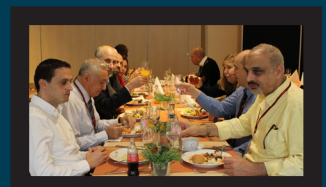
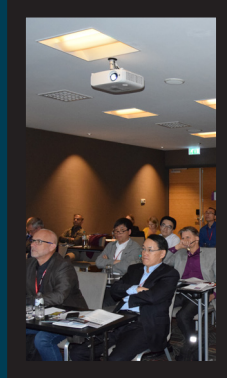
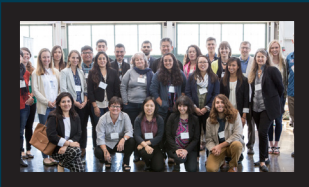


DAY 1

Scientific Tracks
& Abstracts



3rd World Congress on
**NUTRITION, DIETETICS AND
NUTRACEUTICALS**

February 25-26, 2019 | Prague, Czech Republic

DAY 1

February 25, 2019

Sessions

Nutrient related Chronic diseases | Nutrition, Health and Choice | Food and Nutrition | Nutraceuticals | Clinical Nutrition | Nutritional Epidemiology | Food & Nutritional Toxicology | Current Research in Nutrition and Dietetics

Session Chair

Kiri Andrew

University of Juba, Uganda

Session Introduction

Title: Effect of caffeic and chlorogenic acid in the modulation of lipid accumulation in THP-1-derived macrophages

Cristian Del Bo, University of Milan, Italy

Title: Pharmacokinetics of Affron®, commercial saffron (*Crocus sativus L*) extract

Paula Almodovar, Pharmactive Biotech Products S L, Spain

Title: Nanoencapsulation of nutraceutical compounds and bionanoencapsulation of proteins and nucleic acids

Oscar E Perez, National Lanus University, Argentina

Title: Monosodium glutamate: The flavour that takes health?

Ana Lucia Baltazar, Instituto Politecnico de Coimbra, Coimbra Health School—ESTESC, Portugal

Title: The spectacular role of the human microbiome in preventing post-prandial or metabolic endotoxemia, the number one cause of mortality worldwide

Kiran Krishnan, Microbiome Labs, USA

Title: Antimicrobial activities of Pomegranate (*Punica granatum L*) fruit peel extracts

Shafika A Zaki, Cairo University, Egypt

Title: Anti-inflammatory properties of the olive leaf extract Xorialyc® (*Olea europaea L.*) for psoriasis treatment

Daniel Gonzalez-Hedstrom, Pharmactive Biotech Products S L, Spain

February 25-26, 2019
Prague, Czech RepublicCristian Del Bo et al., J Clin Nutr Diet 2019, Volume: 5
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EFFECT OF CAFFEIC AND CHLOROGENIC ACID IN THE MODULATION OF LIPID ACCUMULATION IN THP-1-DERIVED MACROPHAGES

Cristian Del Bo, Mirko Marino, Massimiliano Tucci, Patrizia Riso and Marisa Porrini

University of Milan, Italy

The differentiation of monocytes into macrophages is a fundamental step for the development of atherogenesis and atherosclerosis. Macrophages participate in lipoprotein accumulation giving rise to foam cells filled with lipid droplets. Several studies seem to suggest an atheroprotective effect of phenolic compounds through a modulation of lipid metabolism. The objective of the present study is to evaluate the role of caffeic acid (CA) and chlorogenic acid (CGA) in counteracting lipid accumulation in a model of monocytes (THP-1) differentiated to macrophages. THP-1-derived macrophages were incubated for 24 h with fatty acids (500 $\mu\text{mol/L}$ oleic/palmitic acid, 2:1 ratio) and phenolic acids (CA and CGA, as single compounds or mix) at different concentrations (0.03, 0.3 and 3 $\mu\text{mol/L}$). Lipid accumulation was quantified with the fluorescent dye Nile red. The fluorescence (excitation: 544 nm, emission: 590 nm) was measured in a fluorescence spectrophotometer and the fold increase compared to the control (without fatty acids) was calculated. Data were analysed by one way ANOVA. ANOVA revealed a significant increased lipid accumulation following the fatty acids exposure ($p < 0.0001$). The mix of CA+CGA significantly reduced lipid accumulation at all concentrations tested (-27.5%, -32.0%, -23.4%, respectively at 0.03, 0.3 and 3 $\mu\text{mol/L}$; $p < 0.01$). Conversely, no effect was observed following the incubation with the single compounds. Although preliminary, the results seem to indicate a potential effect of CA+CGA, but not of the single phenolics, in counteracting lipids accumulation in THP-1-derived macrophages. The effects were observed at physiological relevant concentrations. Ongoing experiments will be useful to confirm the results obtained and to clarify the potentials mechanisms of action involved in the prevention of the atherogenesis process.

