

# Serbian Biochemical Society

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## Proceedings

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Serbian Biochemical Society

Tenth Conference

with international participation

24.09.2021. Kragujevac, Serbia

***“Biochemical Insights into Molecular Mechanisms”***

# PROGRAMME

- 10:00-10:15      Opening ceremony
- 10:15-10:50      Samo Kreft  
Faculty of Pharmacy, University of Ljubljana, Slovenia  
**Phytochemical, pharmacological and clinical investigations of the extract from the branches of *Abies alba***  
(FEBS3+ Lecture)
- 10:50-11:10      Dragica Selaković  
Faculty of Medical Sciences, University of Kragujevac  
**Molecular mechanisms of platinum-based chemotherapeutics-induced behavioral manifestations of neurotoxicity – a beneficial role of antioxidant supplementation**
- 11:10-11:30      Simeon Minić  
University of Belgrade - Faculty of Chemistry  
**Bioactive properties of Spirulina-derived phycobiliproteins and phycobilins**
- 11:30-12:00      Coffee break
- 12:00-12:20      Nikola Gligorijević  
Institute for Application of Nuclear Energy, University of Belgrade  
**Ligand binding to fibrinogen influences its structure and function**
- 12:20-12:40      Ivan Čapo  
Faculty of Medicine, University of Novi Sad  
**New aspects of vitamin C during prenatal period of development**

- 12:40-13:00 Milan Dragičević  
Institute for Biological Research "Siniša Stanković", University of Belgrade  
**Arabinogalactan protein mining and diversity - the case of *Centaurium erythraea***
- 13.00-14.00 **Poster session**
- 14.00-15.00 Cocktail / Lunch break
- 15:00-15:20 Miloš Prokopijević  
University of Belgrade - Institute for Multidisciplinary Research  
**Natural polymers: suitable carriers for enzyme immobilization**
- 15:20-15:40 Ana Ninić  
University of Belgrade - Faculty of Pharmacy  
**Link between resistin, low-grade systemic inflammation and obstructive sleep apnea**
- 15:40-16:00 Branka Đorđević  
Faculty of Medicine, University of Niš  
**Blood-retinal barrier breakdown in diabetic retinopathy – the protective role of melatonin**
- 16:00-16:30 Coffee break
- 16:30-17:00 Poster awards and closing ceremony

## Poster Session

Tamara Antonić

Faculty of Pharmacy, University of Belgrade

**Prognostic capability of uric acid on the development of hypertensive complications during pregnancy**

Miloš Avramov

Faculty of Sciences, University of Novi Sad

**Protein disorder determination and expression of hsp genes during diapause and cold acclimation in the European corn borer *Ostrinia nubilalis* (Hbn.)**

Dejana Bajić

Faculty of Medicine, University of Novi Sad

**Levothyroxine: biochemical aspects and consumption in Serbia**

Ana Marija Balaž

Institute of Chemistry, Technology and Metallurgy, University of Belgrade

**Horseradish peroxidase C1A wild type gene and its variants expressed in *Pichia pastoris* KM71H strain**

Vedrana Bazović

Faculty of Chemistry, University of Belgrade

**Screening of potential inhibitors of recombinant S-adenosyl-L-homocysteine hydrolase from banana**

Sofija Bekić

Faculty of Sciences, University of Novi Sad

**Heterologous expression, purification and enzymatic activity of aldo-keto reductase 1D1**

Stefan Blagojević

Faculty of Science, University of Kragujevac,

**Impact of gold(III) and ruthenium(II) complexes on miRNA expression involved in metastasis on primary ovarian cell culture isolated from ascites**

Dragica Bulajić

Faculty of Medicine, University of Novi Sad

**Cytotoxicity of pulp-capping materials NeoMTA Plus, ProRoot MTA, and Biodentine on human deciduous dental pulp stem cells**

