2 academic elective credits from the Balearic Island’s University are awarded for attendance of this Workshop.
## SCIENTIFIC PROGRAM

### OCTOBER, MONDAY 15th

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<td>09.30-10.00</td>
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<td>Ascensión Marcos. i-FINER</td>
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<td>Philip Calder. i-FINER</td>
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<td>Josep Antoni Tur. University of Balearic Islands.</td>
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<td>10.00-11.00</td>
<td><strong>OPENING LECTURE</strong></td>
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<td>Chairpersons: Ascensión Marcos, Spain and Mireille Dardenne, France.</td>
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<td>- Developmental immunonutrition: from basic concepts in physiology to nutritional imbalances. Wilson Savino. Laboratory of Thymus Research, Oswaldo Cruz Institute, Rio de Janeiro, Brazil.</td>
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<td>11.00-11.30</td>
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<td>Chairpersons: Julia Wärnberg, Spain and Eduardo Ortega, Spain.</td>
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<td>Oral presentations:</td>
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<td>Salivary IgA response to astaxanthin supplementation in young soccer players. I. Baralic, B. Đorđević, I. Đuričić, S. Šobajić, I. Stanković, and N. Dikić</td>
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<td>13.30-14.30</td>
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<td>14.30-16.30</td>
<td><strong>POSTER SESSION I</strong> (Posters relation at the end of the program)</td>
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<td>17.00-19.00</td>
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<td><strong>FUNCTIONAL FOODS AND BIOACTIVE COMPOUNDS</strong></td>
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<td>Chairpersons: Mauro Serafini, Italy and Jorge Mujico, Spain.</td>
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<td>- Fermented grape marc(s) activate the human T regulatory pathway: Biological and clinical significance. Emilio Jirillo. Department of Basic Medical Sciences, Faculty of Medicine, University of Bari, Bari (Italy).</td>
</tr>
<tr>
<td></td>
<td>- Anti-inflammatory effects of moderate beer consumption: Alcoholic or non-alcoholic beer? Ramón Estruch. Clinic Hospital, University of Barcelona. Spain.</td>
</tr>
</tbody>
</table>
Oral presentations:
Zearalenone induces alterations of hepatic immune responses by modulation of pro-
inflammatory cytokines and matrix metalloproteinase gene expression.
G. Pistol, M. Gras, D.E. Marin, C. Tabuc, I. Taranu

Engineering flavonoid metabolism in plants for health-promoting foods.
E. Butelli, S. Carding, M. Tomlinson, L. Hill, K. Bulling, Y. Zhang, C. Martin

OCTOBER, TUESDAY 16th

08.00-09.30  POSTER SESSION II (Posters relation at the end of the program)
09.30-11.00  SESSION III

METHODOLOGY ON IMMUNONUTRITION

Chairpersons: Philip Calder, United Kingdom and Wilson Savino, Brazil.

• Multiplex analysis of active molecules in immunomodulation: Techniques and applications.

• Nutritional immunology studies in man: What we should measure and why.
Ruud Albers. NutriLeads BV. The Netherlands.

Oral presentations:

How studying immunonutrients in early life: the neonatal rat model.
F.J. Pérez-Cano, M. Castell, C. Castellote, A. Franch

Potential interest of InsR, CPT1A, SLC27A2, FASN and PPARα expression in blood cells as biomarkers of dyslipidemia in children.

11.00-11.30  REFRESHMENT BREAK
11.30-13.30  SESSION IV

MICRONUTRIENTS

Chairpersons: Nora Slobodianik, Argentina and Gabriela Perdigón, Argentina.

• Reviving the ageing immune response - are all antioxidants equal?
Simin Meydani. Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University, Boston, USA.

• Zinc supplementation in elderly.

Oral presentations:

High-Dosed vitamin C plus zinc (Redoxon® Double Action) for the common cold.
S. Maggini, S. Beveridge, M. Suter

Cord blood vitamin D status: evidence for altered CD4+ naïve and gut-homing T cell accumulation.
Ascorbic acid (Redoxon®) supplementation modulates gene expression in peripheral blood mononuclear cells specifically upon an inflammatory stimulus. A pilot study.
R. Canali, G. Leoni, L. Natarella, E. Azzini, L. Barella, O. Sancak, F. Virgili

13.30-14.30  LUNCH

14.30-16.30  SESSION V

PROBIOTICS AND PREBIOTICS
Chairpersons: Gabriela Perdigón, Argentina and Esther Nova, Spain.

