

FEBS3+ MEETING

24th - 27th September

Hotel M / Belgrade



Serbia, Croatia, Hungary,
Slovenia, Bosnia and Herzegovina

” ADVANCES IN MOLECULAR BIOSCIENCES:
FROM GENES TO PERSONALIZED THERAPIES ”

SUPPORTED BY >



FEDERATION OF EUROPEAN
BIOCHEMICAL SOCIETIES



BOOK OF ABSTRACTS

ORGANIZED BY >



Хемијски факултет
Универзитет у Београду



HDBMB
Hrvatsko društvo za biokemiju
i molekularnu biologiju



SLOVENIAN
BIOCHEMICAL
SOCIETY



UBMB U BIH
ABMB IN B&H



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SESSION TOPICS

1. MOLECULAR EVOLUTION

2. SYSTEMS BIOLOGY AND BIOINFORMATICS

3. REGULATION OF GENE EXPRESSION

4. BIOMARKERS AND THERAPEUTICS DEVELOPMENT

5. MOLECULAR BASIS OF DISEASE

6. DESIGN AND STRUCTURE OF PROTEINS

7. GENETICS

8. BIOTECHNOLOGY

9. BIOACTIVE COMPOUNDS AND METABOLISM

10. CELLULAR PROCESSES AND SIGNALING



DAY 1

WEDNESDAY 24th September 2025

13:00 - 14:30



REGISTRATION

14:30 - 15:00

OPENING CEREMONY



15:00

15:15

**FEBS
PRESENTATION**



15:15

16:00

FEBS EDUCATION LECTURE

Chairpersons:

**Natalija Polović /Serbia,
Nino Sinčić /Croatia**

Ferhan Sagin /Turkey

Publish or perish? Zoom or doom?
Rethinking the future of research
and education

16:00

17:00

PLENARY LECTURE

Chairperson:

Beata Lontay /Hungary

Balázs Papp /Hungary

Leveraging genomic surveillance
to understand and combat antibiotic resistance

TOPIC 1

17:00

18:00

MOLECULAR EVOLUTION

Chairpersons:

**Marta Popović /Croatia,
Bálint Csörgő /Hungary**

17:00

17:30

- > **Damir Baranašić /Croatia**
Sequence determinants of
transcription initiation and promot-
er architecture in vertebrates

17:30

18:00

- > **Bálint Csörgő /Hungary**
Molecular tools for probing
bacteriophage-host interactions
in clinical pathogens

TOPIC 2

**SYSTEMS BIOLOGY
AND BIOINFORMATICS**

Chairpersons:

**Attila Csikász-Nagy /Hungary,
Radivoje Prodanović /Serbia**

> **Attila Csikász-Nagy /Hungary**

From yeast cells to digital twins:
Charting cellular networks for
disease and drug discovery

> **Abdurahim Kalajdzic /BIH**

Innovations in bioinformatics tools for
the analysis of archeogenomics data



18:00
-
18:30

INDUSTRY LECTURE
ANALYSIS

Luka Mihajlović
Recent advances in HRAM-based -omics

19:00 - 20:30



WELCOME RECEPTION



DAY 2

THURSDAY 25th September 2025

09:00
-
10:00

PLENARY LECTURE
Chairperson:
Boris Rogelj /Slovenia

Jernej Ule /Slovenia
Collective homeostasis of condensation-prone proteins via their mRNAs

10:00
-
11:00

TOPIC 3
**REGULATION OF GENE
EXPRESSION**
Chairpersons:
Igor Stuparević /Croatia,
Ágnes Tantos /Hungary

TOPIC 4

**BIOMARKERS AND
THERAPEUTICS DEVELOPMENT**
Chairpersons:
Nino Sinčić /Croatia,
Tamara Saksida /Serbia

10:00
-
10:30

> **Erna Karalija /BIH**
Priming the future: Harnessing plant memory for climate-resilient crops

> **Olga Gornik /Croatia**
N-glycosylation of complement component 3 (C3) as a potential target in type 1 diabetes

10:30
-
11:00

> **Rosa Karlić /Croatia**
Decoding the interplay between the epigenome and mutational processes in cancer

> **Jelena Vekić /Serbia**
Aspects of cardiometabolic risk in women: focus on pregnancy