Biography

Cristian Del Bo has completed his PhD in Experimental and Clinical Nutrition and Postdoctoral studies in Human Nutrition from the University of Milan. He has completed an Internship at the Antioxidants Research Laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University (Boston, MA), at the Department of Food Science and Human Nutrition of the University of Maine (Orono, ME) and at the Department of Public Health of the University of Copenhagen. He is a Research Fellow in Human Nutrition at the University of Milan. He has published more than 30 papers in peer-reviewed journals. He is on the Editorial Board of the *International Journal of Food Sciences and Nutrition* and Guest Editor of the Special Issue "Dietary Bioactives and Human Health" for the journal *Nutrients*.

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PHARMACOKINETICS OF AFFRON[®], COMMERCIAL SAFFRON (*CROCUS SATIVUS L*) EXTRACT

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There are few studies about the pharmacokinetics of low molecular weight carotenoids such as crocetin or crocins from saffron (*Crocus sativus L*), but none of them is performed with a commercial saffron extract. This study shows the evolution of the main bioactive component, crocin isomers, in blood of Affron[®], a commercial saffron extract, during the pharmacokinetics in humans after oral administration. Pharmacokinetics was performed collecting blood samples at different times: 30, 60, 90, 120, 180, 240, 300, 360 minutes and 24 hours after oral administration of 56 and 84 mg of the commercial saffron extract to a total of 13 subjects. The analysis of the blood samples was carried out by high performance liquid chromatography coupled to diode array. Pharmacokinetics show that crocin isomers are transformed into crocetin rapidly, since mean time (T_{max}) to reach the maximum concentration (C_{max}) of crocetin in blood was between 60 and 90 minutes; the C_{max} and T_{max} values are directly related with the dose administered, being C_{max} 0.165 and 0.462 µg/mL respectively. Despite the fact that crocin isomers could be degraded during digestion, they are able to reach the bloodstream in crocetin form more quickly than other lipophilic carotenoids of higher molecular weight.

Biography

Paula Almodóvar has received her master's degree in Food Science from the Autonomous University of Madrid (Spain) in 2016. Her degree dissertation consisted on carotenoids extraction and characterization from *Chlorella vulgaris*. She is currently pursuing her Master's degree in Chemical Science and Technology at The National Distance Education University (UNED). During her Bachelor's degree, she collaborated with research group on bacterial biotechnology (BIOBACT) of the Institute of Food Science, Technology and Nutrition (ICTAN). She carried out a research project which was focussed on the study of genetic variability of *Lactobacillus* related to hydroxy cinnamic acids metabolism. She has also started working in Pharmactive Biotech Products S L in May' 2016, in the research and development department. Her work is focused on the method of analyse development and plant extracts characterization, as well as in scientific production writing. She has recently published two scientific articles to indexed journals and participated in different scientific congresses.