• The effect of consumption of a fermented milk product on the human gut microbiome in ulcerative colitis patients: an exploratory study.

• Faecal transplant or probiotic cocktails?

Oral presentations:
Screening of different fibers for their prebiotic activity and potential systemic health benefit.
A. Meynier, I. Moreira De Almeida, M. Tabernero-Urbiea, S. Vinoy

Effects of Bifidobacterium longum bv. infantis CCUG 52486 combined with glucooligosaccharide on immune cell populations in healthy young and older subjects receiving an influenza vaccination.
A. Przemska, C. Maidens, C. Childs, H. Dong, K. Tuohy, I. Rowland, M. Gosney, S. Todd, P. Yaqoob

Bifidobacterium longum bv. infantis CCUG 52486 combined with glucooligosaccharide significantly reduces the duration of self-reported cold and flu-like symptoms among healthy older adults after seasonal influenza vaccination: results from a randomised controlled trial.

B2-1 fructans have a bifidogenic effect in healthy middle-aged humans and enhance the antibody response to seasonal influenza vaccination, but do not alter immune responses in absence of vaccination.

Supplementation with high esterified pectins decreases energy efficiency and adiposity in an obesity-prone rat model, activating AMPK and inhibiting ACC enzymes in liver by phosphorylation.
F.J. García, A.M. Rodríguez, C. Picó, A. Palou

The use of probiotic solution as supplement and restoring agent in some skin pathologies: Pemphigoid lesions, psoriasis, ulcerations and others.
I. Cesaroni, H. Poteca, A. Garrido

16.30-17.00  REFRESHMENT BREAK

17.00-19.00  SESSION VI

DIET RELATED FATS
Chairpersons: Philip Calder, United Kingdom and Nora Slobodianik, Argentina.

• Virgin olive oil and nuts as key foods of the Mediterranean diet effects on inflammatory biomarkers related to atherosclerosis.
  Ramón Estruch. Clinic Hospital. University of Barcelona, Spain.

• Diet, lipid rafts, inflammation and cancer.
  Robert S. Chapkin. Department of Nutrition & Food Science, Texas A&M University, College Station.
Oral presentations:

Relationship between fish-eating habits, cytokine production and chronic urticaria, with a special emphasis on Anisakis simplex associated sensitization associated chronic urticaria.
A. Daschner, A. Valls, C. De Frutos, V. Fernández-Fígares, M. Rodero, C. Cuéllar

Fatty acid profile in children suffering from Cystic fibrosis.

Effect of different dietary lipids on immune response of neutropenic mice infected with Listeria monocytogenes.
E. Puertollano, J.M. Ceron, J. Contreras, M.A. Puertollano, G. Álvarez de Cienfuegos

OCTOBER, WEDNESDAY 17th

08.00-09.30 POSTER SESSION III (Posters related at the end of the program)

09.30-11.00 SESSION VII

TRANSLATIONAL AND INTEGRATIVE APPROACH TO IMMUNONUTRITION

Chairpersons: Laurence Harbige, United Kingdom and Roxana Valdés, México.

• The microbial environment, the microbiota and the regulation of inflammation.
  Graham Rook. Centre for Clinical Microbiology, University College London. United Kingdom.

• Nutritional modification of immunity: Pushing the envelope and entering 21st century genomics and proteomics?
  Carlo Selmi. University of California at Davies.

Oral presentations:

Influence of early environmental factors on peripheral lymphocyte subsets and gut microbiota in infants at risk for celiac disease.

11.00-11.30 REFRESHMENT BREAK

11.30-13.30 SESSION VIII

OBESITY-RELATED INFLAMMATORY DISEASES

Chairpersons: Roxana Valdés, Mexico and Mireille Dardenne, France.

• Obesity: phenotype vs genotype. A summarized view.
  Manuel Serrano-Ríos. Research Unit. Laboratory of Diabetes and Lipids. Clinic Hospital San Carlos, Danone Institute. Spain.

