



WORLD OF
MICROBIOME

PREGNANCY, BIRTH
& INFANCY

31 October - 2 November 2019
Milan, Italy

PROGRAMME
BOOK

WELCOME

Dear Colleagues,

It is our pleasure to welcome you to the First International Conference World of Microbiome: Pregnancy, Birth and Infancy in Milan, Italy!

Changing microbiota in pregnancy has profound effects on fetal, neonatal and infant health & development as well as on maternal health. Be a part of new breakthroughs which will better predict and treat diseases in fetuses and infants. Join international colleagues at the first conference that brings together professionals across microbiology, immunology, ob-gyn, neonatology, pediatrics and industry, to push forward this emerging area in microbiome.

This event is a unique meeting that brings together experts to advance scientific knowledge about microbiome in pregnancy and neonatal, interpret recent research and analyze real-world case-studies. The inaugural conference aims to promote collaboration between researchers, clinicians and industry and help them overcome barriers that limit access to prevention, care and services. Whether you are a scientist, clinical researcher, part of a start-up or an established industry company, WoMPBI 2019 is your opportunity to network and discuss the latest findings and their potential impact with the pioneers.

The Scientific Committee,



Prof. Erika Isolauri

Professor of Pediatrics, Head of the Department of Clinical Medicine, Faculty of Medicine
University of Turku
Finland



Dr. Omry Koren

Assistant Professor, Azrieli Faculty of Medicine
Bar-Ilan University
Israel



Dr. Samuli Rautava

Neonatologist, Adjunct Professor of Experimental Pediatrics and Clinical Instructor in Pediatrics
Turku University
Finland



Dr. Sorina Grisaru Granovsky

Director of High-Risk Pregnancy Unit
Shaare Zedek Medical Center
Israel



Prof. Enrico Ferrazzi

Professor of Obstetrics and Gynecology, Chair at IRCCS Fondazione Ca Granda, Polyclinic University of Milan
Italy

THE 1st INTERNATIONAL CONFERENCE ON MICROBIOME AND ITS IMPACT ON MATERNAL, FETAL AND EARLY INFANCY HEALTH



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- 029 **LOSS OF NPAS2 LIVER EXPRESSION DURING FETAL & NEONATAL DEVELOPMENT ALTERS THE GUT MICROBIOME AT LIGHT/DARK TIMEPOINTS IN MICE**
M. Jochum, D. Oneil, C. Shope, L. Showalter, M. Hu, D. Goodspeed, P. Gonzalez, K. Aagaard (USA)
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- 030 **THE EFFECTS OF PECTIN ON THE GROWTH AND ANTIOXIDANT PROPERTIES OF BACTERIA ISOLATED FROM INFANT'S GASTROINTESTINAL MICROBIOME - IN VITRO STUDY**
N. Lugonja, J. Avdalovic, D. Stankovic, S. Miletic, S. Spasic, A. Nikolic, V. Beskoski (Serbia)
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- 031 **VERTICAL MICROBIOME TRANSMISSION FROM MATERNAL BREAST MILK TO THE INFANT GUT BY COMBINED CULTIVATION AND METAGENOMIC APPROACHES**
S. Manara (Italy), M. Selma-Royo, C. Alcantara (Spain), F. Asnicar, E. Pasolli, F. Armanini, P. Ferretti (Italy), M.C. Collado (Spain), N. Segata (Italy)
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- 032 **CHANGES IN EARLY INTESTINAL MICROBIOTA INDUCED BY TRANSFERS OF VAGINAL, MILK-ASSOCIATED AND FECAL MICROBIOTA FROM PREGNANT MOTHERS DO NOT PROGRAM INTESTINAL MICROBIOTA IN ADULT RATS**
C. Michel, A.L. Pocheron, H. Billard, G. Le Dréan, P. Parnet (France)
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- 033 **NUTRITION MAY MODULATE MICROBIOMA OF PRETERM NEONATES**
S. Miletic, J. Avdalovic, N. Lugonja, J. Milic, A. Nikolic Kokic, S. Spasic (Serbia)
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- 034 **IMPACT OF MEDICATION, NUTRITION AND PROBIOTICS IN THE FIRST THREE WEEKS OF LIVE: COMPARISON OF PRETERM INFANTS' GUT MICROBIOMES IN THREE NEONATAL INTENSIVE CARE UNITS**
C. Neumann, C. Moissl-Eichinger, S. Kurath-Koller, B. Resch, B. Urlesberger, A. Trobisch, I. Klymiuk (Austria)
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- 035 **MATERNAL GUT AND BREAST MILK MICROBIOTA AFFECT INFANT GUT ANTIBIOTIC RESISTOME AND MOBILE GENETIC ELEMENTS**
K. Pärnänen, A. Karkman, J. Hultman, C. Lyra, E. Isolauri, S. Rautava, S. Salminen, H. Kumar (Finland), J. Bengtsson-Palme (Sweden), R. Satokari (Finland), D.G.J. Larsson (Sweden), V. Marko (Finland)
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- 036 **MATERNAL PRE-PREGNANCY BODY MASS INDEX (BMI) IS NOT ASSOCIATED WITH DIFFERENCES IN INFANT GUT MICROBIOTA DIVERSITY AT APPROXIMATELY ONE MONTH POSTPARTUM**
N. C. Freitas-Costa, L. Princisval, A.C. Souza-Coelho, M. Batalha, A.L. Ferreira, C. Benaim, A. C. Cunha Figueiredo (Brazil), B. L. Williams, M. Couto-Rodriguez, C. Guo, M. Knoop (USA), G. Kac (Brazil)
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- 037 **FISH OIL SUPPLEMENTATION REDUCES MATERNAL DEFENSIVE INFLAMMATION AND A GUT MICROBIOME THAT PREDICTS REDUCED IMMUNE PRIMING IN INFANTS**
C. Quin, D.M. Vollman, S. Ghosh, N. Haskey, M. Estaki, J. Pither, J.A. Barnett, J.N. Michael, B.W. Birnie, D.L. Gibson (Canada)
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WORLD OF MICROBIOME: PREGNANCY, BIRTH & INFANCY CONFERENCE 2019

