Abstracts

FOR

5th International Symposium on

Phytochemicals in Medicine and Food

(5-ISPMF)

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-ISPMF), 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-ISPMF is jointly organized by Nanchang University, Jiangsu University and University of Vigo. Over 410 scientists from 62 counties and other 350 scientists from China have registered to attend this online conference. 5-ISPMF also has obtained the supports form several international journals including Food Chemistry Marine Drugs, International Journal of Molecular Sciences, Food Chemistry X, Oxidative Medicine and Cellular Longevity, Phytochemsitry Reviews, and so on. The international organizing committee and scientific committee board of 5-ISPMF 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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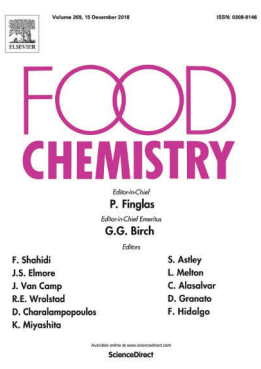

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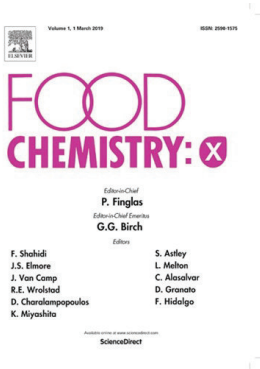

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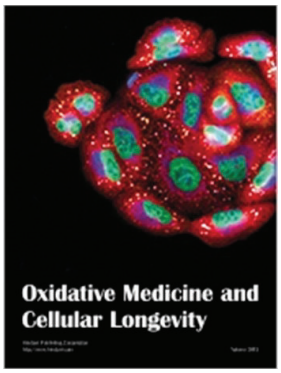

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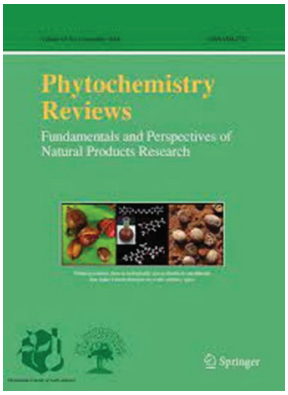

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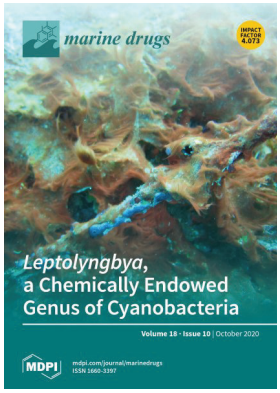

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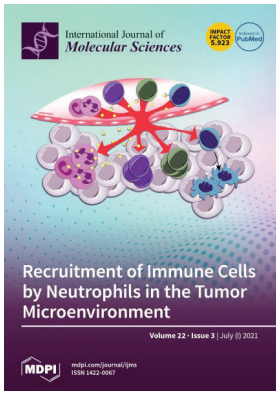

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14:50-15:00	GL42	**Haihua Ji, Nanchang University, China** *In vitro* gastrointestinal digestion and fermentation models and their applications in food carbohydrates
15:00-15:10	GL43	**Filipa A. Fernandes, Instituto Politécnico de Bragança, Portugal** Nutritional and chemical characterization of the fruit of Adansonia digitata L.
15:10-15:20	GL44	**Li Yang, University of Macau, China** The effect of high-carbohydrate diet on the bioavailability of polyphenols and its mechanism
15:20-15:30	GL45	**Mariana C. Pedrosa, Instituto Politécnico de Bragança, Portugal** Ultrasound-assisted extraction of leaves of the olive tree (*Olea europaea* L.): response surface analysis optimization approach
15:30-15:40	GL46	**Xin Qi, Yanbian University, China** Research progress on pharmacological components and pharmacological effects of Perilla
15:40-15:50	GL47	**Dhruv Thakur, National Institute of Food Technology Entrepreneurship and Management (NIFTEM), India** Oleogel as a frying medium for preparation of potato chips
15:50-16:00	GL48	**Ruifeng Wang, Huazhong Agricultural University, China** Anti-obesity activity of B-type proanthocyanidin dimers: a structure-activity relationship study
16:00-16:10	GL49	**Agnese Spadi, Instituto Politécnico de Bragança, Portugal** Chemical composition and bioactive properties of *Eucalyptus globulus* L. essential oil
16:10-16:20	GL50	**Yangyang Jia, Huazhong Agricultural University, China** Effect of persimmon tannins on the emulsification characteristics of persimmon pectin
16:20-16:30	GL51	**Myadagbadam Urtnasan, Institute of Traditional Medicine and Technology, Mongolia** The validation of HPLC method of piperine determination in *Haliforte capsule*
16:30-16:40	GL52	**Jinjin Liu, Nanchang University, China** Effect of different treatments on the anthraquinones of *Cassia obtusifolia* seeds polysaccharides and its chemical composition
16:40-16:50	GL53	**Jargalsaikhan Gombodorj, Mongolian National University of Medical Sciences, Mongolia** The effect of khurtsiin deed-6 on nitroglycerin induced migraine model in rat
16:50-17:00	GL54	**Lingchao Miao, University of Macau, Macau, China** Anti-diabetic potential of apigenin, luteolin, and baicalein via partially activating PI3K/Akt/Glut-4 signaling pathways in insulin-resistant HepG2 cells
17:00-17:10	GL55	**Iyanuoluwa Olubukola Ademola, Federal University of Technology, Nigeria** Anti-amnestic effect of caffeine, catechin and theobromine on scopolamine-induced cognitive and neurochemical impairments in Wistar albino rats
17:10-17:20	GL56	**Xin Li, Fujian Agriculture and Forestry University, China** Structural characteristics of butylated lotus seed starch and its impact on gut microbiota
		Session 4 **Mentor: Adriana Trifan, Saioa Gomez-Zorita, Elwira Sieniawska**
17:20-17:30	GL57	**Yuanyuan Liu, Fujian Agriculture and Forestry University, China** Anti-aging activities of green alga *Ulva lactuca* oligosaccharide via the brain-gut-microbiome axis in diabetic mice
17:30-17:40	GL58	**Tao Xu, Zhejiang University, China** Modulating the digestibility of cassava starch by esterification with phenolic acids
17:40-17:50	GL59	**Maria Carpena, University of Vigo, Spain** Microwave-assisted extraction from brown algae: the first step for their in-depth analysis
17:50-18:00	GL60	**Hongcong Song, Northwest A&F University, China** Profiling of terpene aroma glycosides in grapes by UPLC-Q-TOF/MS
18:00-18:10	GL61	**Ajay V. Chinchkar, National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Inida** Effect of polyvinyl acetate (PVAc) coating on postharvest quality of lemon at ambient storage
18:10-18:20	GL62	**Suhuan Mei, Jiangsu University, China** Investigation into the anti-inflammatory mechanism of coffee leaf extract in LPS-induced Caco-2/U937 co-culture model through cytokines and NMR-based untargeted metabolomic analyses
18:20-18:30	GL63	**Xiaodan Lu, Fujian Agriculture and Forestry University, China** Inhibition effect of triglyceride accumulation by large yellow croaker Roe DHA-PC in HepG2 cells
18:30-18:40	GL64	**Paula Garcia-Oliveira, University of Vigo, Spain** Characterization of *in vitro* antioxidant, antitumor and anti-inflammatory properties of plant species from Rosaceae family
18:40-18:50	GL65	**Rili Hao, Shandong Agricultural University, China** Caffeic acid phenethyl ester against cadmium-induced spleen toxicity in mice: Role of miR-182-