11:00 - 11:30



COFFEE BREAK



11:30
-
13:30

SHORT TALK SESSION 1

SHORT TALK SESSION 2

11:30 > **Mehmet Gümüş /Turkey**
11:45 SACM1L modulates autophagic flux,
cellular dynamics and
PI3K-AKT-mTOR signalling
in MCF7 breast cancer cells

> **Isidora Protić-Rosić /Austria**
Redirected killing of allergen-specific
CD4⁺ T cells by pMHC class II
CAR NK-92 cells

11:45 > **Agnes Tantos /Hungary**
12:00 Structural and functional effects of
disease-related mutations of
KMT2D

> **Zorana Lopandić /Serbia**
Glycoengineered H1sD2 as a novel
immunomodulatory agent for
enhancing allergen-specific immu-
notherapy

12:00 > **Buse Ceyda Öncel, Turkey**
12:15 Transcriptome analysis of propranolol
and labetalol applied sensitive
and doxorubicin-resistant breast
cancer cells

> **Loretta Laszlo /Hungary**
Stage-Dependent Remodeling of the
RAS Network in Colon Adenocarci-
noma

12:15 > **Belmina Šarić Medić /BIH**
12:30 In silico functional assessment and
molecular interaction modeling of
antimicrobial agents

> **Matilda Šprung /Croatia**
Quinuclidine-based quaternary
ammonium compounds: a natural
scaffold for antimicrobial innovaion

12:30
-
13:30

PLENARY LECTURE

Chairperson:

Marija Gavrović Jankulović
/Serbia

Ana Cvejić /Denmark

Single-cell multi-omics map of human
foetal blood in Down syndrom

13:30 - 16:00

LUNCH AND POSTER PRESENTATIONS

13.30

> **LUNCH**



14:00
-
16:00

- > POSTER SESSION 1 : **Biomarkers and therapeutics development /Molecular basis of disease**
- > POSTER SESSION 2 : **Biotechnology/Genetics**



16:00
-
16:30

INDUSTRY LECTURE LKB

Aleksandra Kukhareva
**Simplified tagged protein purification
and removal**

16:30
-
17:30

TOPIC 5

MOLECULAR BASIS OF DISEASE

Chairpersons:
Boris Rogelj /Slovenia,
Nino Sinčić /Croatia

16:30
-
17:00

> **Naida Lojo-Kadrić /BIH**
Genetic basis of coronavirus
associated dysosmia and dysgeusia

17:00
-
17:30

> **Damjana Rozman /Slovenia**
Integrative omics for biomarker
discovery in metabolic associated
steatotic liver disease
and hepatocellular carcinoma

17:30
-
18:30

SHORT TALK SESSION 3

17:30
-
17:45

> **Alma Herić /BIH**
Monitoring a patient with suspected
myelodysplastic syndrome - case
report

17:45
-
18:00

> **Antonija Jurak Begonja /Croatia**
Interleukin-1 alpha alters mega-
karyocyte maturation, promotes
emperipolesis, and induces
a distinct proteomic profile

18:00
-
18:15

> **Tamara Saksida /Serbia**
Connecting brain and gut inflammation
in the murine model of Alzheimer's
disease

TOPIC 6

DESIGN AND STRUCTURE OF PROTEINS

Chairpersons:
Marta Popović /Croatia,
Roman Jerala /Slovenia

> **Gregor Anderluh /Slovenia**
Engineering of protein nanopore
for sensing applications

> **Natalija Polović /Serbia**
Amyloids - from pathological
protein aggregates to promising
nanomaterials

SHORT TALK SESSION 4

> **Eszter Nagy-Kanta /Hungary**
Insights on the interaction between
the postsynaptic GKAP and Shank
scaffold proteins

> **Albert Pál /Hungary**
Engineering non-CG specific DNA
methyltransferases for functional
studies of epigenetic regulation

> **Natalija Andrejević /Serbia**
Unraveling the human serum albumin
aggregation pathway: Structural
insights into the amyloid/amorphous
aggregation shift and oligomerization
potential modulated by physiological
ligands and thiol content



18:15
18:30

> **Özlem Darcansoy İşeri / Turkey**
Cellular and gene regulatory effects of genistein on docetaxel sensitive and resistant breast cancer cells