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NANOENCAPSULATION OF NUTRACEUTICAL COMPOUNDS AND BIONANOENCAPSULATION OF PROTEINS AND NUCLEI ACIDS

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Growing attempts are being made to rationally utilize systems for human health improvement and disease prevention. In this context, this contribution is part of our interest in use nano-encapsulation strategies to construct nano-vehicles; which in turn will exert the controlled and targeted delivery of nutraceuticals. A nutraceutical can be defined as the actual substance that confers a health benefit. Our research group has carried out the nano-encapsulation of bioactive compounds as resveratrol (Res), folic acid (FA), betanin (Bt) into different biocompatible matrices. We also studied the microvesicle production (MV) by *Lactobacillus casei* BL23 involved in its probiotic activity. We characterize the interactions between β -lactoglobulin (β -lg) and isolated 7S and 11S globulins obtained from defatted soy flour and folic acid (FA) at different load ratio and their functional implications, in terms of colloidal behaviour and digestibility. The biological activity of nano-complexes loaded with FA was explored in terms of their capacity to enhance the biomass formation of *L. casei* BL23. The results concerning to nano-complexes inclusion in culture media showed higher bacterial growth. Bt loaded in a nanovehicle of 11S quinoa seed protein was designed. At this respect, we found that protein solubility was increased in the presence of Bt. 11S-Bt nano-complexes showed a synergistic effect in terms of both, antiradical or reducing power capacity in comparison to Bt as evaluated by to methods, 2,2'-azino-bis-(3-ethylbenzothiazoline-6-sulfonate) (ABTS), and by ferric reducing antioxidant power (FRAP). On the other hand, Res was included into nanoparticles of chitosan, a mucoadhesive and positive charged polysaccharide. Bioactivity of all these nanoencapsulated materials were evaluated by in-vitro assays of different human culture cells lines. These nanoencapsulated materials could have the potentiality to exert the bioactive protection and the controlled delivery in food, pharmaceutical and nutraceutical products. MV could be used as nanomachine controlling the host genes expression.

Biography

Oscar E Perez is a Professor at National Lanús University (Buenos Aires) in the Department of Productive Development and Technology. He has been trained in the field of nanoparticles, biopolymers and food colloids. He has expertise in nano and microencapsulation of bioactive compound, i.e. bioactives peptides, micronutrients, folic acid, insulin, growth factors. His research group has started the study of nanovesicle production generated by probiotic lactic acid bacteria, the purpose is exerting the bio-nano-encapsulation of nucleic acids and reporters overexpressed proteins, the so called inter-kingdom communication. He is Author and Co-author of more than 50 scientific papers in recognized journals and book chapters. He has also contributed over 120 communications in conferences.

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MONOSODIUM GLUTAMATE: THE FLAVOUR THAT TAKES HEALTH?

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Food additives are intentionally added substances with a technological or organoleptic purpose during the technological process of a food product. Monosodium glutamate is used to enhance the taste and smell of food (umami flavour). With this study we intended to produce a critical analyse to the additive properties, role in food options and toxicological effects in human health. The research was based on scientific articles in online platforms like Google Scholar and PubMed, since 2007, using the keywords monosodium glutamate, food additive and toxicity. MSG is the sodium salt of a non-essential amino acid found in nature. After ingestion, it is absorbed by the gastrointestinal tract cells. Most of the glutamate present in food is metabolized by the first-pass effect and is used as energy. What isn't metabolized enters the hepatic portal circulation and is metabolized in the liver, generating energy or being converted into urea for excretion in urine. When in contact with disodium salts or guanylate, the product has an effect 6 times higher than expected. Monosodium glutamate is applied to specific food products like soups, seasonings, snacks, meat and milk products. Although it's a food additive that may present negative effects in human health when consumed in high doses, it becomes safe when the established recommendations comply. MSG is not recommended for pregnant women and children under one year old. In conclusion, since there are so many contradictions, it should exist legislation where the limit value for monosodium glutamate would be established.

Biography

Ana Lucia Baltazar is the Head of Dietetics and Nutrition Department at Coimbra Health School. She is a Senior Lecturer and holds a BSc (Hons) in Dietetics, a Master in Health and Safety at Work and is Specialist in Nutrition and Dietetics. She teaches food toxicology and food technology. She is Post-graduated in auditors in HACCP and in Health and Safety at Work. She is a Member of the Working Groups Microbiological Occurrence in the Food Chain, Food toxoinfections and Effective Communication in Food at National Institute of Health Dr. Ricardo Jorge, Lisbon, Portugal. She is a PhD Student in Food Sciences at University of Valencia-Spain.

