International Society of Antioxidants in Nutrition and Health

8th ISANH Congress on Polyphenols Applications

8th World Congress on Polyphenols Applications

JUNE 5-6, 2014 - LISBON, PORTUGAL

Abstracts Book

INTERNATIONAL SOCIETY OF ANTIOXIDANTS
8th World Congress on
Polyphenols Applications

June 4-6, 2014 – Lisbon, Portugal

Chairmen of the Scientific Committee

Marvin Edeas & Andreas Schieber

Local Organising Committee

Luisa Bivar Roseiro & Fernanda Borges

CASTANEA SATIVA MILL. FLOWERS AS A SOURCE OF BIOACTIVE PHENOLIC COMPOUNDS

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In the Trás-os-Montes region of Portugal and across a good part of the Mediterranean countries, chestnut trees are a considerable part of the landscape. These trees and their respective nuts have been important in the past and are still a source of incomes for those regions. The chestnut tree and products, such as nuts, wood, leaves and flowers are known to possess a myriad of applications [1]. In particular, infusions and decoctions of chestnut flowers have been reported for different medical purposes [2], but their phytochemical profile and antioxidant activity are still mostly unknown. Herein, decoctions and infusions of flowers from the two most appreciated chestnut cultivars (longal and judia) in Trás-os-Montes, Portugal, were prepared and characterized with regard to their phenolic composition, which was analyzed by HPLC-DAD-ESI/MS. Furthermore, the antioxidant activity was assessed in terms of free radical scavenging capacity, reducing power and inhibition of lipid peroxidation in brain cell homogenates [2].

The individual polyphenol with the highest concentration in all samples was a trigalloyl-HHDP-glucoside, followed by pentagalloyl glucose, whereas quercetin 3-O-glucuronide and a quercetin hexoside were the most abundant flavonoids in judia and longal cultivars, respectively. The sample with the highest concentration of total polyphenols was the infusion of judia, closely followed by the decoction of longal. The preparations of the cultivar judia presented higher flavonoid levels than those of longal that in turn, displayed higher concentrations of hydrolyzable tannins. Decoctions showed greater antioxidant activity than infusions, which might be explained by the longer time at boiling point that decoctions were subjected to during extraction [2]. Overall, the decoction of the cultivar judia was the sample with both the highest quantity of flavonoids and antioxidant activity. The obtained results support ancestral claims about health benefits of infusions and decoctions of chestnut flowers. Moreover, due to the extremely potent antioxidant activity observed, flower decoctions are currently being tested for their potential use as natural preservatives in food industry (research project PRODER nº 46577).

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References:
Workshop on Polyphenols Biowaste Valorization
From 9h00 to 17h00

Introduction of Workshop
Marvin Edeas, Andreas Schieber, Luisa Bivar, ISANH Polyphenols 2014 Committee

Workshop Animated by:
Charis Galanakis, Galanakis Laboratories, Chania, Greece

Practical Cases presented by:
Jaromir Lachman, Czech University of Life Sciences, Prague, Czech Republic
Maria Elena Sanchez-Pardo, Universidad de Cahalcatongo, Oaxaca, Mexico

A dedicated abstracts book with power point presentations and practical cases will be available during the conference

Day 2 – June 5, 2014

07h30 Welcome Coffee - Registration of Attendees

09h00 Welcome Note by Chairmen of ISANH Polyphenols 2014 & Local Organising Committee
Marvin Edeas & Andreas Schieber, Chairman of Scientific Committee
Luisa Bivar & Fernanda Borges, Local Organising Committee

09h05 Introduction ISANH Polyphenols 2014 - Oxidative Stress, Microbiota & Polyphenols: Where is the Target?
Marvin Edeas, Chairman of ISANH, Paris, France

ISANH Polyphenols 2014: Microbiota, Mechanistic Data & Directions

09h30 Human/microbial Metabolites of Dietary Polyphenols: New Actions in the Cardiovascular Context
Daniele Del Rio, University of Parma, Parma, Italy

09h50 Polyphenols & Inflammatory Bowel Diseases: Recent Advances & Mechanistic Perspectives
Diana Jurado Serra, University of Coimbra, Coimbra, Portugal

10h10 Bioactivation of Dietary Phytochemicals by Probiotics and Bifidobacteria
Maddalena Rossi, University of Modena and Reggio Emilia, Modena, Italy

10h15 Protection of Phenolics of the Mixture of Citronellol and Chinese Medical Herbs Complex on Gastrointestinal Diseases
Chin-Kun Wang, Chung Shan Medical University, Taichung, Taiwan

