International Society of Antioxidants

13th World Congress on Polyphenols Applications

Scientific Agenda

September 30 - October 1, 2019 - Malta

www.polyphenols-site.com
Congress Sessions & Round table discussion
- Polyphenols-microbiome interactions, metabolism and health effects
- Skin and Polyphenols: Recent advances and practical applications
- Technological & Biotechnological aspects of Polyphenols
- Polyphenols Applications & Innovations in 2019

Malta Polyphenols 2019 Speakers

Malta Polyphenols 2019: General introduction by President of Malta Polyphenols 2019
Andreas Schieber, University of Bonn, Germany

Influence of juice processing and natural variation in the bioaccessibility of phenolics from grapes and blueberries
Mario Ferruzzi, North Carolina State University, USA

Phenolic compounds from wine industry by-products: characterization and in vitro bioaccessibility
Ariel Fontana, Universidad Nacional de Cuyo (UNCUYO), Argentina

Role of polyphenols in cognitive diseases
Yves Desjardins, Laval University, Canada

Polyphenols of Bulgarian oil-bearing rose (Rosa damascena Mill.): Recovery and potential applications in food industry
Reda Dinkova, University of Food Technologies, Bulgaria

Phlorotannins – extraction, profiling and bioactivities
Mariana Barbosa, University of Porto, Portugal

Novel Insights of Polyphenols in Obesity
Gerard Aragonés, Rovira i Virgili University, Spain

Usage of nanosystems to improve delivery of polyphenols for skin repair
Carla Cadeo, University of Cagliari, Italy

Epigenetic modulation of inflammation and synaptic plasticity by polyphenolic metabolites promotes resilience against stress in mice
Giulio Maria Pasinetti, ICAHN School of Medicine at Mount Sinai, USA

Hemisynthesis of anthocyanin phase II metabolites and their characterization by LC-ESI-IMS-QTOF mass spectrometry
Sarah Schmitt, University of Bonn, Germany

Natural and bioinspired phenolic compounds as skin depigmenting agents: Recent Advances
Lucia Panzella, University of Naples “Federico II”, Italy

Skin and Polyphenols: Recent advances and practical applications
Alessandra Napolitano, University of Naples Federico, Italy

Volatile Phenols – important contributors to the flavour and aroma of herbs, spices and fruits
Matthias Wüst, Bonn University, Germany

Metabolomic assessment of polyphenols in tropical fruits
Carolina Rojas-Garbanzo, University of Costa Rica, Costa Rica

Polyphenols and Mitochondria: Recent Advances & Perspectives
Gunter P. Eckert, Justus-Liebig-University Giessen, Germany

Computational-Assisted Annotation of Biological Activity to Polyphenols in Botanical Supplements and Herbal Medicines
Fred Stevens, Oregon State University, USA

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Introduction Note by the President of Malta Polyphenols 2019

On behalf of the International Society of Antioxidants in Nutrition and Health (ISANH) and the Scientific Committee, we are pleased to announce the organization of the 13th World Congress on Polyphenols Applications: Malta Polyphenols 2019, which will be held at the Excelsior Hotel, Malta, from Monday, September 30 to Tuesday October 1, 2019.

After the huge success of the previous editions of this series of conferences, Malta Polyphenols 2019 will bring together the experts from the academia and industry to discuss the latest scientific advances in research on polyphenols. In continuation of our cross-disciplinary approach, both basic research topics and practical applications of polyphenols in the food, pharmaceutical and medical sciences and related disciplines will be covered.

Among the Polyphenols 2019 Hot Topics:

Polyphenols-Microbiome Interactions, Metabolism and Health Effects
There is consensus in the scientific community that phenolic compounds are extensively metabolized by the human microbiome, and evidence is accumulating that phenolics which are present in food have an effect on the composition of gut microorganisms. This session which addresses the latest findings in the field from a cross-disciplinary view, including microbiology and food chemistry, and will highlight the following strategic points: Microbiota, Polyphenols & Food: Recent Advances & Perspectives / Can polyphenols modify the quality and diversity of microbiota?

Skin and Polyphenols: Recent Advances and Practical Applications
We will highlight the strategic roles of polyphenols and phenolics compounds as antioxidants (anti-UV) and anti-inflammatory agents. We will also discuss the formulation of polyphenols and skin pigmentation. We will dedicate time to all innovations related to the use of polyphenols in skin care and skin aging.

Bioavailability, Metabolism and Health Effects of Polyphenols and Their Metabolites
Phenolic compounds have been associated with numerous beneficial effects on human health. The session will provide an overview of the latest investigations into the interrelationship between bioavailability, metabolism, and bioactivity, including among others, anti-obesity and cardiometabolic effects. We will also address recent research on the role of polyphenols in the prevention of neurodegenerative diseases.

