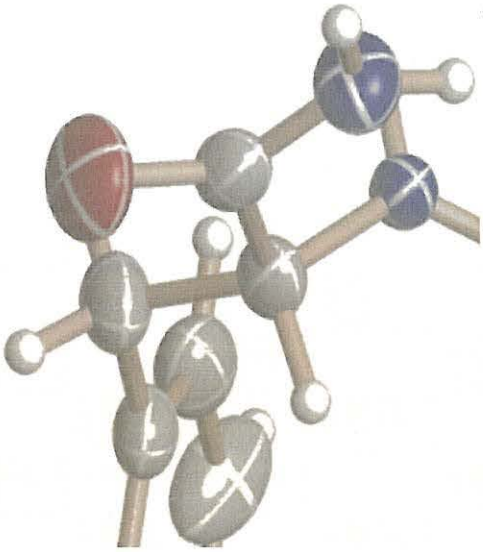

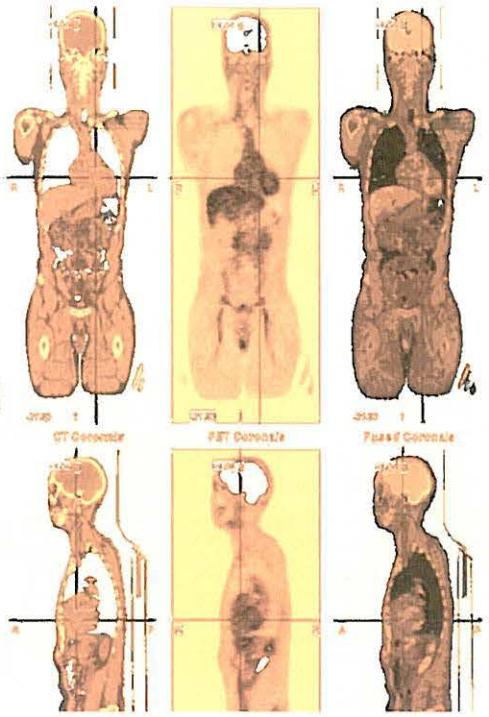

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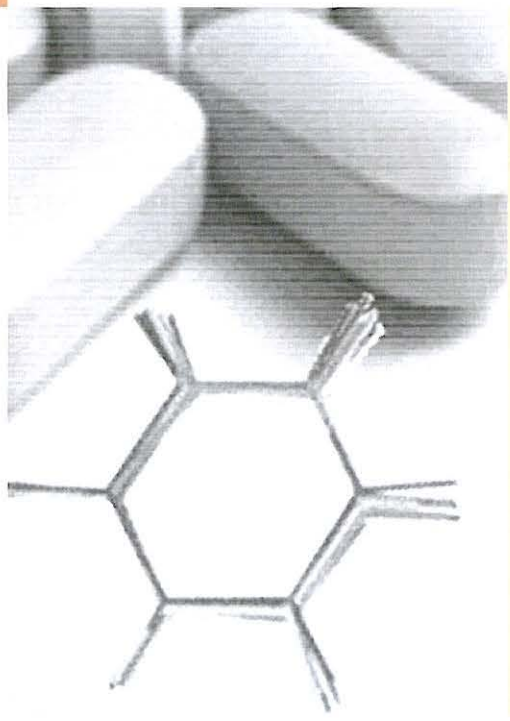

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Bioactivity of *Chenopodium ambrosioides* L.: antioxidant and antitumour potential, and detailed characterization in bioactive compounds

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Medicinal plants are recognized as important sources of novel biomolecules, which theoretically can be used in the treatment of diverse diseases. *Chenopodium ambrosioides* L. (Amaranthaceae; syn: *Dysphania ambrosioides* (L.) Mosyakin & Clemants) is an example of a plant formerly used in Portuguese traditional medicine, normally consumed as infusion of its dried leaves and flowering stems. It has diverse pharmacological applications in the treatment of influenza, cold or gastrointestinal and respiratory ailments, healing of skin ulceration caused by Leishmania species, as well as vomitive, antihelmintic, anti-inflammatory and antitumor properties [1-3]. In this study, the bioactive properties (antioxidant and antitumour activities, and hepatotoxicity) of the infusion and methanolic extract of wild *C. ambrosioides* were evaluated and compared. Furthermore, the chemical composition in hydrophilic (sugars, organic acids and phenolic compounds) and lipophilic (fatty acids and tocopherols) compounds were determined. In general, the infusion revealed higher antioxidant activity, while the methanolic extract was the only one showing antitumour effects against colon, cervical and hepatocellular carcinoma cell lines. No toxicity in non-tumour cells was observed either for the infusion or the extract. Bioactive compounds such as some sugars and organic acids, phenolic compounds, unsaturated fatty acids and tocopherols were identified and quantified in *C. ambrosioides*. As far as we know, this is the first detailed chemical characterization and bioactivity evaluation of *C. ambrosioides* methanolic extract and infusion.

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