GL49: Chemical composition and bioactive properties of *Eucalyptus globulus* L. essential oil

Agnese Spadi[1,2], Virginie Xavier[1,]*, Piernicola Masella[2], Sandrina Heleno[1], Joana S. Amaral[1], Tânia C.S.P. Pires[1], Ricardo C. Calhelha[1], Isabel C.F.R. Ferreira[1], Lillian Barros[1]
[1]*Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal*
[2]*Dipartimento di Scienze e Tecnologie Agrarie, Alimentari Ambientali e Forestali (DAGRI), Piazzale delle Cascine 18 - 50144 Firenze, Italy*

Eucalyptus is a large genus of tall evergreen plants belonging to the Myrtaceae family that comprises about 900 species and subspecies[1]. It is native to Australia but currently is planted all around the world being one of the most important tree for its several uses such as timber, pulp and essential oil[2]. In recent years, the demand of *Eucalyptus* sp. essential oil has significantly increased as it has been approved as a natural additive. It is widely used in food, flavor, pharmaceutical, and perfumery industries, thanks to its many biological properties, including antibacterial, antifungal, analgesic and anti-inflammatory properties [3-4]. *Eucalyptus* sp. leaves in particular are rich in essential oil and its chemical composition depends on several factors, both intrinsic and extrinsic ones, such as environment and agronomic practices[5].
The aim of this work was to characterize the essential oil obtained from *Eucalyptus globulus* L. dry leaves and assessing its antioxidant (DPPH and reducing power), antimicrobial (microdilution method against pathogenic bacteria) and cytotoxic properties. A conventional Clevenger apparatus was used to extract the essential oil by hydrodistillation for 3 h. The essential oil yield was 2.2 ± 0.3 %. The chemical composition of the oil was determinated by GC-MS analysis which enabled the identification of 94% of total compounds in common eucalyptus essential oil. The major compounds were eucalyptol, alpha-pinene, globulol, alpha-terpinyl acetate, alpha-terpineol and aromadendrene. From a qualitative point of view, the obtained results are in good agreement with the data available from the literature, considering the genetics and environment variations that may occur [5]. The antioxidant activity was evaluated by DPPH radical scavenging effect and reducing power. For DPPH assay an EC_{50} value of 145.5 ± 0.7 mg/mL was obtained, while for reducing power assay an EC_{50} value of 3.0 ± 0.2 mg/mL was presented. Concerning the cytotoxic activity against four tumor cell lines (AGS - gastric, NI-H460 – lung, CaCo – colon and MCF-7- breast), the best results were revealed on the inhibition of the colon cancer cell line with GI_{50} value of 73 ± 5 μg/mL. The minimum inhibitory concentration (MIC) and the minimum bactericidal concentration (MBC) were tested against a large panel of several common food and clinical bacteria evidencing a wide spectrum antibacterial activity against the selected bacteria. A strong activity in a concentration range between 2.5 and 0.6 % was reported again *Escherichia coli, Listeria monocytogenes* (clinical isolate), Methicillin-resistant *Staphylococcus aureus* (MRSA) for clinical bacteria and again *Yersinia enterocolitica, Listeria monocytogenes* (ATCC), *Enterobacter Cloacae, Staphylococcus aureus* and *Bacillus cereus* for food bacteria. Overall, the results revealed that essential oils from eucalyptus are a potential and natural source of bioactive substances for bio-based industries.

Acknowledgments:
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