Natural products application: Health, Cosmetic and Food

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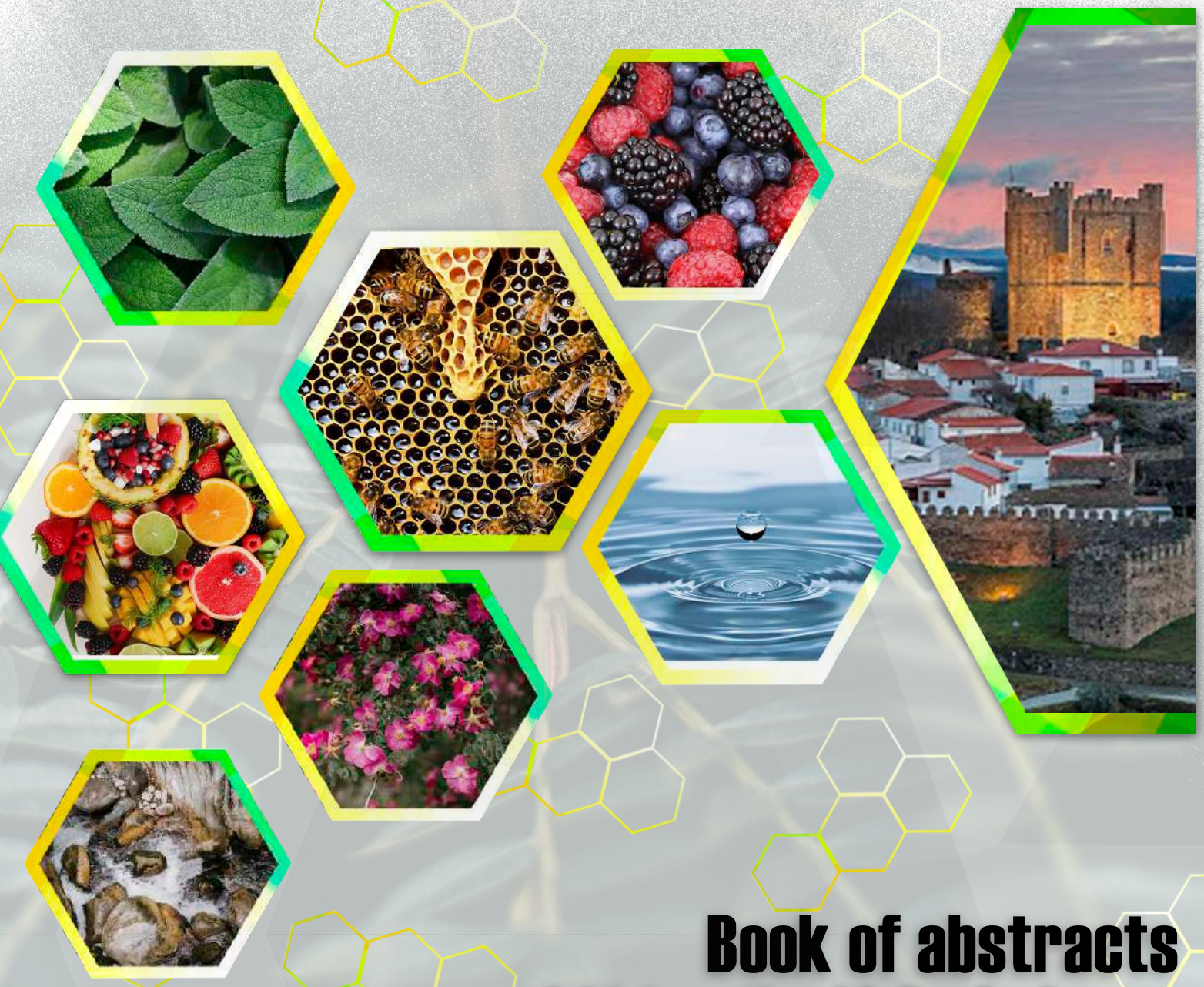

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Pitch communication

TCF-02

FLAVONOID COMPOSITION AND *IN VITRO* ANTI-PROLIFERATIVE ACTIVITY OF THE HYDROETHANOLIC EXTRACT OF *GARCINIA MANGOSTANA* L. PERICARP.

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Garcinia mangostana L., known as mangosteen, is a tropical fruit belonging to the Clusiaceae family, native from South Asia but can also be found in other tropical territories, such as South America [1,2,3]. The fruit comprises an inedible dark purple epicarp (> 60%) that encases an edible succulent pulp [2]. Nowadays, mangosteen pulp and pericarp have been used in beverages as food supplement by virtue of the traditional knowledge about its health benefits. However, correlation studies between the folk medicine usage and its chemical composition are scarce in the literature [2,3]. Aiming to elucidate part of the chemical composition, the present study carried out the determination of the main flavonoids, including anthocyanin compounds, present in mangosteen pericarp by High Performance Liquid Chromatography coupled to a diode array detector and mass spectrometry by electrospray ionization (HPLC-DAD-ESI/MSn). Furthermore, the cytotoxicity effects of its hydroethanolic extracts were evaluated on four human tumor cell lines (NCI-H460 - lung carcinoma, MCF-7 - breast carcinoma, HepG2 - hepatocellular carcinoma, and HeLa - cervical carcinoma) by the Sulforhodamine B (SRB) assay.

Mangosteen pericarp presented nine non-anthocyanin flavonoid compounds, most of which belonging to the procyanidin class (seven compounds), one taxifolin derivative (taxifolin-*O*-rhamnoside, found in low concentrations), and one quercetin derivative (quercetin-3-*O*-rutinose, found in trace amounts). Regarding the anthocyanin flavonoids compounds group, two were found and tentatively identified as cyanidin-*O*-dihexoside and delphinidin-*O*-dihexoside. Regarding the total amount of flavonoids, the extracts presented 53 ± 1 mg of non-anthocyanin flavonoids/g of extract, 3.66 ± 0.02 mg of anthocyanins/g of extract. Concerning the cytotoxic activity, the hydroethanolic extracts presented activity against all tumor cell lines studied (GI_{50} < 75 μg/mL).

The results obtained from the present study showed that mangosteen pericarp could be an interesting natural source of high added value and bioactive compounds, with the potential to the applied in several industrial fields including pharmaceutical, nutraceutical, among others.

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