• Type 2 diabetes and immunity.
  José Manuel Fernández-Real. Department of Nutrition. Institute of Biomedical Research of Girona, Spain.

Oral presentations:

Biochemical parameters in patients suffering from head and neck cancer. Effect of nutritional support. Preliminary study.
T and B lymphocyte subsets are differentially affected in Anorexia Nervosa diagnostic subtypes.
E. Nova, S. Gómez-Martínez, A. Gheorghe, P. Andrés, M. Graell, A. Marcos

Effect of carboxymethyllysine intake on inflammatory bowel disease.
J.A. Rufian-Henares, S. Pastoriza

Delta-5 and delta-6 desaturases in peripheral blood mononuclear cells, β7+ and β7- lymphocytes in healthy controls and patients with Crohn’s disease.
M. Xiang, H.O. Al-Hassi, S.C. Knight, I.S. Harbige

13.30-14.30  LUNCH

14.30-16.30  SESSION IX

CHILDHOOD OBESITY AND INFLAMMATION
Chairpersons: Laurence Harbige, United Kingdom and Fátima Pérez de Heredia, Spain.

• Metabolic imprinting by leptin in early life to prevent obesity.
  Catalina Picó/Andreu Palou. University of Balearic Islands and CIBERobn, Palma de Mallorca. Spain.

• Obesity and asthma in children.
  Kostas N. Priftis. 3rd Department of Paediatrics, Athens University Medical School, Greece.

• Toll-like and Nod-like receptors: a link between microbiota, inflammation and obesity.
  Ángel Gil. Department of Biochemistry and Molecular Biology. School of Pharmacy. University of Granada. Spain.

Oral presentations:

Obesity induction during adolescence in ICR-CD1 mice causes CVD risk in the adulthood.

White blood cell count is associated with features of the metabolic syndrome in European adolescents. The HELENA Study.

Lymphocyte subsets, anthropometric measurements and body composition in European adolescents. The HELENA Study.

16.30-17.00  REFRESHMENT BREAK

17.00-18.00  CLOSING LECTURE

PROGRAMMING ON IMMUNONUTRITION
Chairpersons: Liseti Solano, Venezuela and Ascensión Marcos, Spain.

• Early nutrition programming of the immune system.

18.00-19.00  CLOSING CEREMONY
Rapid incorporation of omega-3 fatty acids into blood mononuclear cells
AL West, GC Burdge and PC Calder.

Intake of dehydrated apple enriched by mandarin juice by vacuum impregnation reduces oxidative stress induced by tamoxifen in rats.

Antioxidant capacity of colostrum milk is influenced by maternal diet.

Effects of zearalenone and its metabolites on the swine epithelial intestinal cell line: IPEC 1.

Influence of several sources of cocoa flavonoids on humoral immune system in young rats.
M Massot-Cladera, M ABril-Gil, T Pérez-Berezo, K Becerra, S Torres, A Franch, FJ Pérez-Cano and M Castell.

Carotenoids of Traditional Foods from Black Sea Area Countries and their relation with Immune Response.

Evolution of plasma inflammatory biomarkers after the intake of an orange-based beverage enriched with polyphenols in overweight adults (BIONAOS Study).

In vitro effect of pine bark extract added to fruit juices on gutinflammation after gastrointestinal digestion.

Comparative aspects of in vitro proliferation of human and porcine intestinal cells exposed to mycotoxin zearalenone and its derivatives.
Taranu I, Marin DE, Burlacu R, Calin GL.

Analysis of the early life treatment to kids with a halogenated methane analogue additive on immunoglobulin G levels.

Differences on lymphocyte subset counts according to the degree of overweight-obesity in adolescents from Madrid. The AFINOS Study.
AM Veses, S Gómez-Martínez, F Pérez de Heredia, B Zapatera, OL Veiga and A Marcos.

Oxidative stress in immune cells of adult obese mice fed during their adolescence with a high (60%) fat diet.
Impairment of proliferation and NK activity of spleen leucocytes in young rats treated with a leptin antagonist during the physiological leptin surge through postnatal days 5-10.

Effect of exercise without diet on functional capacity of peritoneal macrophages and TNF-α levels in blood and in adipose tissue in the obese Zucker rat model of the metabolic syndrome.
L Martín-Cordero, F Reis, JJ García, F Teixeira and E Ortega.

