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Serbian Biochemical Society
Twelfth Conference

International scientific meeting

September 21-23, 2023, Belgrade, Serbia

“Biochemistry in Biotechnology”

PROGRAMME

Day 1 – Thursday, September 21st

(Serbian Academy of Sciences and Arts: Ceremony Hall)

- 09:00–10:00 Participants registration
- 10:00–10:20 Opening ceremony
Welcome messages by Marija Gavrović Jankulović - SBS and
Vladimir Stevanović - SASA

Section 1

- 10:20–11:00 Mario Gabričević
Faculty of Pharmacy and Biochemistry, University of Zagreb, Croatia
**Protein-ligand interactions – Alpha-1-acid glycoprotein
(Orosomucoid) with drugs: Multitechnic approach**
Plenary / FEBS3+ lecture
- 11:00–11:30 Marija Stojadinović
University of Belgrade – Faculty of Chemistry
Macrophage polarization and infectious diseases
Invited lecture
- 11:30–12:00 Coffee Break

Section 2

- 12:00–12:30 Jelena Bašić
University of Niš, Faculty of Medicine
Apolipoprotein E and matrix remodeling – a link to neurodegeneration in Alzheimer’s disease
Invited lecture
- 12:30–13:00 Nevena Tomašević
University of Kragujevac, Faculty of Science
Histone deacetylase 4 (HDAC4), an epigenetic target for spinal muscular atrophy
Invited lecture
- 13:00–13:30 Jasmina Ivanišević
University of Belgrade – Faculty of Pharmacy
HDL-associated proteins in hypertensive disorders of pregnancy
Invited lecture
- 13:30–15:15 **Poster Session 1 & Lunch break**
(University of Belgrade – Faculty of Chemistry)

Section 3

- 15:30–16:00 Sophie Combet
Laboratoire Léon Brillouin, UMR12, CEA-CNRS, Université Paris-Saclay, France
Stability of food proteins at high pressure conditions
ANSO PRESSION Lecture

- 16:00–16:30 Annie Brûlet
Laboratoire Léon Brillouin, UMR12, CEA-CNRS, Université Paris-Saclay, France
Effect of structure on digestion of plant protein gels
ANSO PRESSION Lecture
- 16:30–17:00 Ali Assifaoui
PAM Unit, AgroSupDijon, University of Burgundy, France
Polysaccharide-based hydrogels: Structure and function
ANSO PRESSION Lecture
- 18:30–22:00 Social event 1 - guided tour and dinner

Day 2 – Friday, September 22nd

(University of Belgrade – Faculty of Chemistry: Ceremony Hall)

9:00–10:00 Participants registration and poster posting

Section 4

10:00–10:30 Zhao Minyan / Li Qian / Xu Shuwen
Alliance of International Science Organizations
Presentation of the ANSO program
ANSO PRESSION Lecture

10:30–10:45 Ana Vesković
University of Belgrade - Faculty of Physical Chemistry
EPR imaging of redox-responsive hydrogels
Oral presentation

10:45–11:00 Nikolina Sibiñčić
Innovative Centre ltd., University of Belgrade – Faculty of Chemistry
Expression of recombinant SARS-CoV-2 nucleocapsid protein in mammalian cells
Oral presentation

11:00–11:15 Jovana Stevanović
University of Belgrade - Institute for the Application of Nuclear Energy
Evaluation of long noncoding RNAs *H19* and *MALAT1* as oxidative stress indicators in gestational diabetes
Oral presentation

11:15–11:45 Coffee Break

Section 5

11:45–12:15 Jelena Purać
University of Novi Sad, Faculty of Sciences, Department of Biology and Ecology
The effect of low-dose spermidine supplementation on polyamine content and antioxidative defence mechanisms in honey bees
Invited lecture

12:15–12:45 Neda Aničić
University of Belgrade – Institute for Biological Research ‘Siniša Stanković’
Insights into iridoid biosynthesis in *Nepeta* species (subfam. *Nepetoideae*, fam. *Lamiaceae*): Functional characterization of a key enzyme
Invited lecture

