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Biomedical Applications of *Inula* species

Diana C. G. A. Pinto^{1*}, Ana M. S. Seca^{1,2}, Artur M. S. Silva¹

¹Department of Chemistry & QOPNA, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal

²DCTD, University of Azores, 9501-801 Ponta Delgada, Portugal.

*email: diana@ua.pt

The vast genus *Inula* includes species used in traditional medicine, for the treatment of inflammatory conditions, diabetes, hypertension, and also as bactericides, among other applications. Some corroboration of these ethnopharmacological applications was attempted, for instance crude extracts activity has been evaluated and the main bioactive secondary metabolites have been identified as sesquiterpene lactones (Fig. 1). The reported activities include anti-tumour/cytotoxic and anti-inflammatory activity just to mention a few [1]. At a first glance of the literature survey seems that *Inula* spp. are a remedy for all diseases, but a carefully analysis showed that the criteria used in biological evaluations and/or result analysis present a huge lack of scientific credibility. This concern is very well expressed in a review recently published by Jürg Gertsch [2]. Moreover when plants are involved, we can find other concerning issues, which are the unequivocal plant identification [3]. For example, in several recent publications one can found a reference to *Inula crithmoides* L. (Fig. 2) but the accepted name is *Limbarda crithmoides* (L.) Dumort. These ambiguities in the published results do not credit the ethnopharmacological and natural products research and we think it is important to aware the scientific community for the importance of good practice guidelines in order to have high-quality information supporting the modernisation and further development of herbal research.

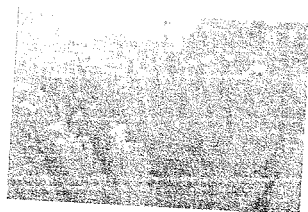
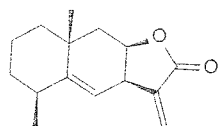


Fig. 1. Alantolactone a very common sesquiterpene in the *Inula* species
Fig. 2: *Inula crithmoides* L.

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REFERÊNCIAS

- [1] Seca, A. M. L.; Griggore, A.; Pinto, D. C. G. A.; Silva, A. M. S. *J. Ethnopharmacol.* 2014, 154, 286-310.
- [2] Gertsch, J. *J. Ethnopharmacol.* 2009, 122, 177-183.
- [3] Rivera, D.; Allkin, R.; Obón, C.; Alcaraz, F.; Verpoorte, R.; Heinrich, M. *J. Ethnopharmacol.* 2014, 152, 393-402.