



Abstracts

FOR

5th International Symposium on Phytochemicals in Medicine and Food

(5-ISPMPF)

AUGUST 25 – SEPTEMBER 01 2021, NANCHANG, CHINA



Welcome Address

It is our great pleasure to welcome you to the 5th International Symposium on Phytochemicals in Medicine and Food (5-ISPMPF), which is organized by the International Association of Dietetic Nutrition and Safety (IADNS), Phytochemical Society of Europe (PSE), Physiological Society of Japan, and Phytochemical Society of Asia (PSA). 5-ISPMPF is jointly organized by Nanchang University, Jiangsu University and University of Vigo. Over 410 scientists from 62 countries and other 350 scientists from China have registered to attend this online conference. 5-ISPMPF also has obtained the supports from several international journals including Food Chemistry Marine Drugs, International Journal of Molecular Sciences, Food Chemistry X, Oxidative Medicine and Cellular Longevity, Phytochemistry Reviews, and so on. The international organizing committee and scientific committee board of 5-ISPMPF assembled an exciting and diverse program, featuring 16 plenary lectures, 82 invited lectures, 142 oral presentation, a graduate student forum consisting of 70 short lecture, and more than 100 posters, which dedicate to creating a stage for exchanging the update research results in the phytochemicals for food and human health.

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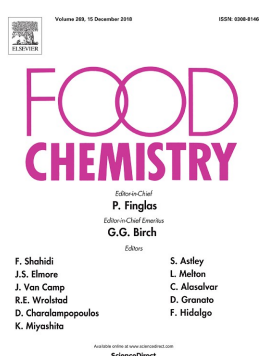
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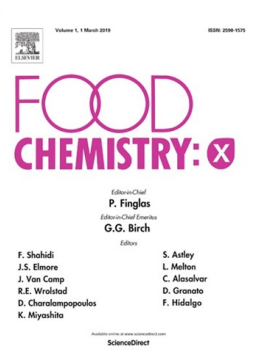
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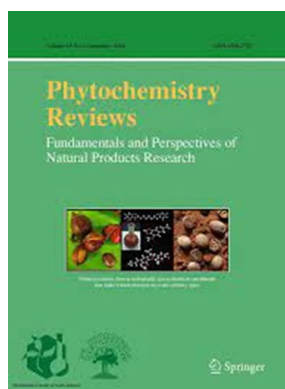
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GL34: Optimization of heat-assisted extraction of bioactive compounds from *Thymus vulgaris* L.

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Aromatic and medicinal plants have been used worldwide since ancient times, for being attributed to them capable bioactive properties associated mainly with the relevant composition of several phytochemicals, including polyphenols^[1]. *Thymus vulgaris* L. is a species described as a potential source of natural ingredients with application in the food industry, but also in the cosmetic and therapeutic industry due to its antibacterial, antifungal, and anti-inflammatory effects^[2]. In this sense, the present study aimed to optimize the extraction of phenolic compounds from *T. vulgaris* through the heat-assisted technique (HAE), aiming at its potential for exploration in industry. For this propose, three independent variables, time (t , minutes), temperature (T , °C) and solvent (S , % of ethanol) were combined in a five-level central composite rotatable design coupled with the response surface methodology (RSM). The extraction yield and the content of phenolic compounds identified by HPLC-DAD-ESI/MS were the experimental responses used in the optimization. The polynomial models were successfully fitted to the experimental data and used to determine the optimal HAE conditions. Nineteen phenolic compounds were identified, nine of which were identified as phenolic acids (mainly caffeic acid derivatives), ten as flavonoids: flavan-3-ols (catechin derivatives), flavones (quercetin derivatives), flavonols (apigenin and luteolin derivatives) and flavanones (eriodictyol derivatives). The conditions that appear to be optimal for the extraction of phenolic compounds and that allowed the experimental validation of the predictive model are 3% solution ethanol: water (v/v) for 89 minutes at a temperature of 98° C. The optimization of extraction is important from an industrial point of view, as it allows obtaining extracts with a high content of bioactive compounds from natural matrices, in this case, *T. vulgaris* leaves. Considering that the phenolic composition appears in literature as a direct influence on bioactive properties, optimization processes allows a better exploitation of extracts, ensuring the greatest economic reduction for industries.

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