

12th International conference on One Carbon Metabolism, B Vitamins and Homocysteine

Hotel Termes Montbrió, Montbrió, Southern Catalonia, Spain

June 9th to 13th 2019

Preliminary Scientific Programme		
Sunday		
<i>09/06/2019</i>		
15:00		Check in
15:30 – 19:30		Registration & hanging of posters
		Hemicicle theatre
16:30-18:30		Inaugural session and Keynote lectures
		Chair Michelle Murphy, Universitat Rovira i Virgili, Spain
16:30 – 16:45		Opening address by the very honorable Rector of the Universitat Rovira i Virgili, Prof Maria José Figueras
16:45 – 17:20		Honorary presidential lecture Methionine Synthase: the beating heart in a complex system. Anne Molloy, (Dublin, Ireland)
17:20 – 17:45		How DNA methylation contributes to health and disease. Manel Esteller (Barcelona, Spain)
17:55 – 18:30		Metabolomics implicates amino acid metabolism as a key node in cardiometabolic disease pathogenesis. Chris Newgard (Durham, NC, USA).
18:30 – 20:00		Welcome reception Hotel Termes Montbrió
Monday		
<i>10/06/2019</i>		
07:00 – 18:00 h		Registration desk open
		Hemicicle theatre
08:30 – 08:40		Welcome Michelle Murphy
08:40 – 10:00		Plenary session 1 A multidisciplinary approach to understanding one carbon metabolism from the nucleus to the clinic Chair Rima Rozen (Montreal, Canada)
08:40 – 09:05		Nuclear one-carbon metabolism in embryonic development and disease. Patrick Stover (College Station TX , USA)
9:05-9:25		The role of perturbed B vitamin status in the development of pathogenic mechanisms: evidence from Animal studies. Amanda MacFarlane (Ottawa, Canada)
9:25-9:50		The role of B vitamins in health and disease: the snakes and ladders of evidence from human observational studies and trials. Paul Jacques (Boston MA, USA)
09:50 – 10:15		The Multidisciplinary Making of the <i>MTHFR</i> Story: Past, Present, and Future. Joshua Miller (New Brunswick NJ, USA)
10:15 – 10:45		Refreshment Break
		Hemicicle theatre
10:45 – 12:15		Plenary session 2 Pre-natal function/dysfunction of folate one-carbon metabolism Chair Anne Parle-McDermott (Dublin, Ireland)

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10:45 – 11:15		Folate, folic acid and neural tube defects. Nicholas Greene (London, UK).
11:15 – 11:40		Embryonic Consequences of Abnormal Folate Transport. Richard Finnell (Houston TX, USA)
11:40 - 12:00		One carbon metabolism: Linking nutritional biochemistry to epigenetic programming of lifetime development. Kevin Sinclair (Nottingham, UK).
12:00 - 12:15		Absorption and tissue uptake of folate forms in a rat model: Implications for the treatment of folate receptor autoimmune disorder in pregnancy and autism. Edward Quadros (Brooklyn, USA).
12:30 - 14:00		Lunch break
		Hemicicle theatre
		Mare Nostrum Hall
14:00 - 15:15		Parallel sessions 1-2
		Chairs Joshua Miller (USA) and TBC
		Parallel session 1
		Deficiencies and excesses in one carbon metabolism and cancer Chair Joshua Miller (New Brunswick NJ, USA)
14:00 - 14:30		Methionine dependence and folate metabolism: an adaptive mechanism of cancer cells? Jean-Louis Guéant (Nancy, France).
14:30 - 14:55		Methionine adenosyltransferases in liver cancer. José María Mato (Derio, Spain).
14:55 - 15:15		Folate restriction differentially modulates EMT and interferon gene signatures in epithelial versus mesenchymal triple-negative breast cancer cells. Dieuwertje Kok (Wageningen, The Netherlands).
		<i>Take home message/ reporting postdoc</i>
		Parallel session 2
		The effects of nutrient and metabolite interactions with the microbiome on nutrient uptake and function Chair TBC
14:00 - 14:30		Microbiome modulation of response to pharmaceutical treatment in the management of disease, and to nutrients. Felipe Cabreiro (London, UK).
14:30 - 14:55		The microbiome: a boundary between the metabolome and the epigenome. Oscar Yanes (Tarragona, Spain).
14:55 - 15:15		Breast milk betaine content, early life gut microbiome, and long term metabolic health. Carles Lerin (Barcelona, Spain)
		<i>Take home message/ reporting postdoc</i>
15:15 - 16:15		Poster session 1 and refreshment break
		Hemicicle theatre
16:15 – 17:55		Plenary session 3
		Genes, nutrients and interactions in the regulation of one carbon metabolism Chair Mary Ward (Coleraine, Northern Ireland)
16:15 – 16:45		Gene-nutrient interactions in folate metabolism: impact on several systems. Rima Rozen (Montreal, Canada).