> **Mujo Hasanović /BIH**
Seed priming of *Solanum lycopersicum* with *Paraburkholderia phytofirmans* PsJN enhances nickel stress response and induces intergenerational transcriptomic modulation

20:00 - 23:00



CONGRESS **DINNER**



DAY 3

FRIDAY 26th September 2025

09:00
10:00

PLENARY LECTURE

Chairperson:

Antonija Jurak Begonja /Croatia

Ivan Mijaković /Sweden

Molecular biology meets nanotechnology: promise of personalized medicine

10:00
11:00

TOPIC 7

GENETICS

Chairpersons:

Emina Kiseljaković /BIH
Đorđe Miljković /Serbia

TOPIC 8

BIOTECHNOLOGY

Chairpersons:

Tanja Čirković Veličković /Serbia
Zoltan Lipinszki /Hungary

10:00
10:30

> **Lejla Kapur Pojskić /BIH**
Novel research insights into biological effects of halogenated boroxine (HB) reconfirm its antitumor potential

> **Balázs Enyedi /Hungary**
Illuminating leukocyte migration: Visualizing chemoattractant gradients with novel fluorescent probes

10:30
11:00

> **Uroš Potočnik /Slovenia**
Multi-omic biomarkers for personalized medicine and molecular mechanisms of non-response to biological drugs in chronic immune diseases

> **Marko Živanović /Serbia**
Electrospun scaffolds: Merging technology and biomedicine for scientific progress



11:00 - 11:30



COFFEE **BREAK**

11:30
-
12:30

SHORT TALK SESSION 5

11:30 - 11:45 > **Anita Skakić /Serbia**
CRISPR/Cas9 and iPSC-based platforms to explore pathophysiology and therapeutic approaches in glycogen storage disease type Ib

11:45 - 12:00 > **Cecile Otten /Croatia**
ACRC/GCNA is an essential protease which repairs DNA-protein crosslinks during embryonic development

12:00 - 12:15 > **Anja Pišlar /Slovenia**
Multifunctional roles of γ -enolase in the central nervous system: More than a neuronal marker

12:15 - 12:30 > **Arshi Arshi /Hungary**
Effects of 2-deoxyglucose and diclofenac sodium on MCF7 cell lines

SHORT TALK SESSION 6

> **Luka Blagojević /Serbia**
Characterisation and recombinant expression of a thermostable endoglucanase from *Bacillus velezensis* for lignocellulosic biomass hydrolysis

> **Tina Vida Plavec /Slovenia**
Engineering *Lactococcus cremoris* for recombinant protein packaging into extracellular vesicles

> **Nina Tiršo /BIH**
Melatonin modulates lipid metabolism in a rat model of testosterone-induced polycystic ovary syndrome: Comparison with metformin and combination therapy

> **Mario Stojanović /Croatia**
Toll-like receptors as a missing link in Notch signaling cascade during neurodevelopment

12:30
-
13:30

PLENARY LECTURE

Chairperson:

Lejla Kapur Pojskić /BIH

Lada Lukić Bilela /BIH

Lightless, not lifeless: Extreme habitats

as sources of novel bioactive molecules



13:30 - 16:00

LUNCH AND POSTER PRESENTATIONS

13.30

> **LUNCH**



14:00
-
16:00

> **POSTER SESSION 3**

Design and structure of proteins/Regulation of gene expression/Systems biology and bioinformatics

> **POSTER SESSION 4**

Bioactive compounds and metabolism/Cellular processes and signalling

**16:00
-
17:00**

TOPIC 9

BIOACTIVE COMPOUNDS AND METABOLISM

Chairpersons:

**Nataša Poklar Ulrih /Slovenia
Suzana Jovanović Šanta /Serbia**

TOPIC 10

CELLULAR PROCESSES AND SIGNALING

Chairpersons:

**Igor Stuparević /Croatia
Antonija Jurak Begonja /Croatia**

16:00
-
16:30

> **Zita Bognár /Hungary**

Comparison of mitochondrial and antineoplastic effects of amiodarone and desethylamiodarone in cancer lines