A single bout of exhaustive exercise in relation to endoplasmic reticulum stress in liver.
Y Wen, M Xiang, LS Harbige and H Ai.

Relationship between a single bout of exhaustive exercise and endoplasmic reticulum stress in skeletal muscle.
M Xiang, Y Wen, H Ai and LS Harbige.

Evolution of a Salmonella typhimurium infection in younger and older mice under caloric restriction.

Probiotic protection of rotavirus gastroenteritis in an experimental rat model in early life.
T Pérez-Berezo, S Ramos-Romero, C Castellote, M Castell, A Franch and FJ Pérez-Cano.

β-Galactomannans protect epithelial barrier function disruption induced by Salmonella Enteritidis in human intestinal Caco-2 cells.
MT Brufau, F Guardiola, R Bou, B Vità, Ana M Marqués, R Ferrer and R Martín-Venegas.

Effect of a probiotic fermented milk on the thymus in a non-sever protein-energy-malnutrition model in mice.
I. Novotny Núñez, C. Maldonado Galdeano, E. Carmuega, R. Weill, A. de Moreno de LeBlanc and G. Perdigón.

Immune modulation promoted by probiotic fermented milk in the mucosal immune system in an experimental model of allergy.
E. Velez, C. Maldonado, E. Carmuega, R. Weil and G. Perdigón.

Role of the TLR/MyD88 pathway in the modulation of the immune system activation mediated by Lactobacillus casei CRL 431.
C. Maldonado-Galdeano, G. Perdigón and N. Thieblemont.

Human intestinal dendritic cells decrease cytokine release against Salmonella infection in the presence of Lactobacillus paracasei CNCM I-4034, a novel strain isolated from breast-fed newborns.

Lactobacillus paracasei CNCM I-4034 enhances the intestinal immune response in obese Zucker rats.

Lactobacillus rhamnosus CNCM I-4036 decrease inflammatory cytokine release in human intestinal epithelial cells induced by enterotoxigenic Escherichia coli.

Bacterial immune modulation of the cytokine response elicited by gliadin in an in vitro model of celiac disease.
Culture Supernatants from Lactobacillus plantarum Induce Necrosis on a Human Promyelocytic Leukemia Cell Line.
M.A. Puertollano, E. Puertollano, G. Álvarez de Cienfuegos and M.A. de Pablo.

SESSION II: OCTOBER, TUESDAY 16TH FROM 08.00 TO 09.30H.

Breast cancer.
M. Nooritajer.

LTD4 is involved in the control of non-differentiated intestinal epithelial cell growth.
M. Cabral, JJ. Moreno and R. Martín-Venegas.

Inflammatory status in patients with different stages of chronic kidney disease.
HF Tbahriti, D Meknassi, A Messaoudi, A Kaddous, K Mekki and M Bouchenak.

A. Valente, M. Bicho, TG. Albuquerque, R. Duarte, JF. Raposo and HS. Costa.

Integrative analysis associated with cardiovascular disease and Omega-Probiotic intake.
Torres-González L. A., Martínez-Solís J. P., Mendoza-Patiño F. J., Gamiño-Iriarte A., Reyes-Escogido L.

The mode of preparation of white yam (dioscorea rotunda) affects the glycaemic response in type II diabetic Nigerian subjects.

Vitamins with anti-inflammatory properties in diabetic and nondiabetic subjects.

Induction of a food allergy model in Brown Norway rats.

Biomarkers of inflammation in obese children: relationship with Vitamin D insufficiency.

Changes in lymphocyte subsets and functions in spleen from mice with high fat diet-induced obesity.

Anthropometric and inflammatory status in west Algerians adolescents.
H Ghomari-Boukhatem, A Bouchouicha, K Mekki and M Bouchenak.

Metabolic and Inflammatory Markers in Overweight and Obese 6 to 12 y old Mexican School Children.
POSTER SESSIONS

Effect of an early fat-rich diet on immune cell functions and redox status of adolescent mice.

Fat-rich diet-induced obese mice show premature immunosenescence.
O Hernández, LE Díaz, G Baccan, A Gheorge, B Zapatera, A Marcos, M de La Fuente

Network Modeling of Gene Expression Microarray in Patients with Obesity and Lactobacillus Probiotic Intake.
Torres-González L. A., Rodríguez-León O., Alvarado-Carrillo V., Reyes Escogido L.

