Serbian Biochemical Society Thirteenth Conference

"Amplifying Biochemistry Concepts"

Proceedings

Serbian Biochemical Society

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Serbian Biochemical Society
Thirteenth Conference

International Scientific Meeting

September 19-20, 2024, Kragujevac, Serbia

“Amplifying Biochemistry Concepts”

PROGRAMME

Day 1 – Thursday, September 19th, 2024

08:30 – 10:00 **Participants registration and posters mounting**

10:00 – 10:15 Opening ceremony

10:15 – 11:00 PL1 **Béla Gyurcsik**
University of Szeged, Department of Molecular and Analytical Chemistry, Szeged, Hungary
Environmental effects on enzyme efficiency involved in bacterial defence systems
Plenary/FEBS3+ Lecture

11:00 – 11:30 IL1 **Jelica Milošević**
University of Belgrade - Faculty of Chemistry, Belgrade, Serbia
Peptide inhibitors of amyloid aggregation
Invited lecture

11:30 – 12:15 ***Coffee Break***

12:15 – 12:45 IL2 **Ana Obradović**
University of Kragujevac Faculty of Science, Department of Biolog and Ecology, Kragujevac, Serbia
Hydantoin derivatives: Harnessing antitumor potential and immunomodulation
Invited lecture

12:45 – 13:15 IL3 **Suzana Stanisavljević**
Institute for Biological Research "Siniša Stanković", University of Belgrade, Belgrade, Serbia
Transcription factor NRF2 as a key modulator of immune response
Invited lecture

13:15 – 13:30 OP1 **Maja Krstić Ristivojević**
University of Belgrade - Faculty of Chemistry, Department of Biochemistry, Centre of Excellence for Molecular Food Sciences, Belgrade, Serbia
Interaction of beef meat extract proteins and microplastics in simulated gastrointestinal conditions
Oral presentation

13:30 – 15:00 ***Poster Session 1 and 2 & Lunch break***

15:00 – 15:30 IL4 **Nikola Stojanović**
University of Niš, Faculty of Medicine, Niš, Serbia
Neuroinflammation in schizophrenia and other psychotic disorders
Invited lecture

15:30 – 15:45 OP2 **Milica Markelić**
University of Belgrade - Faculty of Biology, Belgrade, Serbia
Protective effects of H_2S donors against injury of endocrine pancreas in diabetic mice include antiferroptotic action
Oral presentation

15:45 – 16:00 OP3 **Olgica Stefanović**
University of Kragujevac Faculty of Science, Department of Biolog and Ecology, Kragujevac, Serbia
Plant-derived metabolites affect different stages of biofilm formation of pathogenic bacteria
Oral presentation

16:00 – 16:15 OP4 **Nemanja Živanović**
University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Novi Sad, Serbia
Rose oil distillation wastewater as a new source of pharmacologically active compounds
Oral presentation

19:00 – 24:00 ***Conference dinner***

Day 2 – Friday, September 20th, 2024

08:30 – 10:00 **Participants registration and posters mounting**

10:00 – 10:45 PL2 **Manfred Jung**
University of Freiburg, Faculty of Chemistry and Pharmacy, Institute of Pharmaceutical Sciences, Freiburg, Germany
Chemical epigenetics - modulators of reversible lysine acetylation and methylation
Plenary Lecture

10:45 – 11:15 IL5 **Jelena Munjas**
University of Belgrade, Faculty of Pharmacy, Department of Medical Biochemistry, Belgrade, Serbia
Gene expression of lipid transporters in peripheral blood mononuclear cells in pregnant women: A longitudinal study
Invited lecture

11:15 – 12:00 ***Coffee Break***

12:00 – 12:30 IL6 **Dragana Robajac**
University of Belgrade - Institute for the Application of Nuclear Energy, Belgrade, Serbia
Glycans in health and disease
Invited lecture

12:30 – 13:00 IL7 **Marija Lesjak**
University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Novi Sad, Serbia
The influence of plant-based food on the bioavailability of iron
Invited lecture

13:00 – 13:15 OP5 **Edhem Hasković**
University of Sarajevo, Faculty of Sciences, Department of Biology, Sarajevo, Bosnia and Herzegovina
Effect of trioxohydroxytetrafluorotriborate on haematological parameters *in vivo*
Oral presentation