Sunčica Buljević

Faculty of Medicine, University of Rijeka

**The impact of CD26 deficiency on peptide YY and substance P expression patterns in Crohn's disease**

Marina Crnković

Faculty of Agriculture, University of Novi Sad

**Effect of soil liming on phenolic compounds in soybean**

Jelena Danilović Luković

University of Belgrade - Institute for Multidisciplinary Research

**The effect of increased nickel concentrations on *Chlorella sorokiniana* culture**

Srdana Đorđević

Faculty of Sciences, University of Novi Sad

**The effect of spermidine on the malondialdehyde levels in honey bees (*Apis mellifera* L.)**

Nevena Đukić

Faculty of Science, University of Kragujevac

**Accumulation of malondialdehyde in different varieties of *Triticum aestivum* L. under conditions of heat stress**

Jovana Drljača

Faculty of Medicine, University of Novi Sad

**Glioblastoma-associated microglia as a new target and strategy to fight with**

Yaraslau U. Dzichenka

Institute of Bioorganic Chemistry of National Academy of Sciences, Minsk

**Modified steroids as modulators of cholesterol level in humans by acting on CYP7A1 and CYP7B1**

Sonja Filipović

Faculty of Sciences and Mathematics, University of Niš

**The unanticipated monoterpene quantities variation in the Montenegro *J. oxycedrus* essential oil specimens**

Sonja Filipović

Faculty of Sciences and Mathematics, University of Niš

**The first antifungal activity assessment of *M. juliana* essential oil against crop pathogen *Colletotrichum acutatum* J.H. Simmonds**

Azra Guzonjić

Faculty of Pharmacy, University of Belgrade

**Relative telomere length and oxidative stress in patients with idiopathic pulmonary fibrosis, mesothelioma and non-small cell lung cancer**

Jasmina Ivanišević

Faculty of Pharmacy, University of Belgrade

**Redox status in patients with obstructive sleep apnea**

Anđelka M. Isaković

Institute of Medical and Clinical Biochemistry, Faculty of Medicine, University of Belgrade

**ADAM10, CEA, and CA19-9 as triad biomarkers of colorectal cancer response to neoadjuvant chemoradiotherapy**

Jovana D. Jagodić

Faculty of Chemistry, University of Belgrade

**Elemental composition of healthy adrenals and adrenal adenomas: whole blood and solid tissue analysis**

Natalija Jonić

Institute for Biological Research "Siniša Stanković, University of Belgrade

**Promoting the pro-inflammatory phenotype in macrophages by blocking the aryl hydrocarbon receptor**

Jelena S. Katanić Stanković

Institute for Information Technologies Kragujevac, University of Kragujevac

**Meadowsweet extract-mediated green synthesis of silver nanoparticles: A promising bioactive tool**

Teodora Knežić

Biosense Institute, University of Novi Sad

**Expression of *cs*, *ast*, *alt* and *ldh* genes during diapause of the European corn borer *Ostrinia nubilalis* (Hbn.)**

Milica Kojadinović

Institute for Medical Research, University of Belgrade

**The supplementation with fish and evening primrose oils improves fatty acid status in breast cancer patients receiving aromatase inhibitors**

Jelena Korać Jačić

University of Belgrade - Institute for Multidisciplinary Research

**The impact of pH on coordination chemistry of tetracycline and Fe(III) in water**

Lela Korićanac

Vinča Institute of Nuclear Sciences, University of Belgrade

**Antitumor effect of Ru(II) complexon A375 and HeLa cell growth, migration and adhesion ability**

Ana Kostić

Institute for Biological Research "Siniša Stanković", University of Belgrade

**Sclareol, a natural compound, inhibits P-glycoprotein activity in cancer cells**

Iva Lakić

Faculty of Biology, University of Belgrade

**Rat brown adipose tissue thermogenic markers are modulated by estrus cycle phases and short term fasting**

Milica Lazarević

Institute for Biological Research „Siniša Stanković“, University of Belgrade

**The effect of novel rosmarinic acid derivative on the pathogenesis of experimental autoimmune encephalomyelitis in rats**



Ivana Lukić

Institute of Virology, Vaccines and Sera – Torlak, Belgrade

***Lactobacillus reuteri* alleviate the severity of chemically-induced colitis in mice**

Jovan Luković

Faculty of Medical Sciences, University of Kragujevac

**Cytotoxic effect of chalcone analogue on tumor cells of murine and human origin**

Tatjana Majkić

Faculty of Sciences, University of Novi Sad

**Hypoglycemic effect of Cabernet Sauvignon wine**

Aleksandra Margetić

University of Belgrade – Institute of Chemistry, Technology and Metallurgy

**Antibacterial activity of polypyridinearene ruthenium(II) complexes**

Marija Marin

Faculty of Biology, University of Belgrade

**Effect of the *Thymus lykae* Degen et Jav. methanol extract on the erythrocyte membrane**

Stefan Marković

Faculty of Science, University of Kragujevac

**Heat-induced accumulation of proline and yield components in different cereal varieties**

Miloš Matić

Faculty of Science, University of Kragujevac

**Effects of cadmium on oxidative metabolism and motility of human placental cells in chemically-induced hypoxia**

Nenad Mićanović

Faculty of Agriculture, University of Belgrade

**Antioxidant and antidiabetic potential of hawthorn (*Crataegus mognogyna* Jacq. L.) fruits originating from Serbia**

Tijana Mićović

Institute for Medicines and Medical Devices of Montenegro, Podgorica

**Promising anti-inflammatory potential of methanol extracts of *Hyssopus officinalis* L. subsp. *aristatus* (Godr.) Nyman (*Lamiaceae*)**