10h20 Grape-Seed Procyanidin Extract Protects Gastrointestinal Mucosa from Oxidative Stress
Anna Ardevol, Universitat Rovira i Virgil, Tarragona, Spain

10h25 Discussion & Questions

10h35 Coffee Break, Posters & Exhibition Sessions

11h05 Overview on Daily Polyphenols Intake from Fresh Fruits, in particular Berries. Effects of Berries Metabolites on Brain
Claudia Santos, Instituto de Biologia Experimental e Tecnologica, Oeiras, Portugal

11h25 Targeting Polyphenols to Brain and to Blood-Brain-Barrier: Recent Advances & Perspectives
Anthocyanins crossing biological barriers: recent advances & perspectives
Ana Faria, University of Porto, Porto, Portugal

11h45 Mechanistic Investigation of Polyphenol Bioactivities in Alzheimer’s Disease
Giulio Maria Pasinetti, Icahn School of Medicine at Mount Sinai, New York, USA

11h55 Effects of Quercetin on microRNA Signaling Associated with Atherosclerosis
Mahdi Garelnabi, University of Massachusetts, Lowell, USA

12h00 Polyphenols against Cancer and a Fatal Neglected Infectious Disease
Gerd Birkenmeier, University of Leipzig, Leipzig, Germany

12h05 A Short-cut to Comprehensive Health Benefits of Dietary Polyphenols: The Nitrate-nitrite-nitric Oxide Pathway
Joao Laranjinha, University of Coimbra, Coimbra, Portugal

12h10 Discussion & Questions
12h20 Polyphenols & Taste: Activation of Distinct Human Bitter Taste Receptors  
**Susana Soares**, University of Porto, Porto, Portugal

12h40 ISANH Polyphenols 2014 - Group Pictures

**12h45 Lunch Break, Posters & Exhibition Sessions**

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**Special Session on ISANH Polyphenols, Beer & Xanthohumol**

14h00 Beer Polyphenols, Xanthohumol in Inflammation and Angiogenesis: Recent Advances & Perspectives  
*Rita Negrão*, Faculty of Medicine of University of Porto, Porto, Portugal

14h20 Polyphenols, Bio-Waste & Bi-Products: The Hidden Gold for Brewer’s spent grain and Spent Coffee Ground  
**Sôlange I. Mussatto**, University of Minho, Braga, Portugal

14h40 Global Metabolomics for Discovery of Polyphenol Bioactivity: Unravelling Broad-Spectrum Effects of Xanthohumol in a Rodent Model of Obesity  
**Fred Stevens**, Oregon State University, Corvallis, USA

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**Special Session on Pomegranate**

15h00 Pomegranate & Health: What’s Next?  
**Michael Aviram**, Rambam Medical Center, Haifa, Israel

15h20 Regular Consumption of a Pomegranate and Grape Juice Improves Oxidative Status and Causes Metabolome Changes in Healthy Adults  
**Jara Pérez-Jiménez**, Institute of Food Science, Technology and Nutrition (ICTAN-CSIC), Madrid, Spain

15h25 Discussion & Questions  
**15h30 Coffee Break, Posters & Exhibition Sessions**

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**Special Session on ISANH Polyphenols, Food Colorants & Food Packaging**

16h00 Pyranoanthocyanins as Novel Food Colorants  
**Fabian Weber**, University of Bonn, Germany

16h20 Polyphenols & Antioxidants Incorporation into Food Packaging: Trends & Perspectives  
**Ana Sanches Silva**, National Institute of Health Dr. Ricardo Jorge, Lisbon, Portugal

16h40 Novel Antioxidant Bioinspired Phenolic Polymers and their Applications in Packaging  
**Luisella Verotta**, University of Milan, Milan, Italy

16h45 The Behaviour of Natural Antioxidants on Oxidation in Raw and Cooked Meat Balls  
**Eva Tomberg**, Lund University, Sweden

16h50 Dihydrochalcones as Natural Sweeteners against “Modern” Diseases  
**Mwafaq Ibdah**, Washington State University, Pullman, USA

16h55 Intensification of Polyphenols Extraction from Vine Shoots, and Extracts Concentration by Dead-End Ultrafiltration  
**Hiba Rajha**, Université de Technologie de Compiègne, Centre de Recherche de Royallieu, Compiègne, France & Université Saint-Joseph, Liban

17h00 Hybrid Antioxidant Molecules Derived From Flavanolignan Silybin  
**Vladimír Křen**, Academy of Sciences of the Czech Republic, Prague, Czech Republic