13:15 – 14:45 ***Poster Session 3 and 4 & Lunch break***

14:45 – 15:15 IL8 **Marko Stojanović**
University of Belgrade, Faculty of Medicine, Department of Pharmacology, Belgrade, Serbia
Unlocking the potential: Harnessing biomarkers commonly used in clinical practice to predict complications and outcomes in febrile neutropenia
Invited lecture

15:15 – 15:30 OP6 **Darko Mihaljica**
University of Belgrade, Institute for Medical Research, National Institute of Republic of Serbia, Belgrade, Serbia
Preliminary characterization of putative tick cement protein PA107 – implications for possible applications in biomedicine
Oral presentation

15:30 – 15:45 OP7 **Nenad M. Zlatić**
University of Kragujevac, Faculty of Science, Department of Biolog and Ecology, Kragujevac, Serbia
Secondary metabolites and biological activity of *Teucrium montanum* L. (Lamiaceae)
Oral presentation

16:00 – 16:15 ***Poster and oral presentation awards and closing ceremony***

P115 Ivana Beara
Bermet wine polyphenolics as modulators of lipase activity *in vitro*

P216 Ivana Ivelja
Hepatotoxic effects of perfluorooctanoic acid on female Swiss mice

Poster Session 2

P201 Jelena Purać
Molecular insights into aging in honey bees: RNA-Seq analysis of winter worker bees across different age groups

P202 Jelena Radović
Investigation of the effect of algal chromopeptides on the activity of the SARS-CoV-2 main protease Mpro

P203 Jelena Spremo
Evaluation of vitellogenin content in worker honey bees (*Apis mellifera* L.) during ageing

P204 Jovana Jagodić
Exploring trace elements in adrenal tissues: New insights into Cushing's syndrome

P205 Jovana Matić
Interactions of 2-thiohydantoin derivatives with DNA and human serum albumin as a part of their cytotoxic activity against human breast adenocarcinoma

P206 Jovana Stevanović
Diagnostic significance of miR-146a, miR-21 and miR-155 from PBMCs in gestational diabetes

P217 Ljiljana Milovanović
Bioactivity profiling of wine from Vojvodina: Antioxidant potential of Bermet wine

P208 Marija Marin
Potential biological activity of the aqueous extract of *Fumana bonapartei* Maire et Petitm. from the serpentine substrate of the Rogozna mountain

P209 Marija Novaković
Antioxidative potential of *Quercus pericarp*

P210 Marija Opačić
Long-term low-level exposure to perfluorooctanoic acid affects the survival of human endothelial cells in vitro

P211 Marija Paunović
Impact of aromatase inhibitor therapy on plasma phospholipid profiles in women with breast cancer

P212 Marija Stanišić
Immobilization of chemically modified glucose-oxidase by biomineralization in ZIF-8

Diagnostic significance of miR-146a, miR-21 and miR-155 from PBMCs in gestational diabetes

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MicroRNA-based mechanisms are heavily dysregulated in disorders of glucose metabolism, including gestational diabetes (GDM) and its common successor, type 2 diabetes mellitus. Since oxidative stress (OS) and the interconnected low-level inflammation (IFM) accompany GDM and the associated pregnancy complications, we selected known OS/IFM-related microRNAs as candidates for a study on biomarker properties in GDM. The aim of the conducted research was to evaluate the diagnostic and prognostic significance of miR-146a-5p, miR-155-5p and miR-21-5p from peripheral blood mononuclear cells (PBMCs), as well as their potential as indicators of glucose and lipid status in the second/early third pregnancy trimester. PBMCs were extracted from peripheral blood samples obtained from 45 women diagnosed with GDM and 45 healthy normoglycaemic pregnant controls (pregnancy weeks 24-30). Relative quantification of mir-146a-5p, miR-155 and miR-21-5p was conducted by quantitative real-time PCR after a reverse transcription step that utilized stem-loop primers. A significant increase in the level of expression of miR-146a-5p and miR-21-5p was observed in GDM patients, compared to normoglycaemic controls ($p=0.009$ and $p=0.003$, respectively). Expression of both miR-155-5p and miR-21-5p demonstrated positive correlation with the values of anthropometric characteristics of the newborn of GDM patients, while for miR-146a an opposite direction of correlation was found in controls. However, the expression of these microRNAs did not associate with the later pregnancy or neonatal complications. MiR-146a-5p further proved indicative of the insulin resistance and iron status in GDM patients. The presented results illustrate the potential of OS/IFM-related microRNAs from PBMCs to serve as novel biomarkers in GDM.

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