Increase in the secretion of pro-inflammatory cytokines by peritoneal leucocytes in a genetic mouse model of obesity and metabolic syndrome.
N.M. de Castro, J. Cruces and M. de La Fuente.

Effect of exercise on visfatin and AMP-activated protein kinase expression in obesity.
H Xiao, M Xiang, LS Harbige and H Ai.

Ghrelin as a novel peptide hormone in obesity and weight loss.
W Liu, M Xiang, LS Harbige and H Ai.

IL-18, an indicator of insulin resistance?

SESSION III: OCTOBER, WEDNESDAY, 17TH FROM 08.00 TO 09.30H.

Effects of organic and conventional cultivation systems on plasma antibody status in humans.

Plasma inflammatory and vascular homeostasis biomarkers in newborns are not affected by mothers’ oily fish intake.
CE Garcia-Rodriguez, MD Mesa, J Olza, CM Aguilera, EA Miles, PS Noakes, M Vlachava, LS Kremmyda, ND Diaper, KM Godfrey, PC Calder and A Gil.

Cytokines profiles in intestinal epithelial (Caco-2) cells exposed to 7-ketostigmasterol or 7-ketocholesterol.
L., Alemany, J.M., Laparra, R., Barberá and A. Alegria

Immunological biomarkers in childhood and adolescence obesity.

Tomato, tocopherols and the level of ige.

Modulation of inflammatory genes in THP-1 derived macrophages by fatty acids.
C Paras-Chavez, M Massodi, P Noakes and PC Calder.

Pepsin hydrolysis of bovin -lactoglobulin under microwave reduce it’s allergenicity as studied ex vivo in murine model of allergy.
El Mecherfi Kamel Eddine, Negaoui Hanan, Kaddouri Hanane, Haddi Abir, Choiset Yvan, Rabesona Hanitra, Chobert Jean-Marc, Boudraa Ghazalia, Touhami Mahmoud, Kheroua Omar, Haertle Thomas and Saidi Djamel.
Pressurized liquids as an alternative green process to obtain anti-inflammatory agents from rosemary, marjoram and basil.
E. Arranz, E. Vázquez, L. Jaime, G. Reglero and S. Santoyo.

α-tocopherol and its impact on GALT.

IgA levels in lactating dairy goats fed diets including greenhouse wastes.

Total IgA and IgG levels in goats fed diets including greenhouse wastes.

Effect of low-protein diet supplemented with short- and medium chain fatty acids on immune responses of E. coli challenged weaned piglets.

Lipids and cytokines: study in experimental model.
PD Perris, MF Godoy, I Fernandez, C Mambrin, MC Sanahuja, EM Insani, NH Slobodianik and MS Feliu.

Role of 12-lipoxygenase derived eicosanoids on epithelial barrier function in intestinal Caco-2 cells.
MJ Rodríguez-Lagunas, JJ Moreno and R Ferrer.

High-fat concentration diets provided by different sources. Effect on thymus’ fatty acids composition of adult rats.
C Silva, P Perris, I Fernández, N Pellegrino, C Mambrin, N Slobodianik And MS Feliu.

Effect of a quinoa (Chenopodium quinoa W) based diet on the intestinal mucosa of growing Wistar rats.
SM Vidueiros, I Fernández, D Bertero, ME Roux and A Pallaro.

Biomolecular Methods for Analyses of Apple Allergens.

Identification of Mal d 1 Apple Allergens with PCR-techniques.

Improvement of immune functions in elderly men and women after 3 months of vitamin C and vitamin C plus E supplementation.
M de La Fuente, O Hernández, C Sánchez, F Arnalich, A Hernanz.

What constitutes a nutritious school lunch?
U Rosander, K Rumpunen, H Lindmark-Månsson, B Gullberg, M Paulsson, I Holm.
COMMITTEES

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MasterCongresos
Tel.: +34 91 662 46 50
E-mail: info@mastercongresos.com
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Iberostar Royal Cristina Hotel 4*
Calle Bartomeu Xamena, s/n
Playa de Palma - España
CP 07610
Tel.: +3 4971 49 22 11