Natural products application: Health, Cosmetic and Food

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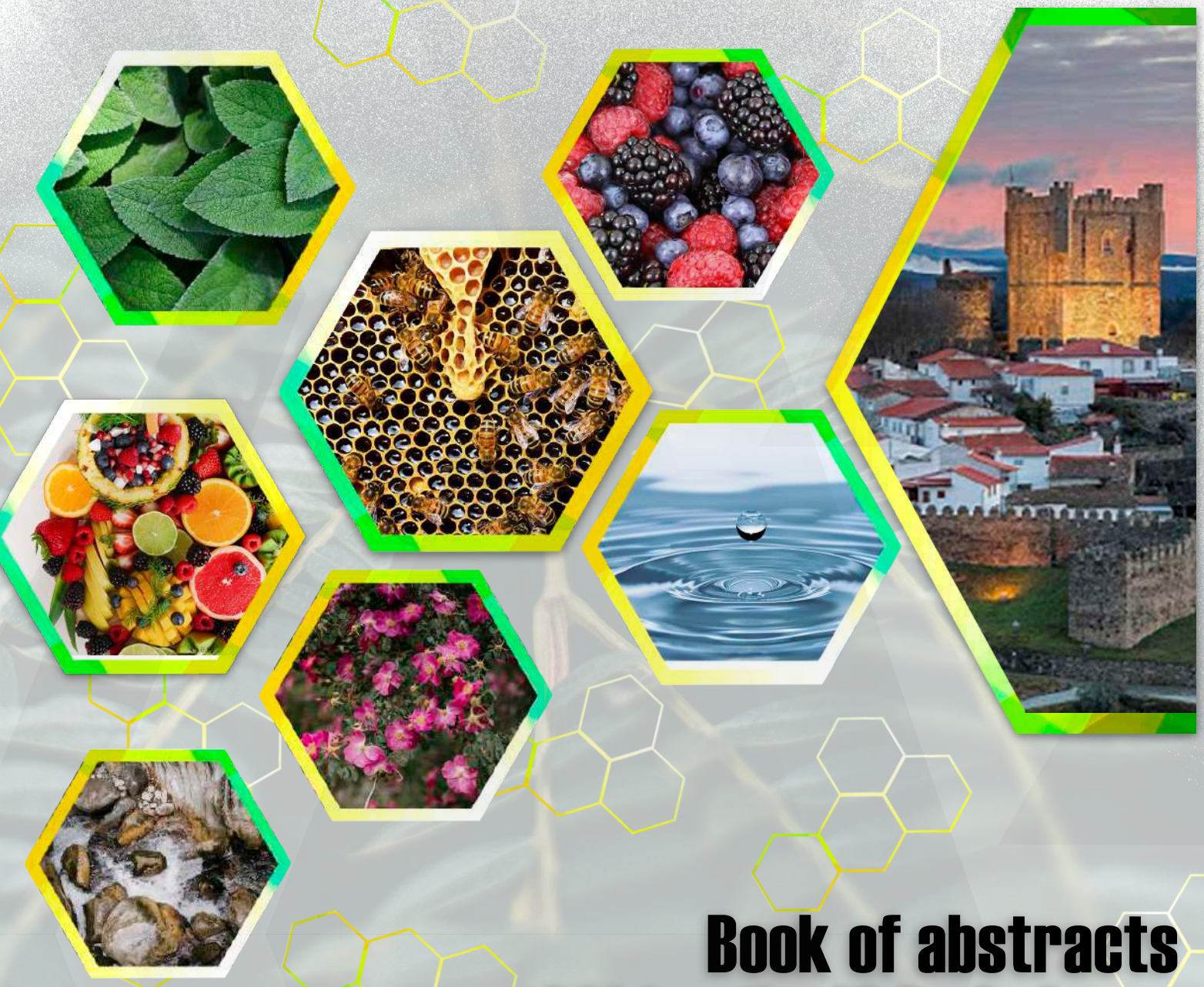

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COMMELINA ERECTA AS A SOURCE OF NATURAL BIOACTIVE COMPOUNDS

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Plants are an important source for the discovery of new products of medicinal value and unique sources for food additives, flavors, and other compounds with industrial value *Commelina erecta* L. (Commelinaceae) is an herbaceous flowering plant, popularly known as "trapoeraba" and "erva-de-santa-luzia". In folk medicine, *C. erecta* has been used as antiviral, for the treatment of haemorrhages, skin rashes and sores, and for the treatment of infections [1]. Moreover, it is also used as a wild edible plant in salads, preserves or decorating the dishes [1]. The present study aims at evaluating the bioactive potential, namely, antioxidant, cytotoxicity to tumor and non-tumor cell lines, and anti-inflammatory activities of the stem and flower of *C. erecta*. Antioxidant activity was evaluated in the hydroethanolic extracts by two *in vitro* assays measuring inhibition of lipid peroxidation using thiobarbituric acid reactive substances (TBARS) assay and antihaemolytic activity (OxHLIA). The cytotoxicity was tested using four human tumor cell lines: AGS (gastric adenocarcinoma), CaCo (colorectal adenocarcinoma), NCI-H460 (non-small cell lung cancer), MCF-7 (breast carcinoma), as well a non-tumor culture from African green monkey (Vero). Anti inflammatory activity was determined based on the nitric oxide (NO) production by a murine macrophage (RAW 264.7) cell line.
Significant differences between the evaluated extracts were observed, the hydroethanolic extract showed the best activity in the TBARS assay for the stem sample, with EC_{50} value of 0.63±0.01 mg/mL. On the other hand, in the OxHLIA assay, flower hydroethanolic extract present an IC_{50} of 5.1±0.2 μg/mL, value required to protect half of the erythrocyte population from the hemolytic action caused the used oxidative agent at Δt = 60 min. Stem sample presented effective results in the inhibition of the tested tumor cell lines, namely, AGS, CaCo and MCF-7, while flower is more effective against NCI-H460. Both extracts exhibited toxicity against non-tumoral cell lines, denoting that these extracts have cytotoxicity. The *in vitro* anti inflammatory potential of extracts was evaluated by measuring NO inhibition and the most effective extract was the flower with an EC_{50} values of 41±1 μg/mL. These results indicate that stems and flowers of *C. erecta* might be a potential source of natural biomolecules for pharmaceutical and food applications.

References
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