



Abstracts

FOR

5th International Symposium on Phytochemicals in Medicine and Food

(5-ISPMPF)

AUGUST 25 – SEPTEMBER 01 2021, NANCHANG, CHINA



Executive chairman

Shaoping Nie, Nanchang University, China

Co-chairman

Jesus Simal-Gandara, University of Vigo, Spain

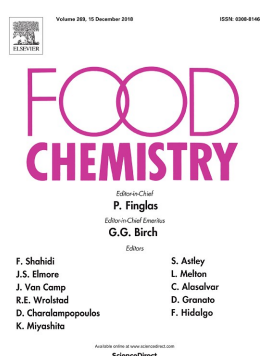
Organizing Committees

Baiyi Lu, Zhejiang University, China
Ningyang Li, Shandong Agricultural University
Fang Chen, China Agricultural University, China
Zhaojun Wei, Hefei University of Technology, China
Xiaobo Zou, Jiangnan University, China
Haijin Mou, Ocean University of China, China
Tiehua Zhang, Jilin University, China
Weibin Bai, Jinan University, China
Chongdesun, Zhejiang University, China
Ping Shao, Zhejiang University of Technology, China
Jing Wang, Zhejiang University, China
Lei Chen, Guangdong Ocean University, China
Fang Wang, Nanjing University of Finance & Economics
Lijun You, South China University of Technology
Xiaojun Huang, Nanchang University
Lingjun Ma, China Agricultural University
Hui Cao, Guangdong Ocean University
Chao Zhao, Fujian A & F University
Huifan Liu, Zhongkai University of Agriculture and Engineering
Xiaodan Fu, Nanchang University
Hongxun Tao, Jiangsu University
Lu Li, Beijing Technology and Business University

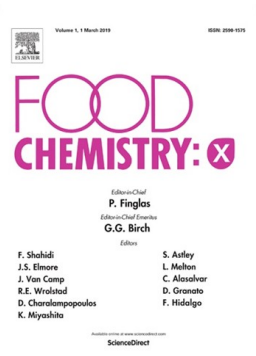
International Scientific Committees

Jianbo Xiao, China & Spain (Chairman)
Adam Matkowski, Poland
Aline Priscilla Gomes da Silva, Brasil
Amin Ismail, Malaysia
Amir Reza Jassbi, Iran
Ana Sanches-Silva, Portugal
Anca Miron, Romania
Avi Shpigelman, Israel
A. Gulcin Sagdicoglu Celep, Türkiye
Bernhard Hennig, USA
Carlos L. Cespedes Acuña, Chile
Christian Carpené, France
Daniel Granato, Brazil
Daniela Andrea Ramirez, Argentina
Domenico Trombetta, Italy
Elwira Sieniawska, Poland
Esra Capanoglu Guven, Turkey
Efsthathia Ioannou, Greece
Francisco A. Macias, Spain
Francesca Giampieri, Italy
Franz Bucar, Austria
Didem Sohretoglu, Turkey
Haroon Khan, Pakistan
Hidayat Hussain, Germany
Hye-Kyung Na, South Korea
Ipek Sutar, Turkey
Jianbo Xiao, China
Jelena Djordjevic, Serbia
José M. Alvarez-Suarez, Ecuador
Katalin Patonay, Hungary
Vivek K. Bajpai, South Korea
Krystyna Skalicka-Woźniak, Poland
Laura Cornara, Italy
Li-Shu Wang, USA
Loizzo Monica Rosa, Italy
Maria Daglia, Italy
Maria José U. Ferreira, Portugal
Maria Graça Campos, Portugal
Marc Diederich, South Korea
Mario M. Martinez, Denmark
Moklesur Rahman Sarker, Bangladesh
Maurizio Battino, Italy
Milen I. Georgiev, Bulgaria
Miroslav Strnad, Czech
Mohamed Ali Ali Farag, Egypt
Nataša Poklar Ulrih, Slovenia
Nilufar Z. Mamadaliyeva, Uzbekistan
Nokwanda P. Makunga, South African
Noureddine Djebli, Algeria
Petra Högger, Germany
Pharkphoom Panichayupakaranant, Thailand
Randolph Arroo, UK
Robert Verpoorte, Netherlands
Rosa Tundis, Italy
Salah Akkal, Algeria
Simona Dragan, Romania
Thomas Efferth, Germany
Thomas Netticadan, Canada
Yoshinori Asakawa, Japan
Yoshinori Marunaka, Japan
Young-Joon Surh, South Korea
Yoshinori Marunaka, Japan