Technological and Biotechnological Aspects of Polyphenols and their Metabolites
As there is still a gap in our knowledge about the effects of food processing on the stability of phenolic compounds, this session will cover studies about the impact of conventional and novel processes on phenolics. We also welcome presentations reporting the application of phenolics as natural antioxidants, preservatives, and colorants to replace synthetic food additives. In addition, recent advances in the biotechnological production of phenolic compounds and the role of volatile phenolics as food constituents will be covered.

Chemistry of Polyphenols including Synthesis and Analysis of Metabolites and Reactions of Phenolic Compounds
Due to the ongoing advances in analytical chemistry, our knowledge about the profile of phenolic compounds in plants and plant-derived food is continuously increasing. We will address studies on novel approaches in sample preparation, chromatographic separation and detection of phenolics, including hyphenated techniques such as LC-ion mobility mass spectrometry and LC-NMR spectroscopy. Presentations on the characterization of novel structures, reaction mechanisms, and the synthesis of phenolic metabolites are also highly welcome.

Innovations in Industrial Applications of Polyphenols
The session will highlight approaches in product development, exploitation of novel sources of phenolic compounds, characterization and application of novel nutraceuticals based on plant phenolics, and new processes for extraction and formulation of polyphenols on industrial scale. Abstracts for consideration of potential inclusion as oral or poster presentation are welcome for all these topics.
What is New for Polyphenols 2019: Round Table Discussion

Traditional ways of delivering scientific information to the audience during congresses are oral and poster presentations. However, despite the wealth of data typically presented, lots of questions remain unanswered for the participants and for many scientists as well, even for those who have been considered as keynote speakers, there is only limited opportunity to interact with colleagues. To facilitate the scientific discourse and make the conference more interactive, the scientific committee decided to include two round table discussions that address hot topics, challenges and pressing questions related to various areas of research about polyphenols.

Polyphenols and Health Applications

• Where are we now and what are the prospects?
• What is assured knowledge and what are the gaps?
• How do microbiota and metabolites, the new players in the world of polyphenols, affect our classical thinking and make us rethink and redesign our strategies concerning applications of polyphenols?

Polyphenols and Food Applications

• What is the impact of established and novel processing methods on polyphenols?
• How can we control and exploit reactions of polyphenols in food applications?
• How can we utilize side streams of food processing more efficiently for the recovery of polyphenols?
• Are there applications at the horizon beyond food – what about feed, cosmetics, and others?

All participants are invited to participate in these discussions by presenting their questions and thoughts before the meeting by September 20, 2019.

We look forward to welcoming you in Malta!

Prof. Andreas Schieber
University of Bonn, Germany
President of Malta Polyphenols 2019
13th World Congress on Polyphenols Applications
September 30 – October 1, 2019 – Hotel Excelsior, Malta

Programme

September 29, 2019
17h00 – 19h00 Registration – Badges & Material Delivery at the Hotel

Malta Polyphenols - Day One -
September 30, 2019

7h45 Welcoming of Attendees - Registration

9h00 Malta polyphenols 2019: general introduction by president of Malta Polyphenols 2019
Andreas Schieber, University of Bonn, Germany

Session 1: Polyphenols-Microbiome Interactions, Metabolism and Health Effects
Chairman: Prof. Andreas Schieber

9h10 Mitochondria, microbiota and polyphenols: introductory remarks
Marvin Edeas, Université Paris Descartes, INSERM, France

9h30 Polyphenols and mitochondria: recent advances & perspectives
Gunter P. Eckert, Justus-Liebig-University Giessen, Germany

9h50 Epigenetic modulation of inflammation and synaptic plasticity by polyphenolic metabolites promotes resilience against stress in mice
Giulio Maria Pasinetti, Icahn School of Medicine at Mount Sinai, USA

10h10 Role of polyphenols in cognitive diseases
Yves Desjardins, Laval University, Canada

10h30 - Coffee Break & Poster Session

11h10 Short oral presentations (7 minutes for presentation + 3 min for questions)
Chicory polyphenols impact on gut microbiota composition and appetite regulation  
Anca Lucau-Danila, University of Lille, Institut Charles Violette, France

Green coffee extract modulates the immune response, mitigates high-fat diet-induced dysbiosis and improves cardiometabolic parameters in apo-e-deficient mice  
Jelver Alexander Sierra Restrepo, Vidarium, Nutrition, Health and Wellness Research Center, Colombia

Interactions of conjugated and colon metabolites of flavonoids with serum albumin and biotransformation enzymes  
Miklós Poór, University of Pécs, Hungary

Quantitative profiling of urinary xanthohumol metabolites in humans reveals metabotypes that reflect differences in gut microbiomes  
Luce Micaela Mattio, Università degli Studi di Milano, Italy