Vladimir Mihailović

Faculty of Science, University of Kragujevac

**Selected medicinal plant extracts as a potential preservative in cosmetic products**

Marija Mihajlović

Faculty of Pharmacy, University of Belgrade

**Relationship between single nucleotide polymorphism  $TNF-\alpha$  -308 G>A (rs1800629) and *TNF-\alpha* gene expression levels in colorectal cancer patients**

Nemanja Mijin

Faculty of Chemistry, University of Belgrade

**Amyloid fibril formation of ovalbumin in the presence of heavy metal ions, lead and cadmium**

Marijana Milanović

Medical Faculty of the Military Medical Academy, University of Defense, Belgrade

**Exogenous alpha-ketoglutarate impair differentiation and maturation of human dendritic cells**

Sonja Milić Komić

Institute for Multidisciplinary Research, University of Belgrade

**Efficient production of highly purified Late Embryogenesis Abundant (LEA) protein from *Arabidopsis thaliana* by recombinant DNA technology**

Milorad Miljić

Faculty of Sciences, University of Novi Sad

**The profile of carotenoids and phenolic compounds in 20 different varieties of pumpkin pulp cultivated in Serbia**

Sara Milojević

Faculty of Science, University of Kragujevac

**Evaluation of pathophysiological effects of clinical concentrations of proinflammatory interleukin-6 detected in patients with COVID-19 on homeostasis of human trophoblast cells**

Jelica Milošević

Faculty of Chemistry, University of Belgrade

**Bioinformatic analysis of ovalbumin and HEWL amyloidogenic peptides**

Maja Milošević

Faculty of Technology, University of Novi Sad

**Use of acid-extracted fiber from butternut squash pulp for complex coacervate preparation**

Marija Milošević

Faculty of Science, University of Kragujevac

**Testicular toxicity induced by chlorpyrifos and imidacloprid: Comparative study**

Tamara Milošević

Clinical Hospital Center „Zvezdara“, Belgrade

**High lactate dehydrogenase activity is significant mortality predictor in a 6 months study on end stage renal disease patients**

Milan Mišić

Faculty of Chemistry, University of Belgrade

**Antioxidant potential and protein interactions of four tea plant extracts**

Maja Mladenović

University of Belgrade – Faculty of Chemistry

**Optimization of expression, purification and HRMS characterization of recombinant N-protein fragment from SARS-CoV-2**

Jovana Muškinja

Institute for Information Technologies, University of Kragujevac

**Synthesis of ferrocenyl-based pyrazoline derivatives and their biological evaluation**

Aleksandra Nikezić

Faculty of Science, University of Kragujevac

**Anticancer potential of *Alchemilla vulgaris* L. on triple negative breast cancer cell lines**

Ivana Nikolić

Faculty of Medical Sciences, University of Kragujevac

**Biological effects of vanillin derivatives (enones) on HeLa cells in vitro**

Ana Obradović

Faculty of Science, University of Kragujevac

**Molecular mechanisms of antitumor activity 3-(4-chlorobenzyl)-5-isopropyl-5-phenylhydantoin in human breast cancer MDA-MB-231 cells**

Miloš Opačić

Institute for Multidisciplinary Research, University of Belgrade

**Distribution of high-affinity copper transporter CTR1 in sclerotic hippocampi of mTLE patients**

Dejan Orčić

Faculty of Science, University of Novi Sad

**A novel HPLC-DAD method for quantification of dominant lignans in cow parsley (*Anthriscus sylvestris* (L.) Hofm.)**

Ana Pantelić

Faculty of Chemistry, University of Belgrade

**Characterization of the late embryogenesis abundant (LEA) proteins family in hydrated and desiccated *Ramonda serbica* Panc. leaves**

Jelena Pantović

Faculty of Chemistry, University of Belgrade

**Expression, purification and characterization of recombinant L-phenylalanine dehydrogenase**

Milica G. Paunović

Faculty of Science, University of Kragujevac

**Estimation of redox potential of novel Pt(IV) complexes in the blood of rats**

Kasja Pavlović

Clinic for Endocrinology, Diabetes and Metabolic Diseases, University Clinical Center of Serbia