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16:45 - 17:10		New insights into formate production and utilisation. Margaret Brosnan (Saint John's, NL, Canada)
17:10 - 17:25		Impact of the <i>MTHFR</i> C677T polymorphism on one-carbon metabolites: evidence from a randomised trial of riboflavin supplementation. Martina Rooney (Coleraine, Northern Ireland).
17:25 - 17:40		<i>MTHFR</i> C677T polymorphism increases MTX sensitivity via the inhibition of S-adenosylmethionine and de novo purine synthesis. En-Pei Chiang (Taichung, Taiwan).
17:40 - 17:55		Metabolic disturbances and clinical pathologies in the B12-deficient rodent. Barry Shane (Oakland, California, USA).
Tuesday 11/06/2019		
8:15 - 10:00		Hemicicle theatre
		Plenary session 4 One carbon metabolism genes and inborn errors of metabolism Chair Jean-Louis Guéant (Nancy, France).
8:15 - 8:45		Cobalamin C Deficiency: Clinical Phenotypes, Animal Models and New Therapies. Charles Venditti (Bethesda MA, USA).
8:45-9:10		Transsulfuration and further downstream catabolism of H ₂ S. Viktor Kozich (Prague, Czech Republic).
9.10 – 9:30		The evolving field of human vitamin B6-dependent disorders. Philippa Mills (London, UK).
9:30 – 9:45		Deleterious mutations in ALDH1L2 as a novel cause for neuro-ichthyotic syndrome. Sergey Krupenko (Chapel Hill, USA).
9:45 – 10:00		Normalization of plasma homocysteine in homocystinuric mice: PEG-CBD versus methionine restriction. Kenneth Maclean (Denver, USA).
10:00-10:30		Refreshment break
		Hemicicle theatre
		Mare Nostrum Hall
10:30 - 12:15		Parallel sessions 3 & 4 Chairs Rita Castro (USA & Portugal) and Per Ueland (Norway)
		Parallel session 3 Alterations in one carbon metabolism, vascular pathogenic mechanisms and prevention of adverse health outcomes Chair Rita Castro (Pennsylvania, USA & Lisbon, Portugal)
10:30 - 11:00		Homocysteine Modification in Protein Structure/Function and Human Disease. Hieronim Jakubowski (Poznań, Poland)
11:00 - 11:25		Lessons learned in the mouse model, Sanjana Dayal (Iowa, USA)
11:25 - 11:45		Dietary choline is related to increased risk of acute myocardial infarction in patients with stable angina pectoris. Anthea Van Parys (Bergen, Norway).
11:45 – 12:05		Serum trimethylamine N-oxide (TMAO) and cardiovascular disease risk in a large, biracial U.S. cohort. Katie Meyer (Chapel Hill, USA).
		<i>Take home message/ reporting postdoc</i>
		Parallel session 4 B vitamins, homocysteine, the metabolome and diagnostics

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		Chair Per Ueland (Bergen, Norway)
10:30 – 11:00		Application of metabolomic techniques to study altered one-carbon metabolism and hyperhomocysteinemia. Teodoro Bottiglieri (Dallas TX, USA)
11:00 - 11:20		Vitamin B6, kynurenines and related biomarkers as predictors of disease. Arve Ulvik (Bergen, Norway)
11:20 - 11:35		Body mass index determines the response of plasma sulfur amino acids to methionine loading. Amany Elshorbagy (Oxford, UK).
11:35 – 11:50		Response of mouse liver metabolome to changes in folate supplementation. Natalia Krupenko (Chapel Hill, USA)
11:50 – 12:00		Biomarkers Related to One-Carbon Metabolism and Vitamin Status Show Adequate Preanalytical Stability. Adrian McCann (Bergen, Norway).
12:00 - 12:10		High Prevalence of False Positive Low Cobalamin Values in a Routine Hematology Clinic. Sally Stabler (Aurora CO, USA)
		<i>Take home message /reporting postdoc</i>
12:15		Free afternoon for networking
Wednesday 12/06/2019		
		Hemicicle theatre
8:30 - 10:00		Plenary session 5 The role of one carbon metabolism in the <i>in utero</i> programming of early development and health Chair Ebba Nexø (Aarhus, Denmark)
8:30 – 9:00		The placenta-yolk sac partnership in embryonic folate delivery. Jocelyn Glazier (Manchester, UK).
9:00 - 9:25		Periconception one carbon metabolism and embryonic and placental health. Regine Steegers-Theunissen (Rotterdam, The Netherlands).
9:25 - 9:45		Foetal programming of Folate/B12 and Aortic remodeling during ageing. Britany Ballint (Nancy, France).
9:45 - 10:00		Vitamin B12 and folate status is associated with insulin resistance during the third trimester of pregnancy in South Asians in the UK. Agata Sobczynska-Malefora (London, UK).
10:00 - 10:45		Refreshment break and group photo
10:45 - 12:00		Hemicicle theatre
		Plenary session 6 The links between early status in key 1C micronutrients and child health and development Chair Lindsay Allen (Davis, USA)
10:45 - 11:15		Prenatal nutrition: relations with perinatal epigenetics and later obesity and metabolic risk. Keith Godfrey (Southampton, UK)
11:15 - 11:45		Maternal vitamin B12 status and lactation: observations and interventions. Lindsay Allen (Davis CA, USA)
11:45 - 12:15		Choline intake during early life and neurodevelopment and cognition. Steve Zeisel (Kannapolis NC, USA).
12:15 - 13:45		Lunch Break