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February 25-26, 2019
Prague, Czech RepublicKiran Krishnan, J Clin Nutr Diet 2019, Volume: 5
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THE SPECTACULAR ROLE OF THE HUMAN MICROBIOME IN PREVENTING POST-PRANDIAL OR METABOLIC ENDOTOXEMIA, THE NUMBER ONE CAUSE OF MORTALITY WORLDWIDE

Kiran Krishnan

Microbiome Labs, USA

You are more bacteria than you are human with 10 trillion human cells outnumbered by over 100 trillion bacteria cells in and on your body. The human genome contributes just 1% genetic material to daily metabolic function compared to the 99% that is contributed by the microbiome. An often-overlooked role of the microbiome is to prevent post-prandial endotoxemia and the inflammatory devastation that follows. This lecture will illustrate the danger of having post-prandial endotoxemia and why this condition is being called the number one cause of mortality worldwide as it sets up the body for virtually every chronic disease. This condition is caused by eating and a failure of the microbiome to protect its host from this response. You simply cannot completely correct any chronic condition without addressing post-prandial endotoxemia.

Topic overview

1. The latest understanding on the form and function of the human microbiome
2. The development and establishment of the human microbiome and factors that disrupt optimal development.
3. How the microbiome controls the immune system, the brain, the endocrine system and nutrient production – the critical cross-talk between microbe and host.
4. Understanding post-prandial endotoxemia (PPE) and its resulting effects on the human body.
5. Strategies for probiotic therapy that can impact PPE
6. The role of transient, commensal spore based probiotics in bacteriotherapy to treat PPE

Biography

Kiran Krishnan is a Research Microbiologist and has been involved in the dietary supplement and nutrition market for the past 18 years. He comes from a strict research background having spent several years with hands-on R&D in the fields of molecular medicine and microbiology at the University of Iowa. Kiran established a Clinical Research Organization where he designed and conducted dozens of human clinical trials in human nutrition. Kiran is also a co-founder and partner in Nu Science Trading, LLC.; a nutritional technology development and research company. Kiran is also a co-founder and Chief Scientific Officer at Microbiome Labs. In his career, he has developed over 50 private label nutritional products for small to large brands in the global market. He is a frequent lecturer on the Human Microbiome at Medical and Nutrition Conferences. He conducts a very popular Microbiome Series educational Webinar, is an expert guest on National and Satellite radio, has appeared in several international documentaries and has been a guest speaker on several International Health Summits as a microbiome expert. He is currently involved in 10 novel human clinical trials on probiotics and the human microbiome. Kiran is also on the Scientific Advisory Board or a Science Advisor for 7 other companies in the industry.

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ANTIMICROBIAL ACTIVITIES OF POMEGRANATE (*PUNICA GRANATUM* L) FRUIT PEEL EXTRACTS

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Methanol and water extracts of peels from two Egyptian pomegranate varieties (*Punica granatum* L.); Manfalouty and Wardey were screened for antimicrobial activities using the plate diluting method. Antimicrobial activity against four species of common food contamination microorganisms (*Staphylococcus aureus* ATCC 25923, *Escherichia coli* ATCC 69337 and *B. cereus* ATCC 6633, and yeast strain *Candida utilis*) were assessed. A broth micro-dilution susceptibility assay used for the determination of the Minimal inhibitory concentration of pomegranate extracts and the reference. The results showed that the diameters of inhibition zone were different according to the variety and concentrations peel extracts and tested strains. The marked inhibition was associated with methanol extract of each variety. The highest inhibition zone average reached 26 mm for *Staphylococcus aureus* by methanol peel extract, while the lowest detected value was 10 mm for *B. subtilis* by water peel extract. The minimal inhibitory concentration values of the methanol extract of Wardey and Manfalouty peels accounted to 1.0 and 2.0 mg/ml for *Bacillus subtilis* and *Candida utilis* respectively, while it ranged from 0.3-0.5 and 1.5->1.5 mg/ml for *Staphylococcus aureus* and *E. Coli*, in respective order. However, these values for water extracts of Wardey and Manfalouty pomegranate peels were 0.3-0.5, 1 mg/ml for *Staphylococcus aureus*, *E. Coli* and *Bacillus subtilis*, respectively but reached 2.0 mg/ml for *Candida utilis*.