From fruits to compounds: the importance of metabolomics in bioprospection studies  
Alexandre Foito, The James Hutton Institute, Ukraine

Quercetin derivatives from Hibiscus sabdariffa to alleviate glucomipotoxicity-induced metabolic stress  
Maria Herranz-Lopez, Miguel Hernandez University, Spain

Intracellular quercetin accumulation and its impact on mitochondrial dysfunction  
Hanne Vissenaekens, Ghent university, Belgium

Determination of anthocyanins and target phenolic acid metabolites in sweet cherries: implications for clinical studies  
Nadine Hötzl, University of Tasmania, Australia

Dietary polyphenols and their immuno-modulating effects: implications during parasite-induced inflammation in the gut  
Audrey Inge Andersen-Civil, Copenhagen University, Denmark

**12h40 – Group Picture, Lunch Break & Poster and Exhibitor Session**

**Session 2: Skin and Polyphenols: Recent Advances and Practical Applications**

Chairperson: Dr. Alessandra Napolitano

14h00 Introductory remarks: skin and polyphenols 2019  
Alessandra Napolitano, University of Naples Federico, Italy

14h20 Natural and bioinspired phenolic compounds as skin depigmenting agents: recent advances  
Lucia Panzella, University of Naples "Federico II", Italy

14h40 Use of nanosystems to improve delivery of polyphenols for skin repair  
Carla Caddeo, University of Cagliari, Italy

15h00 Short oral presentations (7 minutes for presentation + 3 min for questions)

Natural polyphenols-rich pomegranate juice positively modulates olympic performance and selected biological responses following resistance exercises in elite athletes: a double blind, placebo-controlled, crossover trial  
Ammar Achraf, Otto-von-Guericke University, Germany

Influence of curcumin and black pepper, on exercise-induced pain, fatigue and stress  
Ramona-Niculina Jurcau, Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca, Romania

Effect of polyphenols on athletic performance  
Stefania D'Angelo, University of Naples Parthenope, Italy

15h30 - Coffee Break & Poster Session

16h10 Novel insights of polyphenols in obesity  
Gerard Aragonès, Rovira i Virgili University, Spain

16h30 Short oral presentations (7 minutes for presentation + 3 min for questions)

Inflammatory biomarkers according to polyphenol intake in European adolescents: the Helena study  
Ratih Wirapuspita Wisnuwardani, Ghent University, Belgium

Maternal polyphenols supplementation during pregnancy  
Antonio Gonzalez-Bulnes, National Institute for Agricultural and Food Research and Technology, Spain
Polyphenol-enriched black elderberry (*Sambucus nigra L.*) fruit extract inhibits 7-ketocholesterol-induced endothelial inflammation via erk dependent signaling pathway

Karolina Rudnicka, University of Łódź, Poland

Citrus flavonoid naringenin slows down myocardial senescence through the stimulation of sirt1 enzyme

Lara Testai, University of Pisa, Italy

Resveratrol induced growth inhibition in human Ph+ acute lymphoblastic leukemia by modulation of sphingolipid mechanism

Aysun Adan, Abdullah Gul University, Turkey

Possible antitumor activity of a polyphenolic rich extract from *Thymbra spicata* (Lamiaceae) aerial parts

Mohamad Khail, University of Genoa, Italy

Naringenin-induced MitoBKca channel-dependent changes in endothelial mitochondria

Anna Kicinska, Adam Mickiewicz University, Poland

Effects of a pomegranate peel extract in an *in vitro* intestinal inflammation model: role of heme oxygenase-1 modulation

Valeria Sorrenti, University of Catania, Italy

Polyphenols from *Lippia citriodora* as potential agonists of the master energy regulator ampk with synergistic effects

Marilo Olives-Vicente, Universidad Miguel Hernández de Elche, Spain

Effect of polyphenol extract from blueberries on liver fibrosis model in rats

Shynggys Sergazy, Private Institution "National Laboratory Astana", Nazarbayev University, Kazakhstan

**18h10** End of the first day

**20h00** Malta Polyphenols Dinner

*If you would like to participate to the dinner, please register online or contact the staff on site.*
Malta Polyphenols Day Two
October 01, 2019

08h00 Opening of Day Two

Session 3: Technological & Biotechnological aspects of Polyphenols

Characterization and analysis of polyphenols and their metabolites

Chairman: Dr Mario Ferruzzi

08h00 Phlorotannins – extraction, profiling and bioactivities
Mariana Barbosa, University of Porto, Portugal

08h20 Phenolic compounds from wine industry by-products: characterization and in vitro bioaccessibility
Ariel Fontana, National University of Cuyo, Argentina

08h40 Metabolomic assessment of polyphenols in tropical fruits
Carolina Rojas-Garbanzo, University of Costa Rica, Costa Rica