31 OCTOBER – 02 NOVEMBER 2019, MILAN, ITALY

ACCEPTED ABSTRACTS

003 - The Neonatal Period

THE EFFECTS OF PECTIN ON THE GROWTH AND ANTIOXIDANT PROPERTIES OF BACTERIA ISOLATED FROM INFANT'S GASTROINTESTINAL MICROBIOME - IN VITRO STUDY

N. Lugonja¹, J. Avdalovic¹, D. Stankovic², S. Miletic¹, S. Spasic¹, A. Nikolic³, V. Beskoski⁴

¹Institute of Chemistry- Technology and Metallurgy- University of Belgrade- Serbia, Department of Chemistry, Belgrade, Serbia

²Vinca Institute, University of Belgrade, Belgrade, Serbia

³Institute of molecular genetics and genetic engineering- Serbia, University of Belgrade-, Belgrade, Serbia

⁴Faculty of Chemistry- University of Belgrade- Serbia, Department of Biochemistry, Belgrade, Serbia

Gut microbiota is composed of microorganisms located in the intestine, and plays important role in whole body homeostasis. Pectin is a prebiotic dietary fiber, mainly from apples and citruses, which affects the gut microbiota showing local intestinal and systemic effects. However, the prebiotic significance is poorly understood in regard to their fermentation profiles and redox milieu for health effects.

The aim of this research is to investigate significance of apple pectin in infant nutrition, their impact on selected bacteria of infant's gastrointestinal microbiome and total antioxidant capacity by electrochemical determination of changes in redox potential.

To investigate the *in vitro* fermentation of pectin by the infant stool microbiota, we anaerobically incubated the selected bifidobacteria and lactobacilli, isolated from infant's feces collected from term vaginally delivered infants, at 3 day of life, with 0.5 % pectin. The compositions of the stool microbiota samples were observed before and after 72 h of incubation time using DGGE. The changes in redox capacity of media before and after fermentation were electrochemically determined by cyclic voltammetry and differential pulse voltammetry.

Pectin has positive effect on the growth of *Bifidobacterium* and *Lactobacillus*, of infant's gastrointestinal microbiome. *In vitro* fermentation of pectin by probiotic bacteria selected from infant's stool showed a bifidogenic effect, decrease in pH and an increase in redox capacity of media. *In vitro* electrochemical antioxidant test can quickly determine the changes during fermentation of pectin and can be used to monitor biochemical effects of fermentation, and as a growth indicator of selected species.



Poster Presentation Certificate

This is to certify that

Nikoleta Lugonja

presented an abstract titled

**THE EFFECTS OF PECTIN ON THE GROWTH AND ANTIOXIDANT
PROPERTIES OF BACTERIA ISOLATED FROM INFANT'S
GASTROINTESTINAL MICROBIOME - IN VITRO STUDY**

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¹Institute of Chemistry- Technology and Metallurgy- University of Belgrade-
Serbia, Department of Chemistry, Belgrade, Serbia;²Vinca Institute, University of
Belgrade, Belgrade, Serbia;³Institute of molecular genetics and genetic
engineering- Serbia, University of Belgrade-, Belgrade, Serbia;⁴Faculty of
Chemistry- University of Belgrade- Serbia, Department of Biochemistry, Belgrade,
Serbia.