17h05 Mitocin’s - The Highway to Target Bioactive Cinnamic Molecules to Mitochondria  
**José Teixeira**, University of Porto, Porto, Portugal

17h10 Biology-Oriented Development of Novel Lipophilic Antioxidants with Neuroprotective Activity  
**Tiago Silva**, University of Porto, Porto, Portugal

17h15 Green Tea (Camelia Sinensis), Rooibos (Aspalathus Linearis) and Cacao (Theobroma Cacao) Affect Contraction and Relaxation of Human Subcutaneous Arteries In Vitro  
**Karin Persson**, Linköping University, Sweden

17h20 The Differential Modulating Effects of Green and Black Tea on Biomarkers of Chronic Inflammation by Smoking Status  
**Iman Hakim**, University of Arizona, Tucson, USA

16h25 The Effect of Olive Leaf Supplementation on the Constituents of Blood  
**Fatima Paiva-Martins**, Universidade do Porto, Porto, Portugal

17h30 Superior Heavy Metal Binding, Antioxidant and Chemopreventive Action of Black Sesame Pigment after Simulated Gastrointestinal Digestion: Toward the Development of a Food Supplement  
**Lucia Panzella**, University of Naples “Federico II”, Naples, Italy
Antioxidant and Metal Chelating Activities, Taste Profile and Phenolic Compounds of Organic, Biodynamic and Conventional Grape Juices
Daniel Granato, Wageningen University and Research Centre, Wageningen, The Netherlands

Castanea Sativa Mill. Flowers as a Source of Bioactive Phenolic Compounds
Lillian Barros, Polytechnic Institute of Bragança, Portugal

Discussion & Questions
Visit of Lisbon with Lisboa Turism
For registered people

ISANH Polyphenols 2014 Dinner - In a Portuguese Fado Restaurant
If you are interested to take part to this dinner, please check on conference site.

Day 3 – June 6, 2014

Polyphenols & Waste Valorisation from Fruits & Vegetables Processing

9h00 Universal Strategy for the Recovery of Polyphenols: Targeting Industrials Applications
Charis Galanakis, Galanakis Laboratories, Chania, Greece

9h20 Ferulic Acid Oligomers: From (bio)Chemistry to Applications
Mirko Bunzel, Karlsruhe Institute of Technology, Karlsruhe, Germany

9h40 Non-Extractable Polyphenols or Macroantioxidants: Recent Advances and Perspectives
Fulgencio D. Saura-Calixto, Instituto de Ciencia y Tecnología de Alimentos y Nutrición, Madrid, Spain

10h00 Biorefinery Concept with Green Solvents towards the Phenolic Valorization
Rafal Lukasik, National Laboratory for Energy and Geology, Lisbon, Portugal

10h20 Polyphenols and Glucosinolates from leaf-salads: Characterization, Antioxidants & Antimicrobial effects
Alfredo Aires, University of Trás-os-Montes and Alto Douro, Vila Real, Portugal

10h30 Coffee Break, Posters & Exhibition Sessions

11h00 Valorization of Natural Polyphenols for Amyloid Disorders and Mechanisms of Action
Amelia Pilar-Rauter, University of Lisbon, Lisbon, Portugal

11h20 Electrochemical Mapping of Polyphenol’s Antioxidants Activity
Jorge Garrido, School of Engineering (ISEP) Polytechnic, Porto, Portugal

11h40 Chromatographic Analysis of Polyphenolic Compounds: From Sample Preparation to the Results
Magdalena Biesaga, University of Warsaw, Warsaw, Poland

11h45 Unorthodox Efficient Separation Methods for Polyphenols
David Biedermann, Institute of Microbiology, Prague, Czech Republic

11h50 New Integrated Process Extraction-Adsorption for Selective Recovery of Antioxidant Polyphenols from Food Industry By-Products
Krasimir Dimitrov, Lille University, Lille, France

11h55 Towards Complex Utilisation of Winemaking Residues: Antioxidant Content in Grape Seeds as a By-Product of Winemaking and in Vine Canopy After Trimming
Jaromír Lachman, Czech University of Life Sciences, Prague, Czech Republic

12h00 Influence of some Process Parameters on Spray-Drying Encapsulation of a Red Grape Waste Skins Extract
Dursem Garrido, Università Cattolica Sacro Cuore, Piacenza, Italy

12h05 Phenolics Recovery from Different Agro-Food By-Products
Alessandro Moncalvo, Università Cattolica Sacro Cuore, Piacenza, Italy

