



# Abstracts

**FOR**

## 5<sup>th</sup> International Symposium on Phytochemicals in Medicine and Food

**(5-ISPMF)**

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



23:20-23:35	<b>OL7: Mohamed Elashal, Menoufia University, Egypt</b> Recent insights into chemical and pharmacological studies of bee bread
23:35-23:50	<b>OL8: Paz Otero, University of Vigo, Spain</b> New toxic microalgae metabolites and their presence in marine food products
23:50-00:05	<b>OL9: Eduardo Bruno Macêdo Viana, State University of Southwestern Bahia, Brazil</b> Functional potential of palm juice ( <i>Nopalea cochenillifera</i> L. Salm-Dyck) flavored with pineapple
	<b>26 August</b> <b>Session 4</b> <b>Polyphenols and health (I)</b> <b>(Elwira Sieniawska, Baiyi Lu)</b>
00:15-00:45	<b>PL4: Li-Shu Wang, Medical College of Wisconsin, USA</b> A food-based approach for cancer immunoprevention
00:45-01:10	<b>IL10: Esra Capanoglu, Istanbul Technical University, Turkey</b> Bioaccessibility and bioavailability of cranberrybush ( <i>Viburnum opulus</i> ) polyphenols using a combined assay of simulated in vitro digestion and Caco-2 cell model: effects of food matrix and non-thermal treatments
01:10-01:35	<b>IL11: Ana Clara Aprotosoie, Grigore T. Popa University of Medicine and Pharmacy Iasi, Romania</b> Modulatory effects of plant polyphenols on genomic damage and their clinical relevance
01:35-01:50	<b>OL10: Filipa Mandim, Universidad de Salamanca, Spain</b> How does the maturation state of cardoon bracts influence its phenolic composition and bioactivity?
01:50-02:05	<b>OL11: Sümeyra Gültekin, Biotechnology Research Center of Ministry of Agriculture and Forestry, Turkey</b> Recent developments of dietary supplements and polyphenols on immune system: mechanism of action and clinical implications
02:05-02:20	<b>OL12: Jianbo Xiao, University of Vigo, Spain</b> Stability of quercetin in cell culture
	<b>Session 5</b> <b>Natural products resources (I)</b> <b>(Aline Priscilla Gomes da Silva, Lijun You)</b>
02:30-02:55	<b>IL12: Adam Matkowski, Wrocław Medical University, Poland</b> Making friends with foes – remarks on utilizing invasive plants as medicinal herbs
02:55-03:20	<b>IL13: Thilaghavani Nagappan, Universiti Malaysia Terengganu, Malaysia</b> Bioprospecting the potential of <i>Murraya koenigii</i> and <i>Murraya paniculata</i> from Terengganu, Malaysia
03:20-03:45	<b>IL14: Amir Reza Jassbi, Shiraz University of Medical Sciences, Iran</b> Cytotoxic constituents of sponges associated bacteria from the Persian Gulf
03:45-04:00	<b>OL13: Eslam Shedid, Menoufia University, Egypt</b> Cyanobacteria - from the oceans to the potential biotechnological and biomedical applications
04:00-04:15	<b>OL14: Dimas Rahadian Aji Muhammad, Universitas Sebelas Maret, Indonesia</b> Phytochemicals and bioactivity potency of Indonesian culinary herbs and spices
04:15-04:30	<b>OL15: Yit-Lai Chow, Universiti Tunku Abdul Rahman, Malaysia</b> <i>Caenorhabditis elegans</i> , a versatile screener for phytochemical bioactivities
04:30-04:45	<b>OL16: Shivraj Hariram Nile, Zhejiang Chinese Medical University, China</b> Food waste to health- Bioactive compounds from food biowaste as an antioxidant, anticancer and enzyme inhibitors
	<b>Plenary lecture 2</b> <b>(Jianbo Xiao)</b>
14:00-14:30	<b>PL5: Maurizio Battino, Polytechnic University of Marche, Italy</b> Unraveling the molecular mechanisms underlying the healthy effects elicited by honey bioactive compounds
14:30-15:00	<b>PL6: Yoshinori Marunaka, Kyoto Industrial Health Association, Japan</b> Stimulatory mechanisms of mice airway ciliary beating by Hochu-ekki-to (TJ-41) via elevation of intracellular Ca <sup>2+</sup> concentration mediated through enhancement of TRPV4 expression
15:00-15:30	<b>PL7: Lillian Barros, Instituto Politécnico de Bragança, Portugal</b> Food additives from natural origin: extraction, stabilization and application
	<b>Session 6</b> <b>Anti-obesity natural products</b> <b>(Thomas Efferth, Elwira Sieniawska)</b>
15:55-16:25	<b>PL8: Milen I. Georgiev, Center of Plant Systems Biology and Biotechnology, Bulgaria</b> Obesity management potential of plant extracts and their active principles
16:25-16:40	<b>OL17: Luigi Milella, University of Basilicata, Italy</b> <i>Hura crepitans</i> L. extract as source of bioactive phytochemicals delivered in liposomal formulation
16:40-16:55	<b>OL18: Saioa Gomez-Zorita, University of the Basque Country, Spain</b> Comparative effects of resveratrol and its analog pterostilbene on obesity and non-alcoholic fatty liver disease
16:55-17:10	<b>OL19: Garcia-Diaz DF, Universidad de Chile, Chile</b> Calafate, a Chilean native fruit, a potential double hit against obesity and its co-morbidities