09h00 Hemisynthesis of anthocyanin phase II metabolites and their characterization by LC-ESI-IMS-QTOF mass spectrometry
Sarah Schmitt, University of Bonn, Germany

09h20 Influence of juice processing and natural variation in the bioaccessibility of phenolics from grapes and blueberries
Mario Ferruzzi, North Carolina State University, USA

09h40 Short oral presentations (7 minutes for presentation + 3 min for questions)

Novel approach for stable food colorants from red wine or winery by-products
Weilack Ingrid, Rheinische Friedrich-Wilhelms-University Bonn, Germany

Resveratrol derived monomers and dimers: design, synthesis and biological evaluation as antidiabetic agents and food preservatives against foodborne pathogens
Andrea Pinto, University of Milan, Italy

From nanotechnology the way to improve the multi-target activities of a natural polyphenol: a study involving gallic acid and an ester-type biodegradable dendrimer
Silvana Alfei, University of Genoa, Italy

Supercritical CO2 extraction of polyphenols from agri-food residues
Stefania Marzorati, Università degli Studi di Milano, Italy

Identifying phenolic and other components as targets for valorisation of soft fruit co-products
Gordon James Mcdougall, The James Hutton Institute, United Kingdom

10h30 - Coffee Break & Poster Session

Session 4: Polyphenols Applications & Innovations in 2019

11h15 Computation-assisted annotation of biological activity to polyphenols in botanical supplements and herbal medicines
Fred Stevens, Oregon State University, USA

11h35 Volatile phenols – important contributors to the flavour and aroma of herbs spices and fruits
Matthias Wüst, Bonn University, Germany

11h55 Polyphenols of Bulgarian oil-bearing rose (Rosa damascena Mill.): recovery and potential applications in food industry
Rada Dinkova, University of Food Technologies, Bulgaria

12h15 Polyphenol blends as technological antioxidants
Juan Javierre, Layn-USA, USA
13h30  **Short oral presentations including industry contributions** (7 minutes for presentation + 3 min for questions)

**Solvents’ influence in the measurement of phenolic compounds and antioxidant capacity in blueberries extracts**  
*Marina Riego*, Bioquochem SL (BQC), Research and Development Department, Llanera-Asturias, Spain

**Polyphenols for the treatment of local tissue necrosis of victims bitten by cobras: a structure-activity analysis of cobra venom phosphodiesterase by quercetin and related flavonoids**  
*Wen-guey Wu*, National Tsing Hua University, Taiwan

**4-Stilbenol: a promising tool in medicinal chemistry**  
*Barbara De Filippis*, University G. D'Annunzio Chieti, Italy

**Self-emulsifying drug delivery systems for improving the oral bioavailability of bioactive phytochemicals**  
*Katherine Sanchez Zuñiga*, Instituto Tecnologico de Costa Rica, Costa Rica

**Artificial neural network versus response surface methodology optimization of polyphenols recovery from peppermint using microwave-assisted extraction**  
*Branimir Pavlic*, University of Novi Sad, Serbia

**Electron transfer and neuroprotective properties of an olive oil phenolic compounds mixture. Focus on LC-ESI-MS² profiles of oxidation products**  
*Marie Laurence Abasq*, Université de Rennes, France

**Production of natural eriodictyol and homoeriodictyol with biotechnology**  
*Rui Zhou*, Conagen Inc, USA

**Grafting of polyphenols from grape pomace to implantable biomaterials: a chemical and biological characterization**  
*Silvia Spriano*, Politecnico Di Torino, Italy

**Developing of trilobatin dihydrochalcone as a new-class of phytochemical agent**  
*Mwafaq Ibdah*, Newe Ya’ar Research Center, Agricultural Research Organization, Israel

**Control of pineapple fusariosis with polyphenols**  
*Rêmulo Araújo Carvalho*, Emipaer, Brasil

**Polyphenol extract from the medicinal plant antirhea borbonica attenuates renal tubulointerstitial fibrosis**  
*Bryan Veeren*, INSERM U1188, France

**Phytosomes with persimmon (Diospyros kaki L.) extract: preparation and preliminary demonstration of in vivo tolerability**  
*Rosa Fernandes Direito*, University of Lisbon, Portugal

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**15h20 Coffee Break & Poster Session**

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16h00  **Round Table Discussions - Chairs: Prof. Marvin Edeas, Prof. Andreas Schieber**

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**Polyphenols and health applications**

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**Polyphenols and food applications**

- What is the impact of established and novel processing methods on polyphenols?
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16h45  **Concluding Remarks of Malta Polyphenols 2019 - Malta Polyphenols Scientific and Innovation Awards 2019**

17h00  **End of Malta Polyphenols 2019**