12h10 Separation and Characterization of Phenolic Compounds from Pecans and Dry-Blanched Peanut Skins by Liquid Chromatography-Electrospray Ionization Mass Spectrometry
Ronald B. Pegg, The University of Georgia, USA

12h40 Lunch Break, Posters & Exhibition Sessions

Special Session on Polyphenols as Drugs

14h00 Flavonoids & Polyphenols as Drugs: Emerging Sulfated Flavonoids and Polyphenols as a New Class of Anticoagulant Agents
Marta Correia da Silva, University of Porto, Porto, Portugal

14h20 Encapsulation Modulates the Bioavailability of Anthocyanins and their Degradation Products
Elke Richling, Kaiserslautern Technical University, Kaiserslautern, Germany
14h40 Novel Polyphenolic Compounds as Antioxidants and Anti-Inflammatory Agents  
*Arthur Manuel Soares da Silva*, University of Aveiro, Aveiro, Portugal

15h00 Polyphenols & Flavonoids Delivery Systems  
- Nanoparticles for ocular delivery  
  *Joana Fangelue*, University Fernando Pessoa, Porto, Portugal

15h20 Polyphenols and Drug Discovery: Is The Taming of Nature Chemistry a Solution to Surpass Clinical Trials Pitfalls?  
*Fernanda Borges*, University of Porto, Porto, Portugal

15h30 Polyphenols and Inflammation: Should they be Considered?  
*Patricia Valențao*, University of Porto, Porto, Portugal

15h40 Coffee Break, Posters & Exhibition Sessions

### Polyphenols & Industrial Innovations

16h00 Development of an Antioxidant Rich Beverage and its Influence to Oxidative Stress parameter and Selected Micronutritions in Blood and Urin of Healthy People  
*Sabine Larsen-Vefring*, LR Health & Beauty Systems GmbH, Ahlen, Germany

16h05 Isoquercitrin: Emerging Quercetin Derivative for Food Supplements  
*Kateřina Valentová*, Academy of Sciences of the Czech Republic, Prague, Czech Republic

16h10 Review of in vitro and clinical evidence underlying Resveratrol for the management of Diabetes Mellitus.  
*James Betz*, Biotivia Longevity Bioceuticals, Llc, Verona, Italy

16h15 Have Plants, Besides Tocopherols and Carotenoids, Evolved a Third Antioxidative Mechanism for Lipid Protection: Carnosic Acid?  
*Simona Birtic*, Naturex, Avignon, France

16h20 Discussion & Questions

### Short Oral Presentations

16h30 Reversal of Endothelial Dysfunction Using Polyphenol Rich Roods and Polyphenol Supplements, Coupled with Avoidance of Major Dietary Lectins  
*Steven Gundry*, The International Heart and Lung Institute, USA

16h35 Resveratrol and Resveratrol Metabolites as Adjuvants to Synergize with Chemotherapeutic drugs to Induce Cell Death of Colon Cancer Cells  
*Dominique Delmas*, Université de Bourgogne, Dijon, France

16h40 Quercetin Decreases High-Fat Diet Induced Fatty Liver Disease In Mice  
*Elise Hoek-Van Den Hil*, Wageningen University, Wageningen, The Netherlands

16h45 Impact of Oxidative Metabolism on the Bioactivity Profile of Isoflavones  
*Doris Marko*, University of Vienna, Vienna, Austria

16h50 Biochemical Pharmacology of Curcumin  
*Claus Schneider*, Vanderbilt University Medical School, USA

16h55 Phenolic Compounds in Plasma after Supplementation with Raisins - A Bioavailability Study  
*Panagiotis T. Kanellos*, Harokopio University, Greece

17h00 Evaluation of Grape (Vitis Vinifera L.) Stems from Portuguese Varieties as a Source of (Poly)Phenolic Compounds: A Comparative Study  
*Raul Dominguez-Peres*, Universidade De Trás-Os-Montes E Alto Douro, Portugal

17h05 Phlorotannins from Brown Seaweeds: Bioavailability, Antioxidant and Anti-Inflammatory Potential  
*Giulia Corona*, University of Reading, United Kingdom

17h10 Nasturtium Flowers (Tropaeolum Majus), a Rich Source of Antioxidants  
*Astrid Garzón*, Universidad Nacional de Colombia, Bogotá, Colombia

17h15 Discussion & Questions

17h45 Discussion: Polyphenols Bioavailability:  
- Can we modulate the Quality of Gut Microbiota with Polyphenols?  
- Can we Increase Polyphenols Bioavailability by Modulating Gut Microbiota?

### Polyphenols 2014 Awards

18h15 Conclusion of Polyphenols 2014