



Abstracts

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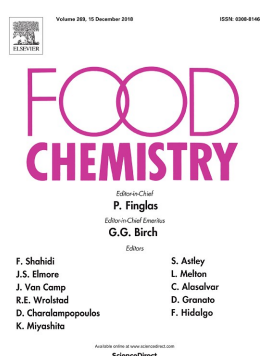
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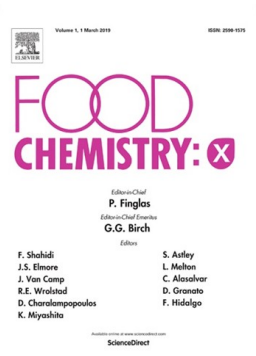
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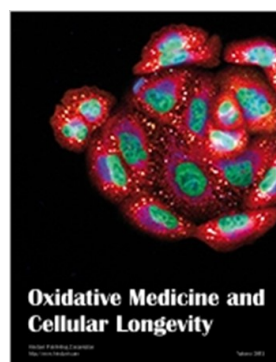
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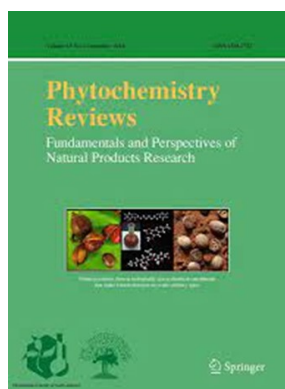
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OL34: The influence of lemon thyme in the phenolic composition and bioactive properties of medicinal and aromatic plants tisanes

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Lemon thyme is used for cooking and normally consumed as an infusion, presenting antimicrobial, anti-inflammatory, and antioxidant potential[1]. However, the presence and importance of this specie in tisanes of medicinal and aromatic plants (MAP) for infusion preparation is little recognized. It is also known that mixtures of MAP show more favorable phenolic composition and bioactive properties than the individual plants[2]. For that, the present study aimed to characterize the phenolic composition by HPLC-DAD/ESI-MS of three tisanes prepared from MAP mixtures containing lemon thyme, as also study their bioactive properties, namely antioxidant, antimicrobial, anti-inflammatory, cytotoxic, and anti-diabetic activities.

Thus, the tisane composed by lemon thyme, Shrubby St. John's Wort, cloves, and cinnamon, was the most promising mixture, presenting the lowest EC₅₀, GI₅₀, and IC₅₀ values for the inhibition of the lipid peroxidation, anti-inflammatory/cytotoxicity against tumor cell line of adenocarcinoma breast, and antidiabetic activity, respectively. In addition, it also showed the highest concentration of phenolic acids (caffeoylquinic acids derivatives) and flavan-3-ols (catechin derivatives). For the anti-hemolytic and antimicrobial activities (Gram-negative bacteria), the mixture composed by lemon thyme, lavender, common thyme, and purple perennial showed the lowest IC₅₀ and MIC (higher bioactive potential) values, respectively. Finally, the tisane containing lemon thyme, basil, peppermint, calendula, and rosemary proved to be the best mixture to inhibit the growth of the tumor cell lines HepG2, NCI H460 and HeLa. The results obtained reinforce the principle of synergy between mixtures of MAP, making it possible to obtain promising sources of bioactive compounds with different phenolic profiles with high added value that can be applied in the pharmaceutical and food industry for the development of new functional products.

Acknowledgments

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1. Garay E L R. 2017.

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