



# Abstracts

**FOR**

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**(5-ISPMPF)**

**AUGUST 25 – SEPTEMBER 01 2021, NANCHANG, CHINA**



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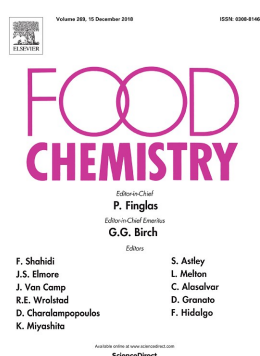
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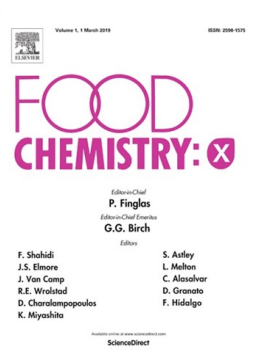
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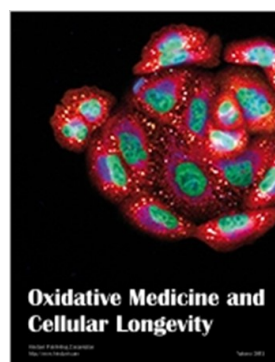
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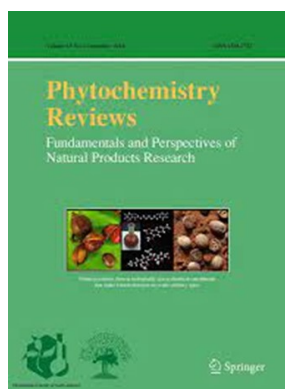
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## PP52: *Ilex paraguariensis* A. St. -Hil.: a promising source of phenolic compounds with bioactive properties

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*Ilex paraguariensis* A. St. -Hil. (yerba mate) is a tree widely cultivated in South America, and commonly used for the production of beverages such as chimarrão, tereré, and mate tea. The bioactive composition of its leaves has been associated with many benefit health effects for the human body<sup>[1]</sup>. It is estimated that more than a liter of these drinks are consumed daily by approximately 30% of the South American population<sup>[2]</sup>. Throughout the industrial processing of this plant for beverage production an enormous amount of by-products are generated, as also during the raw material harvest, in which about 5 tons per hectare of solid residues from the larger-diameter yerba branches are discarded in the soil<sup>[3]</sup>. Several research studies have been carried out regarding the use of these by-products by the food industry, being a very interesting and promising alternative for obtaining added-value bioactive compounds<sup>[3]</sup>. This work aimed to compare the phenolic composition and bioactive potential of dehydrated yerba mate extracts (EMNP) and yerba mate by-products (EMP) obtained from an industrial production in the state of Paraná (Brazil). The individual phenolic profile was determined by HPLC-DAD-ESI/MS and the bioactive potential was assessed in hydroethanolic extracts through *in vitro* tests for antioxidant, antimicrobial, anti-inflammatory, and cytotoxicity activity. In total, seven phenolic compounds were tentatively identified, in which six phenolic acids: 4-*O*-caffeoylquinic acid, 5-*O*-caffeoylquinic acid (chlorogenic acid), 4-*O*-*p*-coumaroylquinic acid, 3,4-*O*-dicaffeoylquinic acid, acid 3, 5-*O*-dicaffeoylquinic acid, and 4,5-*O*-dicaffeoylquinic acid; and one flavonoid: quercetin-3-*O*-rutinoside. The higher amount of phenolic compounds was found in by-products of yerba mate (EMP), in a total of 9.3±0.2 mg/g of extract. Regarding the bioactive properties, the hydroethanolic extracts obtained revealed a substantial antimicrobial potential against the tested bacterial and fungi strains, as well as a very promising antioxidant and anti-inflammatory activities, and without toxicity for non-tumor cell lines. With the present study is intend to find new sources of bioactive compounds with preserving capacities for the substitution of artificial additives in food products.

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