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13:45 - 15:00		Hemicicle theatre
		Plenary session 7 Synthetic as compared to natural B-vitamins in health and disease
		Chair Anne Molloy (Dublin, Ireland).
13:45 - 14:15		Revisiting prevention and treatment of vitamin B12 deficiency. Ebba Nexø (Aarhus, Denmark).
14:15 - 14:40		Achieving Optimal Folate Status for Health (in European Populations): natural food folates versus folic acid. Helene McNulty (Coleraine, Northern Ireland).
14:40 - 15:00		The PREDIMED study. Focus on B vitamins in the Mediterranean diet. Emilio Ros (Barcelona, Spain).
15:00-15:15		From possible inadequacy to excess – discrepancy in folate status and folic acid intake of pregnant women across countries and supplementation guidelines. Yvonne Lamers (Vancouver, Canada).
15:15 - 16:15		Poster session 2 and refreshment break
		Hemicicle theatre
		Plenary session 8 B vitamin transport, epigenetics and metabolic influences
		Chair (Barry Shane, Oakland, California, USA)
16:15 - 16:45		Vitamin B12 transport, lessons learned from humans, mice and fish. Larry Brody (Bethesda, USA).
16:45 - 17:05		Associations between maternal and paternal dietary methyl-donor intake and neural function in the offspring. Dan Ehninger (Bonn, Germany).
17:05 - 17:20		Effect of diet-induced hyperhomocysteinemia in aortic plaque burden and specific histone methylation in apo-E knockout mice: preliminary results. Rita Castro (Pennsylvania, USA & Lisbon, Portugal).
17:20 - 17:35		S-adenosylmethionine supplementation modulates microRNAs in neuronal cells. Andrea Fuso (Rome, Italy)
17:35 - 17:50		Identification of protein-protein interactions involving enzymes of hepatic homocysteine metabolism. Maria Angeles Pajares (Madrid, Spain).
20:00		Gala Supper Hotel Termes Montbrío
Thursday 13/06/2019		
6:45 - 9:15		Breakfast and checkout, luggage storage
		Hemicicle theatre
9:15 - 11:00		Plenary session 9 One carbon metabolism and chronic diseases: pathogenic mechanisms and prevention
		Chair Ralph Green (Davis, USA).
9:15 - 9:45		Homocysteine: from disease marker to disease prevention. David Smith (Oxford, UK).
9:45 - 10:05		Markers of vitamin B12 status in relation to CSF biomarkers and cognitive performance. Babak Hooshmand (Solna, Sweden).

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10:05 - 10:20		Choline Supplementation Does Not Promote Atherosclerosis in CETP-expressing Male Apolipoprotein E Knockout Mice. Heidi Collins (Plymouth Meeting, USA).
10:20 - 10:35		SIRT1 activation rescues the mislocalization of RNA-binding proteins and the cognitive defects induced by impaired cobalamin metabolism. David Coehlo (Nancy, France).
10:35 - 10:50		Micronutrients, anaemia and cognitive function: Findings from the TUDA Study. Eamon Laird (Dublin, Ireland).
10:50 - 11:15		Refreshment break
		Hemicycle theatre
11:15 – 12:15		Plenary session 10 Summary and closing remarks
		Chair / co-chair Postdocs TBA
11:15 - 11:25		Summary parallel session 1
11:25 - 11:35		Summary parallel session 2
11:35 - 11:45		Summary parallel session 3
11:45 - 11:55		Summary parallel session 4
11:55 - 12:15		Next conference, prize giving & farewell
12:15-13:45		Lunch
13:45 -14:15		Business meeting

*This is the prefinal draft of the programme, subject to minor modifications