Biography

Shafika Zaki has completed her PhD in food science from Alma Ata Institute, Alma Ata, Kazakhstan. She is an Emeritus Professor at Faculty of Agriculture, Cairo University, Giza, Egypt. Her research interests include food functionality, food processing and food microbiology. She was a Member of promotion committees for professors and associate professors. She was the Principle Investigator of project Cultivation of mushroom on agricultural by-products Grant FRCU University Linkage with Penn State University and Vice Principle Investigator of project Rural and Bedouin women development in food preparation, processing and storage Grant FRCU, University Linkage with the University of Maryland. She was also a Member of the research team of research project Formulation and preparation of low cost high nutritive values diets in UAR funded by the Academy of Scientific Research. She has published more than 50 papers in reputed journals and has been serving as an Editorial Board Member of *repute*.

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ANTI-INFLAMMATORY PROPERTIES OF THE OLIVE LEAF EXTRACT XORIALYC® (*OLEA EUROPAEA L.*) FOR PSORIASIS TREATMENT

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Psoriasis is a common chronic inflammatory disease. Under an inflammatory stimulus, epidermis can convert arachidonic acid to prostaglandin E2 (PGE2), a pro-inflammatory mediator which can elevate the cellular levels of cyclic nucleotides promoting psoriasis pathogenesis. Adherence to prescribed drugs might be a problem in some patients due to side effects associated, so finding an alternative natural treatment is of great interest. Due to the anti-inflammatory properties related to olive (*Olea europaea L.*) leaves, the objective of this work was to characterize the bioactive components of Xorialyc®, an olive leaves extract standardized to ortho-diphenols and luteolin-7-o-glucoside, and test its anti-inflammatory action compared to other similar extracts. Identification of Luteolin-7-o-glucoside was accomplished by high performance liquid chromatography, while the characterization of ortho-diphenol content was carried out by colorimetric determination as catechin monohydrate. To determine the anti-inflammatory activity the production of PGE2 was measured in lipopolysaccharide and interferon γ -stimulated murine macrophages, RAW264.7 cells, in the presence or absence of different doses of Xorialyc®, Diclofenac or other olive leaves extracts. More than 1 mg/g of Luteolin-7-O-glucoside was quantified in Xorialyc® sample at 355 nm. The total ortho-diphenolic content was higher than 30% of dry basis. All extracts inhibited the release of PGE2 in a dose dependent relation, being Xorialyc® the most active (p-value ≤ 0.05). Compared with Diclofenac, Xorialyc® induced higher inhibition of PGE2 release at lower doses (p-value ≤ 0.05). The high levels of ortho-diphenols and Luteolin-7-O-glucoside at Xorialyc® may be responsible for the higher inhibition of PGE2 release compared to other commercial olive leaves extracts, being at lower doses more active than Diclofenac. These findings may help in the search of more natural anti-psoriatic treatments as an alternative to the pharmacological ones that, in general, are related to higher side effects.