12:45–13:00 Jelena Spremo
Faculty of Sciences, Department of Biology and Ecology, University of Novi Sad
The impact of spermidine supplementation on genes involved in autophagy in honey bee (*Apis mellifera* L.)
Oral presentation

13:00–13:15 Antos Sachanka
Institute of Bioorganic Chemistry of the National Academy of Sciences of Belarus, Belarus
Design and property of the fusion enzyme of bovine DNA-exotransferase and DNA binding protein *Sso7d* from *S. solfataricus*
Oral presentation

13:15–13:30 Natalija Andrejević
Faculty of Chemistry, University of Belgrade
Amyloid fibrillation of egg-white proteins and its tendency to bind synthetic dye from water solutions
Oral presentation

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

Section 6

15:00–15:30 Camille Loupiac
UMR PAM, Team PCAV, Institut Agro Dijon, Université de Bourgogne Franche Comté, France
Proteins under stresses
ANSO PRESSION Lecture

15:30–16:00 Andreja Rajković
Faculty of Bio-science Engineering, Department of Food Technology, Safety and Health, Ghent University, Belgium
Be serious about *B. cereus*: facts that do(not) age well
ANSO PRESSION Lecture

16:00–16:30 Aleksandra Martinović
Food Hub, University Donja Gorica, Montenegro
The significance of the contemporary tools of the microbial food safety risk assessment
ANSO PRESSION Lecture

18:30–22:00 Social event 2 - dinner / ANSO PRESSION organized event

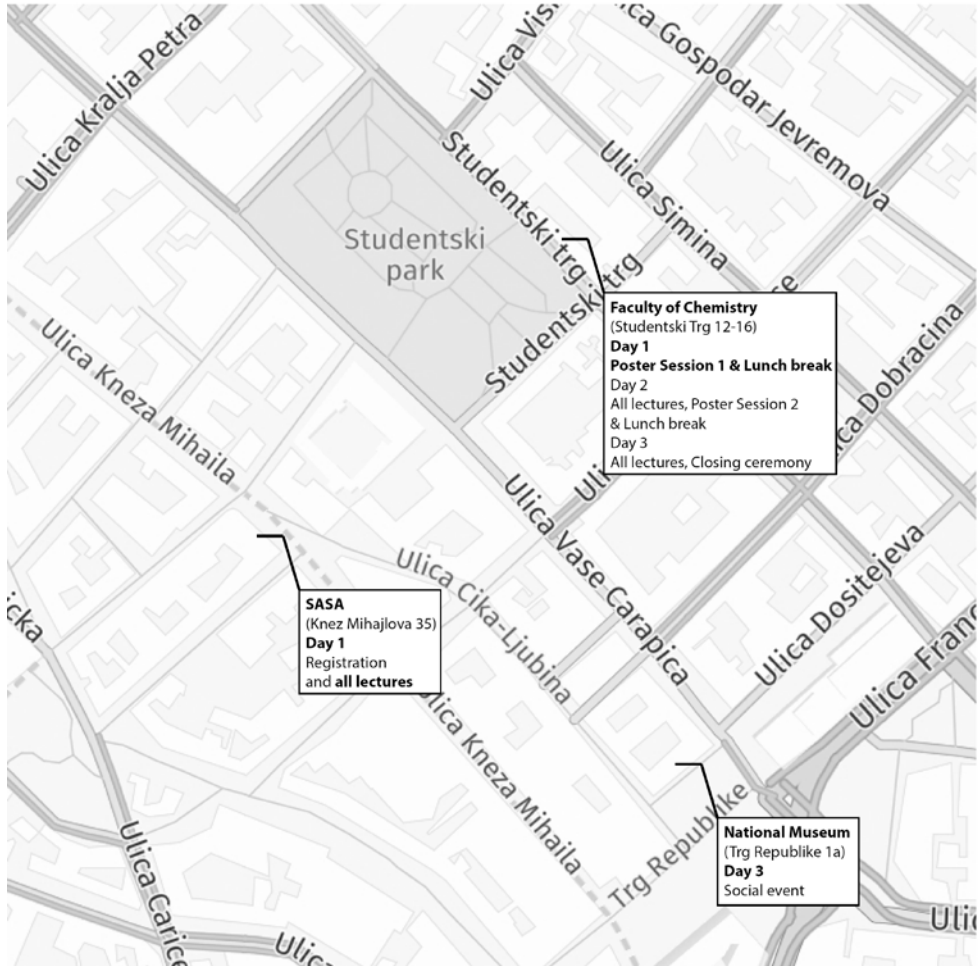
Day 3 – Saturday, September 23rd

(University of Belgrade – Faculty of Chemistry: Ceremony Hall)