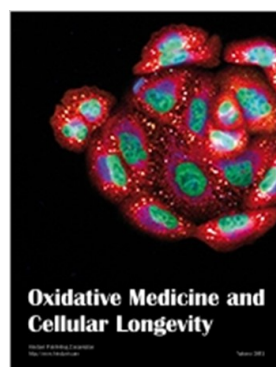
Supporting Journals:



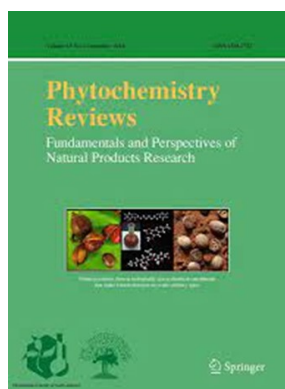
(Elsevier, IF 7.514)



(Elsevier, IF 5.182)



(Hindawi, IF 6.534)



(Springer, IF 5.374)



(MDPI, IF 5.118)



(MDPI, IF 5.923)

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 Northwest University and Shaanxi Normal University. Over 800 scientists from 66 countries have registered to attend this conference. More than 400 scientists 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 90 posters, which dedicate to creating a stage for exchanging the update research results in the phytochemicals for food and human health.



Prof. Shaoping Nie
Nanchang University, China
Executive Chairman



Jesus Simal-Gandara
University of Vigo, Spain
Co-Chairman

PP88: Recovering citric acid from orange juice production residues

Filipa A. Fernandes^{1,2}, Sandrina A. Heleno¹, Márcio Carochó¹, José Pinela¹, Miguel A. Prieto², Isabel C. F. R. Ferreira¹, Lillian Barros¹

¹*Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal*

²*Grupo de Nutrición y Bromatología, Departamento de Química Analítica y Alimentaria, Facultad de Ciencias de Ourense, Universidad de Vigo-Ourense Campus, E-32004 Ourense, Spain.*

A good part of the world production of oranges is destined to the production of juices, generating a huge amount of residues (e.g. peels), which are mostly used for the production of animal feed. However, there is still a great amount that is deposited in landfills generating an undesirable environmental impact^[1,2,3]. There are several studies that prove the biological activities (e.g. antimicrobial, antioxidant and anticancer) of orange peels, being important to study the best way to extract the compounds that grant such activities, thus creating high added value to these residues^[4]. This study has as its main objective the optimization of citric acid extraction (high antimicrobial power) from orange peels, in order to value citrus by-products through their recycling into natural ingredients. For the optimization of the ultrasound-assisted extraction, a central composite design coupled with RSM was implemented by combining five levels of the independent variables ethanol concentration (0–100%), time (2–45 min), and ultrasonic power (50–500 W). The levels of citric acid were determined by UFLC-PDA and used as response. Design-Expert software was used for regression and graphical analysis of the data. The developed theoretical models were successfully fitted to the experimental data, statistically validated based on high F-values and R² and used to predict the optimal conditions that maximize the recovery of citric acid from the citrus peels. With the optimal processing conditions - short time, high ultrasonic power and extraction solvent containing a low percentage of ethanol - yielding about 10 g of this compound per 100 g of dry peels. Orange peels revealed an interesting content of citric acid, although a deeper analysis of these ingredients is necessary to allow the industries to implement sustainable extraction techniques and to use citric acid recovered from citrus residues as a food preservative.

Acknowledgments

To FCT (Portugal) for financial support through national funds FCT/MCTES to CIMO (UIDB/00690/2020), for the PhD grant (SFRH/BD/145467/2019) of F. Fernandes, the contract of L. Barros through the institutional scientific employment program-contract and the contracts of M. Carochó (CEECIND/00831/2018), S.A. Heleno (CEECIND/03040/2017) and J. Pinela (CEECIND/01011/2018) through the individual scientific employment program-contract. To MICINN for the financial support Ramón & Cajal given to researcher M.A. Prieto; to the Government of Galicia for the financial support of Axudas Conecta Peme to the IN852A 2018/58 NeuroFood project. To Kontakttotal - Consultores Associados, Lda. - Dep. CuraNatura for collaborating on this project.

1. Camargo FP, Sakamoto IK, Bize A, et al. *International Journal of Hydrogen Energy*, 2021, 46, 7794-7809.
2. Lukitawesa, Eryildiz B, Mahboubi A, et al. *Innovative Food Science and Emerging Technologies*, 2021, 67, 102545.
3. Shehata MG, Awad TS, Asker D, et al. *Current Research in Food Science*, 2021, 4, 326-335.
4. Teigiserova DA, Tiruta-Barna L, Ahmadi A, et al. *Journal of Environmental Management*, 2021, 280, 111832.