BOOK OF ABSTRACTS

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Tradescantia zebrina Bosse: study of the phenolic composition and bioactive properties of a potential natural coloring ingredient

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Tradescantia zebrina Bosse is a succulent pantropical herb, native to Central America with a high capacity to grow in various conditions [1]. This plant is popularly used in cooking and traditional medicine [2]. Some species of the *Transdecantia* genus are described as possessing exceptionally stable anthocyanic compounds in plant organs, a condition of extreme importance for application in the food industry that is currently looking for potential natural coloring ingredients [3]. In this sense, the present work aimed to explore the phenolic composition and bioactive properties of the aerial parts *T. zebrina* extract. The phenolic composition of the extract was defined by High Performance Liquid Cromatography (HPLC-DAD-ESI/MS) and allowed the identification of 11 anthocyanins glycoside derivatives. Regarding the bioactive properties, i) the antioxidant activity was tested using an oxidative hemolysis assays (OxHLIA), reducing power, and free radical scavenging assay (DPPH); ii) cytotoxicity was evaluated in human tumor cells (MCF-7, breast carcinoma; NCI-H460, lung cancer; AGS, gastric carcinoma; and CaCo, colorectal adenocarcinoma) and hepatotoxicity in non-tumor cells (PLP2, pig liver; and Vero, monkey kidney cell) by the sulphorodamine B method; iii) the antimicrobial activity was evaluated against a panel of twelve food pathogens (*S. aureus*, *B. cereus*, *L. monocytogenes*, *E. coli*, *S.* Typhimurium, *E. cloacae*, *A. fumigatus*, *A. niger*, *A. versicolor*, *P. funiculosum*, *P. verrucosum var. ciclopium* and *T. viride*) using the microdilution method. The analyzed extract presented promising antioxidant activity, with promising EC_{50} values for all the testes assays, ranging from of 0.190 ± 0.001 mg/mL (DPPH), 0.061 ± 0.002 mg/mL (reducing power), and 0.057 ± 0.001 mg/mL (OxHILIA). Furthermore, the extract did not demonstrate toxicity at the maximum tested concentration (>400 µg/mL), but a remarkable activity against gastric carcinoma (AGS) was detected. Additionally, the extract showed excellent results in antibacterial and antifungal performance against all strains tested. In conclusion, it can be observed that the extract obtained from the aerial parts of *T. zebrina* represents themselves a natural antioxidants of great value for the industry, which, in addition to conferring colour to food products due to the quantity of anthocyanins, can contribute to the preservation of food products.

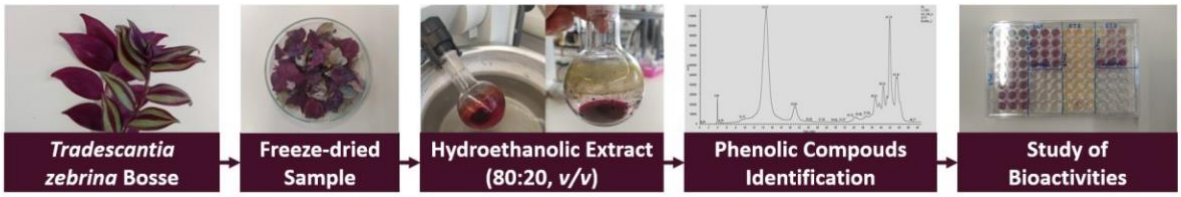

Fig.1. Study steps of the hydroethanolic extract (80:20, *v/v*) of *Tradescantia zebrina* Bosse.

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