Section 7

- 10:00–10:30 Jaroslav Katrlík
Institute of Chemistry, Slovak Academy of Sciences, Slovakia
Study of biomolecular interactions by biosensors and biochips
ANSO PRESSION Lecture
- 10:30–11:00 Jelena Žakula
University of Belgrade - Institute of Nuclear Sciences Vinča
Cancer cell death induced by ruthenium complexes
Invited lecture
- 11:00–11:30 Ivan Spasojević
University of Belgrade - Institute for Multidisciplinary Research
Microalgae and transition metals - adaptation and opportunities
ANSO PRESSION Lecture
- 11:30–12:15 Coffee Break & Cocktail
- 12:15–12:30 Posters and speed talks awards announcement
- 12:30–13:00 Closing ceremony
- 14:30–17:00 Social event 3 - guided tour / visit to the National Museum

Map of events



Posters

(abstracts are enumerated for referencing purposes)

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Simple two-step semi-preparative isolation and purification of transferrin from human serum

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Chaperone self-assemblies: Dissociation of DNAJb6 oligomers

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Foreword

Dear colleagues

Welcome to the XII Conference of The Serbian Biochemical Society, entitled 'Biochemistry in Biotechnology'.

This year we have the richest program ever. In addition to our tradition to invite promising young researchers from four main university centers in Serbia to deliver lectures, we have eight guests from abroad that will participate through FEBS3+ program or within ANSO PRESSION project. This is a turning point in the organization of the conference which undergoes a transformation into scientific event with strong international character.

As always, we cherish the participation of PhD students and early career researchers. We are glad that many colleagues took the opportunity to show what they do and to find their place within the scientific ecosystem.

Organizing Committee

Insights into iridoid biosynthesis in *Nepeta* species (subfam. *Nepetoideae*, fam. *Lamiaceae*): Functional characterization of a key enzyme

Neda Aničić^{1*}, Dragana Matekalo¹, Marijana Skorić¹, Jelena Božunović¹, Jasmina Nestorović Živković¹, Uroš Gašić¹, Milica Milutinović¹, Slavica Dmitrović¹, Luka Petrović¹, Biljana Filipović¹, Tijana Banjanac¹, Branislav Šiler¹, Boban Andelković², Milena Dimitrijević³, Danijela Mišić¹

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Nepeta L. holds a prominent position as the largest genus in the *Lamiaceae* family and serves as the exclusive representative of the iridoid-lacking *Nepetoideae* subfamily which produces iridoids. The genus showcases a rich chemodiversity, encompassing taxa both with and without iridoids. Our study investigates the genetic basis of iridoid diversity using omics-guided and functional genomics approaches. We identified functional iridoid synthases in iridoid-producing *N. ratanjensis* (NrIS2) and *N. sibirica* L. (NsIS), as well as in iridoid-lacking *N. nervosa* L. (NnIS). Remarkably, *N. nervosa* carries a dormant iridoid biosynthetic platform, suggesting a loss of iridoid production during its evolutionary history. Moreover, we explore regulatory mechanisms through comparative iridoid profiling and co-expression analysis of biosynthetic genes and transcription factors under various stress conditions (e.g., dehydration, UV – B radiation, pathogens) or elicitors (MeJA). These mechanisms influence plant productivity and the presence/absence of iridoids or their specific groups (iridoid aglycones and iridoid glycosides). Our research offers valuable insights into the molecular mechanisms driving iridoid biosynthesis and the chemical evolution of iridoids within *Nepeta*. This study enhances our understanding of the intricate relationship between genetics and the environment, providing comprehensive insights into iridoid metabolism, chemical evolution and ecology.

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