**Response of muscle cells to metformin depends on glucose availability in cell culture medium**

Marija Pavlović

Vinča Institute of Nuclear Sciences, University of Belgrade

**Highly active pectinases from newly isolated *Aspergillus tubingensis* strain**

Milica Pavlović

Faculty of Science, University of Kragujevac

**Bioaccumulation coefficient as an indicator of the ability to accumulate heavy metals of plant species on tailings**

Milica Perović

Faculty of Technology, University of Novi Sad

**Preparation and characterization of protein nanoparticles from chickpea protein isolates**

Nevena Planojević

Faculty of Science, University of Kragujevac

**The influence of newly synthesized Au(III) and Ru(II) complexes on gene expression on primary ovarian cancer cell culture from ascites**

Lena Platanić Arizanović

University of Belgrade - Faculty of Chemistry

**Atypical antipsychotics clozapine, sertindole, ziprasidone, and erythrocytes: Friends or foes?**

Dušica J. Popović

Faculty of Medicine, University of Novi Sad

**Inhibition of tumor vasculature production by metformin treatment of cancer inoculated to hamsters**

Kosta J. Popović

Faculty of Medicine, University of Novi Sad

**Nitroglycerin reduces no production in hamster fibrosarcomas**

Aleksandra Popović

Faculty of Medicine, University of Novi Sad

**The effects of Karnozin EXTRA® on mitochondrial bioenergetics in healthy fibroblasts**

Iva Potočnjak

Faculty of Medicine, University of Rijeka

**Oleanolic acid induces mitophagy and chemosensitises human colon carcinoma cells**

Tanja Radisavljević

Faculty of Science, University of Novi Sad

**Chemical characterization and antioxidant capacity of decaffeinated coffee extracts**

Milena Rašeta

Faculty of Sciences, University of Novi Sad

**Phenolic profile and biological activity of fungal species *Volvopluteus gloiocephalus* (DC.) Vizzini, Contu & Justo 2011**

Marina Ristović

Institute of Chemistry, Technology and Metallurgy, University of Belgrade

**Diffusion screening method for estimation potential fungal producers of xylanase responsible for xylooligosaccharides production**

Dragana Robajac

Institute for the Application of Nuclear Energy, University of Belgrade

**Changes in serum glycans in pregnant women with gestational diabetes mellitus**

Milena Simić

Faculty of Pharmacy, University of Belgrade

**Activity and phenotype of paraoxonase 1 enzyme in pediatric patients on hemodialysis**

Miron Sopić

Faculty of Pharmacy, University of Belgrade

**Short telomeres in peripheral blood leukocytes are associated with the presence and the severity of lung cancer**

Nikola Z. Srećković

Faculty of Science, University of Kragujevac

**Green synthesis, characterization, and biological evaluation of silver nanoparticles synthesized using *Salvia pratensis* L. extracts**

Ana Stančić

Institute for Biological Research "Siniša Stanković", University of Belgrade

**Ferroptosis as a novel determinant of  $\beta$ -cell death in diabetic conditions**

Marija Stanišić

Faculty of Chemistry, University of Belgrade

**Biomimetic mineralisation of periodate oxidized glucose oxidase**

Marijana Stanojević Pirković

Faculty of Medical Sciences, University of Kragujevac

**Cytotoxicity of enone sodium salts on human colon cancer cells (HCT-116) *in vitro***

Aleksandra Stefanović

Institute for Oncology and Radology of Serbia, Beograd

**Methylenetetrahydrofolate reductase C677T and A1298C polymorphic variants in rectal cancer: significance for cancer risk and response to chemoradiotherapy**

Olgica Stefanović

Faculty of Science, University of Kragujevac

**Phenolic compounds content and antibacterial activity of selected medicinal plants growing in Serbia**

Olgica Stefanović

Faculty of Science, University of Kragujevac

**Antibacterial and cytotoxic activity of *Tanacetum macrophyllum* extracts**

Branko Subošić

University Children's Hospital, Belgrade

**Childhood obesity: metabolic disorder and liver function**

Emilija Svirčev

Faculty of Sciences, University of Novi Sad

**Identification of compounds with antioxidative properties in alpine bistort (*Bistorta vivipara* (L.) Delarbre) ethanol extracts**