## OL10: How does the maturation state of cardoon bracts influence its phenolic composition and bioactivity?

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*Cynara cardunculus* L. (cardoon) is an herbaceous plant native to the Mediterranean basin. It is widely used due to its nutritional, pharmacological, and industrial applications<sup>[1]</sup>. Besides its consumption in various recipes, due to its rich nutritional composition and health-promoting effects, it is also widely used in several industry sectors (e.g., cheese manufacturing, and in the production of pharmaceuticals, bioenergy, and biomass). Its multiple applications are extremely important for the enhancement of the species' added value<sup>[2]</sup>. However, factors such as genetic information, plant tissue, and maturity state can influence the potential of the species<sup>[1,2]</sup>. The study of the influence of all these variables is extremely important for its proper use, as well for its economic valorisation. Cardoon bracts were collected in Greece at eight harvesting dates (Principal Growth Stage between 5 and 8/9). The phenolic composition of their hydroethanolic extracts was analysed by HPLC-DAD-ESI/MS. The antioxidant activity was evaluated with two cell-based assays: thiobarbituric acid reactive substances (TBARS) formation inhibition and oxidative haemolysis assay (OxHLIA). The anti-inflammatory activity was evaluated by determining the extracts' ability to inhibit nitric oxide production in a murine macrophage cell line. Finally, cytotoxicity was assessed against four human tumour cell lines and a porcine liver primary cell culture using the sulforhodamine B assay. Twelve phenolic compounds were tentatively identified, with 3,5-*O*-dicaffeoylquinic acid and apigenin-7-*O*-glucuronide being the major compounds detected. Immature bracts presented the highest phenolic compounds content, as also the highest anti-inflammatory and cytotoxic activities. Regarding the antioxidant activity, immature bracts revealed the highest ability to inhibit the formation of TBARS. For OxHLIA, cardoon bracts harvested at more advanced maturation stages were the ones that revealed the highest activity. In conclusion, it was verified that the maturation stage influences the phenolic composition and the biological potential of cardoon bracts. However, more studies are needed to understand and correlate the compounds responsible with the observed bioactivities.

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1. Dias M I, Barros L, Barreira J C M, et al. Food Chemistry, 2018, 196-202.

2. Mandim F, Petropoulos S A, Dias M I, et al. Food Chemistry, 2021, 127744.