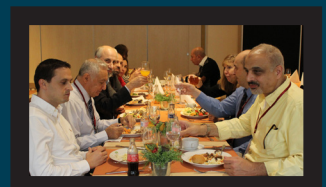
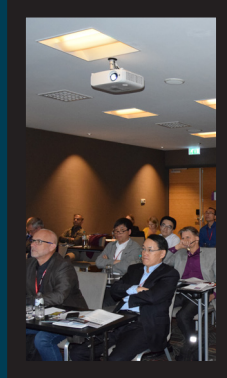
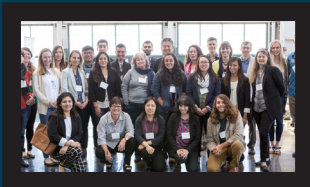
Biography

Daniel Gonzalez-Hedstrom has obtained his Bachelors' in Biochemistry in 2016 at the Universitat de les Illes Balears (Spain). After completing the Bachelors' Biochemistry, he obtained his Masters' in Pharmacological Research at the Universidad Autonoma de Madrid (Spain), where he carried out his Master thesis about the cardiovascular insulin resistance in an experimental model of childhood obesity in rats. He is doing his PhD in Pharmacology and Physiology at the Research & Development department of the company, Pharmactive Biotech Products S L in collaboration with the research group of Dr Miriam Granado, who protects the doctoral thesis, under the Doctorado Industrial Fellowship by the Comunidad de Madrid. His work is focused in the development of new plant-based nutraceuticals and tests its functionality in vitro and in vivo. He has recently published 3 papers in Q1 journals and he has participated in many different scientific congresses.

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DAY 1

Video Presentation



3rd World Congress on
**NUTRITION, DIETETICS AND
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February 25-26, 2019
Prague, Czech RepublicMaria M Papamichael et al., J Clin Nutr Diet 2019, Volume: 5
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THE IMPORTANCE OF VITAMIN D STATUS ON LUNG FUNCTION IN ASTHMATIC CHILDREN

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³European Institute of Nutritional Medicine, Italy

Vitamin D is a potent immunomodulator capable of dampening inflammatory signals in cells involved in the allergic response including asthma. However, evidence supporting a link between low vitamin D levels in children and higher risk of asthma exacerbations and poor lung function is inconsistent. The objective of this clinical trial was to investigate the potential role of vitamin D status in asthmatic children following a Mediterranean diet intervention. Greek asthmatic children aged 5-12 years old (51.6% male, 48.4% girls) were recruited from a pediatric asthma clinic in Athens, Greece and randomized into two groups. The intervention group consumed a Mediterranean diet plus two meals of fatty fish per week (≥ 150 g cooked filleted fish/meal) for six months and the control, their usual diet. Pulmonary function and bronchial inflammation were assessed using spirometry and Fractional exhaled Nitric Oxide analysis (FeNO). Serum vitamin D status was measured using Enzyme-Linked Immuno Assay (ELISA). Vitamin D deficiency was defined at serum 25-OH D < 25 ng/mL. At baseline, 64% of children (61% girls, 39% boys) were deficient in vitamin D. Multiple linear regression model adjusted for confounding factors of age, sex, regular physical activity and BMI showed that children in the intervention group with sufficient plasma vitamin D levels at baseline had increased FEV1/FVC by 4.89 units ($\beta = 4.89$; 95% CI: 1.19-8.61; $p = 0.013$) and FEF25-75% by 12.83 units ($\beta = 12.83$; 95% CI: 4.27-21.40; $p = 0.006$) as compared to the control group. No associations were observed for children deficient in vitamin D or for FeNO. In conclusion, consumption of Mediterranean diet supplemented with fatty fish significantly improved pulmonary function in asthmatic children with plasma vitamin D levels ≥ 25 ng/mL. More intervention studies are recommended to support the promising findings and to further clarify the role of vitamin D status in the management of asthma in children.

Biography

Maria M Papamichael is a Registered Dietician/Sports Nutritionist with the British Dietetic Association who has dedicated her life in educating people, the importance of good nutrition and exercise in the prevention and management of disease as well as in improving health and well-being. She completed her masters in Human Nutrition/Sports Nutrition (PhDc) from La Trobe University, Australia. She is a Specialist on the Mediterranean diet and asthma. She has undertaken a PhD research project at La Trobe University investigating the prophylactic potential of a Mediterranean diet enriched with fatty fish in the management of asthma in children.

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