Biljana Šmit

Institute for Information Technologies Kragujevac, University of Kragujevac

**Synthesis and antimelanogenic activity of N3-arylidene-2-thiohydantoin derivatives**

Marinela Šokarda Slavić

Faculty of Chemistry, University of Belgrade

**Production of polyglutamic acid by *Bacillus* sp: strains selection, optimization, batch fermentation and characterization**

Marinela Šokarda Slavić

Faculty of Chemistry, University of Belgrade

**A search for nature's robust proteases with zein as a substrate**

Filip Štrbac

Faculty of Agriculture, University of Novi Sad

**Chemical composition of thyme essential oil and its anthelmintic properties**

Jovana Šučur

Faculty of Agriculture, University of Novi Sad

**Allelopathic effect of ragweed (*Ambrosia trifida* L.) on soybean phenolic compounds**

Miloš Šunderić

Institute for the Application of Nuclear Energy, University of Belgrade

**Interaction between alpha-2-macroglobulin and phycocyanobilin – structural and physiological implications**



Marija Takić

Institute for Medical Research, University of Belgrade

**Associations between zinc intake and status with biochemical and antropometric parameters in hemodialysis patients**

Nada Tokodi

Faculty of Sciences, University of Novi Sad

**Biochemical, molecular and histological insight into cyanobacterial effects on *Cyprinus carpio* from Kis-Balaton, Hungary**

Jovana Tubić Vukajlović

Faculty of Science, University of Kragujevac

**The effect of acetone extract of *Lenzites betulinus* mushroom on peripheral blood lymphocytes genome in patients with acute coronary syndrome *in vitro***

Mirela Ukropina

Faculty of Biology, University of Belgrade

**Possible protective role of probiotic bacteria on intestinal epithelium after chronic CdCl<sub>2</sub> intake**

Iva Uzelac

Faculty of Sciences, University of Novi Sad

**Expression of heat shock protein genes in response to unusually high temperatures during winter diapause in the European corn borer *Ostrinia nubilalis* (Hbn.)**

Snežana Vojvodić

Institute for Multidisciplinary Research, University of Belgrade

**Redox changes in microalga *Chlorella sorokiniana* exposed to high concentrations of Mn(II)**

Sanja Vujčić

University of Belgrade - Faculty of Pharmacy

**Triglyceride-glucose index and oxidative stress biomarkers in patients with type 2 diabetes mellitus**

Srđan Vujinović

Faculty of Sciences, University of Novi Sad

**Chemical composition and antioxidant activity of pomegranate (*Punica granatum* L.) peel and pulp**

Iva Vukelić

Faculty of Medicine, University of Rijeka

**Luteolin ameliorates experimental colitis in mice through ERK-mediated suppression of inflammation, apoptosis and autophagy**

Anđela Vukojević

University of Belgrade - Institute for Biological Research “Siniša Stanković”,

**Effects of fermented food on the body weight and behavior after repeated LPS administration in mice**

Irina Vulin

Faculty of Sciences, University of Novi Sad

**Effect of caffeine on cell proliferation and key elements of neurotransmitter pathways in human neuroblastoma SH-SY5Y cell line**

Milan Zarić

Faculty of Medical Sciences, University of Kragujevac

**Selective cytotoxicity of melittin against human cervical cancer cells**

Gordana Zavišić

Faculty of Pharmacy, University of Academy Business, Novi Sad

**Effect of probiotic consumption on serum glucose and lipid levels in mice**

Milica Zeković

Institute for Medical Research, University of Belgrade

**Omega-3 index and anthropometric indices among testicular cancer survivors**

Milena Zlatanova

Faculty of Chemistry, University of Belgrade

**Small molecules attenuate activation of the NF- $\kappa$ B signaling in epithelial cells by Act d 1 kiwifruit allergen**

Nenad Zlatić

Faculty of Science, University of Kragujevac

**Monoterpenes variability in *Teucrium montanum* L. essential oils**

Alma Zuković

Faculty of Pharmacy, University of Belgrade

**Biomarkers of oxidative stress in pediatric patients with type 1 diabetes mellitus**

Dragan Živančev

Institute of Field and Vegetable Crops, Novi Sad

**The use of the handheld grain quality analyzer for determination protein content in wheat cultivars**

Katarina Živić

Institute for Oncology and Radiology of Serbia, Belgrade

**Prevalence of somatic *BRCA1* gene methylation in patients with ovarian cancer**

Kristina Živić

Institute for Oncology and Radiology of Serbia, Belgrade

**Anti-migratory properties of Nischarin agonist rilmenidine in pancreatic ductal adenocarcinoma**

