Abstracts

FOR

5th International Symposium on

Phytochemicals in Medicine and Food

(5-ISPMF)

AUGUST 25 – SEPTEMBER 01 2021, NANCHANG, CHINA

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-

GL64: Characterization of in vitro antioxidant, antitumor and anti-inflammatory properties of plant species from Rosaceae family

Paula Garcia-Oliveira[1,2], M. Barral-Martinez[1], A. Jarboui[1], T. Oludemi[1,2], P. Garcia-Perez[1], J. Pinela[2], F. Mandim[2], J. Simal-Gandara[1], I.C.F.R. Ferreira[2], Miguel A. Prieto[1,2,*], L. Barros [2,*]
[1]*Nutrition and Bromatology Group, Faculty of Food Science and Technology, University of Vigo, Spain*
[2]*Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Bragança, Portugal*

Since ancient times, humans have employed different plant species to prepare traditional remedies and treat diseases, due to the health-promoting effects associated with these plants. Among them, several species belonging to the Rosaceae family, namely *Agrimonia eupatoria* L., *Filipendula ulmaria* (L.) Maxim. and *Rosa canina* L., which have been used in different preparations, like infusions, decoctions or tinctures, to treat diverse illnesses and diseases [1]. Nowadays, the search for natural derived ingredients has prompted the study of these traditional plants. The present work aimed to evaluate the biological properties of the above-mentioned Rosaceae species, in order to promote their applications in different sectors. Antioxidant activity was evaluated by different *in vitro* assays: 2,2-diphenylpycrilhydrazyl (DPPH) radical scavenging assay, thiobarbituric acid reactive substances (TBARS) assay for inhibition of lipid peroxidation, OxHLIA assay for inhibition of oxidative hemolysis, and reducing power determination. Antitumor activity was tested against four tumor cell lines: MCF-7, CaCo, AGS and NCI-H460. Finally, anti-inflammatory activity was assessed by the inhibition of inflammation on lipopolysaccharide-induced RAW264.7 murine macrophages. Considering the results, all plant extracts showed antioxidant effects in the tested assays, especially *F. ulmaria*. All tested extracts also displayed relevant antitumor effects against the four tested tumor cell lines, mostly *F. ulmaria*, which exhibited the lowest growth inhibition 50 values (GI_{50}) ranging from 34 to 86 µg/mL of extract, presenting a noteworthy cytotoxic effect. Finally, R. canina showed significant anti-inflammatory effects, with effective concentration 50 values (EC_{50}) of 20 µg/mL of extract. Therefore, the studied plants may be considered as promising natural sources of bioactive compounds with multifunctional biological properties for the development of several biobased applications.

Acknowledgments:
The research leading to these results was supported by MICINN supporting the Ramón y Cajal grant for M.A. Prieto (RYC-2017-22891) and the Juan de la Cierva Formación grant for T. Oludemi (FJC2019-042549-I), by Xunta de Galicia for supporting the program EXCELENCIA-ED431F 2020/12, the pre-doctoral grant of P. Garcia-Oliveira (ED481A-2019/295) and the program Grupos de Referencia Competitiva (GRUPO AA1-GRC 2018) that supports the work of M. Barral-Martinez. Authors are grateful to Ibero-American Program on Science and Technology (CYTED—AQUA-CIBUS, P317RT0003), to the Bio Based Industries Joint Undertaking (JU) under grant agreement No 888003 UP4HEALTH Project (H2020-BBI-JTI-2019) that supports the work of P. Garcia-Perez. The JU receives support from the European Union's Horizon 2020 research and innovation program and the Bio Based Industries Consortium. The project SYSTEMIC Knowledge hub on Nutrition and Food Security, has received funding from national research funding parties in Belgium (FWO), France (INRA), Germany (BLE), Italy (MIPAAF), Latvia (IZM), Norway (RCN), Portugal (FCT), and Spain (AEI) in a joint action of JPI HDHL, JPI-OCEANS and FACCE-JPI launched in 2019 under the ERA-NET ERA-HDHL (n° 696295). Authors are also grateful to Foundation for Science and Technology (FCT, Portugal) for financial support through national funds FCT/MCTES to the CIMO (UIDB/00690/2020).