> **Mirta Boban /Croatia**

Degradation-mediated protein quality control in quiescent cells

16:30
-
17:00

> **Ivana Beara /Serbia**

Wine polyphenols: occurrence and biological activity as a biochemical aspect of wine quality

> **Tea Lanišnik Rižner /Slovenia**

From biomarker discovery to molecular mechanisms: omics approaches in endometriosis

**17:00
-
17:30**

SHORT TALK SESSION 7

17:00
-
17:15

> **Cene Skubic /Slovenia**

Sterol specific regulation of hepatic signaling distinct roles of lanosterol, desmosterol and lathosterol in liver cell fate and signaling

SHORT TALK SESSION 8

> **Snježana Jurić /Slovenia**

Nanobodies Uncouple Florigen Binding to Membranes and THF1



17:00
-
17:15

> **Dragica Mićanović /Serbia**
The mechanism of action of HYCO-3, an Nrf2 activator/CO releaser hybrid, in inhibiting autoimmune disease development in mouse models

> **Milena Zlatanova /Serbia**
Proteolytically active allergen Act d 1 induces inflammation via TLR4 receptor cleavage

17:15
-
17:30

> **Berfin Doğa Koçkaya /Turkey**
Investigation of the effects of selected miRNAs using bioinformatics approaches on AHNAK protein regulation in drug-resistant breast cancer cells

> **Lana Vujica /Croatia**
Understanding the ecotoxicological role of the Oatp1d1 transmembrane transporter using a zebrafish (Danio rerio) Oatp1d1 mutant line

18:00 - 20:00

SLOVENIAN BIOCHEMICAL SOCIETY SESSION

Chairpersons:

Gregor Anderluh /Slovenia,
Marija Gavrović – Jankulović /Serbia

18:00-18:30 > **Igor Križaj /Slovenia**
From snake venom to therapy: A novel drug candidate for short-term thrombosis prevention

18:30-19:00 > **Iva Hafner Bratkovič /Slovenia**
NLRP3 inflammasome and pyroptosis: from mechanisms to applications

19:00-19:30 > **Tina Lebar /Slovenia**
Homology-guided engineering of tyrosine recombinase DNA specificities

19:30-19:45 > **Boštjan Petrič /Slovenia**
Alzheimer's dementia and paraoxonase 1: Why it pays off to measure enzyme kinetics and not just activities

20:00 - 21:00

CLOSING CEREMONY



*Biotechnology***A highly optimized protocol for the isolation and purification of transferrin from human serum**

**Danilo Četić¹, Goran Miljuš¹, Jovana Stevanović¹, Zorana Dobrijević¹, Miloš Šunderić¹,
Olgica Nedić², Nikola Gligorijević¹, Aleksandra Vilotić², Valentina Borko³,
Mario Gabričević⁴, Tin Weitner⁴, Ana Penezić¹**

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Faculty of Pharmacy and Biochemistry, Zagreb, Croatia

contact: danilo.cetic@inep.ac.rs

KEYWORDS: transferrin, anion-exchange chromatography, protein purification

Different methods for the isolation and purification of human transferrin (Tf) from human plasma and serum have been described in the literature. However, none provide a highly pure final product in a time-efficient manner, whereas the method described in this work accomplishes both. It consists of two separate steps—a sample preparation and an anion-exchange chromatography step.

Our initial methodology used rivanol for protein precipitation in the first step and activated charcoal for the removal of excess rivanol from the remaining supernate. This provided Tf of >99% purity while retaining Tf function, analyzed by immunofluorescent staining for transferrin-transferrin receptor 1 interaction and ferrozine method for iron binding capacity, and structure, confirmed by recording and comparing fluorescent spectra of purified Tf and commercially available pure Tf. However, the method produced a relatively low Tf yield. The initial method was then modified to use potassium bromide for excess rivanol removal, increasing yield by approximately 82% compared to the initial protocol. We then tested if saturating Tf with iron(III) ions before precipitation with rivanol would increase yield. This increased yield by a further 20% compared to potassium bromide rivanol removal, and a final 119% compared to the initially proposed method. The improved method was additionally evaluated for the purification of Tf from the serum of patients with different iron-associated pathologies, showing its applicability on different types of samples.



*Biotechnology***A highly optimized protocol for the isolation and purification of transferrin from human serum**

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