15th World Congress on

POLYPHENOLS APPLICATIONS

September 28-30, 2022 - Valencia, Spain

INTERNATIONAL SOCIETY OF MICROBIOTA

Congress & Workshop Abstracts

15th World Congress on Polyphenols Applications

September 28 – 30, 2022

Valencia, Spain and Online

Prof. Andreas Schieber

President of Polyphenols Applications World Congress

University of Bonn, Germany

Prof. Jan Frederik Stevens

President of Cannabis 2022 Workshop

Oregon State University, USA

Prof. Francisco J. Barba

President of the Local Organizing Committee

University of Valencia, Spain

The global abstract book is referenced as Polyphenols Applications 2022 World Congress.

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Welcome to Polyphenols Applications 2022

Dear Colleagues,

It is a great pleasure to welcome all of you to our 15th World Congress on Polyphenols Applications which will be held on September 28-30, 2022 at ADEIT 'Fundación Universitat', Valencia, Spain, & Online.

We wish that the 15th World Congress on Polyphenols Applications will be at least as exciting and as successful as our previous meetings.

Hot topics which are going to be highlighted this year in Valencia include among others:

Microbiota, metabolites, adipose tissue, nervous system, senolytic activity, ageing, endothelial function, radioprotection, oxidative stress, ferroptosis, cancer, atherosclerosis, extracellular vesicles, cannabinoids, cannabinoid receptors, anticancer activity, antiviral activity, anti-dyslipidemic effect, ocular delivery, cosmetic application, polyphenols recovery, extraction, valorization, fermentation, wine polyphenols, sensory aspects, inter-individual variability ...

Cannabis 2022 a new workshop on "Medical Cannabis, Cannabinoids and Derivatives: Recent Advances and Applications" will be held under the direction of **Prof. Jan Frederik Stevens**. Cannabis 2022 aims to cover the cannabis constituents, their isolation, and their application in the medical sector and food industry.

We thank **Prof. Francisco J. Barba** and his team: *Juan Manuel Castagnini, Noelia Pallares and Francisco Juan Marti Quijal* for their great assistance as local organizers.

We would like to thank all speakers for their contribution. Their breadth of knowledge and expertise has helped make this conference as extraordinary as it is:

***Ramaroson Andriantsitohaina**, INSERM, France*
***Luke Busta**, University of Minnesota Duluth, USA*
***Mara Calleja**, University of Valencia, Spain*
***Franck Carbonero**, Washington State University-Spokane, USA*
***Juan Manuel Castagnini,** University of Valencia, Spain*
***Jan Claesen**, Cleveland Clinic, USA*
***Yolanda Diebold**, Universidad de Valladolid, Spain*
***Jennifer Duringer**, Oregon State University, USA*
***Juan Carlos Espín**, Spanish National Research Council, Spain*
***Jan Frank**, University of Hohenheim, Germany*
***Michael Gänzle**, University of Alberta, Canada*
***Pam Maher**, The Salk Institute for Biological Studies, USA*
***Francisco Juan Martí-Quijal**, University of Valencia, Spain*
***Nenad Naumovski**, University of Canberra, Australia*
***Nicole Nemetz**, University of Bonn, Germany*
***Elena Obrador**, University of Valencia, Spain*
***Naomi Osakabe,** Shibaura Institute of Technology, Japan*
***Noelia Pallarés**, University of Valencia, Spain*

Elke Richling, *University of Kaiserslautern, Germany*
Ana Rodriguez-Mateos, *King's College London, United Kingdom*
Sascha Rohn*, Technische Universität Berlin, Germany*
Sonia Sentellas*, University of Barcelona, Spain*
Susana Soares*, Universidade do Porto (FCUP), Portugal*
Jan Frederik Stevens*, Oregon State University, USA*
Yu Sun*, The Chinese Academy of Sciences, China*
Guillermo Velasco*, Instituto de Investigación Sanitaria San Carlos, Spain*
Jean-Paul Vincken*, Wageningen University & Research, The Netherlands*
Fabian Weber*, University of Bonn, Germany*
Qian Wu, *Hubei University of Technology, China*

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We wish to also thank the following companies for supporting Polyphenols Applications 2022: Silvateam, Bioquochem, Extrasynthese, Eldercraft, and MetaSci.

We hope that you will enjoy the Polyphenols 2022 Congress and that your interactions with your colleagues from many countries will stimulate a creative exchange of ideas and challenges.

Prof. Andreas Schieber
President of Polyphenols Applications 2022
University of Bonn, Germany

POLYPHENOLS COMPOSITION AND ANTIOXIDANT ACTIVITY OF STRAWBERRY AND RED RASPBERRY

PINELA, José (1,2); GOMES, Leonardo Corrêa (1,2); PEREIRA, Carla (1,2); DIAS, Maria Inês (1,2); BARROS, Lillian (1,2)

1: Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal; 2: Laboratório Associado para a Sustentabilidade e Tecnologia em Regiões de Montanha (SusTEC), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

jpinela@ipb.pt

Berries are increasingly popular foods in contemporary diets due to their freshness, organoleptic features, and health claims. From the nutritional point of view, red raspberry (Rubus idaeus) (RR) and strawberry (Fragaria x ananassa) (SB) have been described as interesting sources of vitamins, minerals, and polyphenols.1,2 Anthocyanins are of particular interest in these fruits as they confer bioactive properties in addition to their characteristic color.1,2 This work was performed to characterize the polyphenols composition and evaluate the in vitro antioxidant activity of RR and SB extracts. Ripe fresh berries were lyophilized and ground to a fine powder used in the preparation of hydroethanolic extracts. The phenolic profile was characterized by HPLC-DAD-ESI/MSn and the antioxidant activity was evaluated for the ability to inhibition lipid peroxidation and oxidative hemolysis.3 The anthocyanins cyanidin-3-O-glucoside and cyanidin-3-O-sophoroside were identified in RR, while SB contained O-glycosylated pelargonidin, cyanidin, and peonidin derivatives. Quinic acid and caffeoyl hexoside were also detected in RR and flavan-3-ols and ellagic acid derivatives in SB. While the RR extract performed better in inhibiting lipid peroxidation, SB prevented oxidative hemolysis at a lower dose. Overall, the potential health-promoting effects of these berries were supported by their anthocyanin composition and antioxidant activity.

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