



FEBS3+ Tallinn

15-17 June 2022

CONFERENCE PROGRAMME

Wednesday, June 15

9:00 REGISTRATION AND COFFEE

10:00 Opening ceremony - **Tiit Lukk** (Estonian Biochemical Society)

10:05 **Prof. Tiit Land** (Tallinn University of Technology) - Welcome

10:10 **Prof. Jerka Dumić** (University of Zagreb, Faculty of Pharmacy and Biochemistry, Croatia; Federation of European Biochemical Societies) "FEBS - advancing molecular life sciences"

Plenary Session - Session chair: Kaspars Tars

10:30 **Prof. Marc Baumann** (University of Helsinki, Finland; Finnish BioBio) "Clinical Proteomics *Quo Vadis?* Fine-tuning clinical proteomics for the future."

10:50 **Prof. Daumantas Matulis** (Vilnius University, Lithuania; LBS) "Fluorescent probes for CAIX expressed in live cancer cells"

11:10 **Prof. Kristaps Jaudzems** (Latvian Institute of Organic Synthesis) "Structural Analysis of an Antigen Chemically Coupled on Virus-Like Particles"

11:30 **FEBS National Lecture** presented by the Latvian Biochemical Society: **Prof. Helgi Schiöth** (Uppsala University, Sweden) "Human Drug targets: Trends in drug discovery"

12:15 LUNCH

Session 2 – Session chair: Asko Uri

13:10 **Dr. Kadri Ligi** (Solis BioDyne OÜ) "Birth of a protein: from development to production"

13:30 **Dr. Mart Ustav Jr** (Icosagen Cell Factory OÜ) "Inhalation based delivery of broadly neutralizing SARS-CoV-2 antibodies"

13:50 **Prof. Rimantas Daugelavicius** (Vytautas Magnus University) "Potentiometry for studies of membranes and energetics in microorganisms"

14:10 **Dr. Vytautas Petrauskas** (Vilnius University) "A comprehensive tool for protein-ligand binding constant determination by thermal shift assay"

14:30 **Tõnis Laasfeld** (University of Tartu) "Live cell fluorescence-based ligand binding assays powered by automated microscopy and machine learning image analysis"

14:45 COFFEE BREAK / POSTERS

Session 3 – Session chair: Vytautas Petrauskas

15:15 Dr. Kaisa Marjamaa (VTT) “Enzymatic fibre modifications: from fundamentals to applications”

15:35 Prof. Priit Väljamäe (University of Tartu) “H₂O₂ cosubstrate is a double-edged sword for lytic polysaccharide monooxygenases (LPMOs)”

15:55 Prof. Angela Ivask (University of Tartu) “Antimicrobial materials and surface coatings: an effective solution or a matter of concern”

16:15 Prof. Kaspar Valgepea (University of Tartu) “Unraveling acetogen gas fermentation using quantitative systems biology”

16:35 Prof. Petri-Jaan Lahtvee (Tallinn University of Technology) “Developing locally applicable biotechnology value chains”

17:00 POSTER SESSION

20:00 GALA DINNER

Thursday, June 16

Session 4 – Session chair: Ly Villo

9:00 Prof. Mart Saarma (University of Helsinki) “ER stress regulation CDNF and MANF proteins protect cells by novel mechanism”

9:20 Dr. Aiste Jekabsone (Lithuanian University of Health Sciences) “Extracellular Vesicles as Inflammatory Mediators between Airway and Brain”

9:40 Prof. Andres Salumets (University of Tartu) “How Knowledge of Biochemistry Can Help Clinical Medicine: An Example of Reproductive Medicine”

10:00 Prof. Aija Linē (Latvian Biomedical Research and Study Center) “Functional roles of exercise-induced extracellular vesicles in the prevention of cancer”

10:20 COFFEE BREAK / POSTERS

Session 4 continued – Session chair: Daumantas Matulis

10:50 Dr. Zane Kalnina (Latvian Biomedical Research and Study Centre) “Development of an *in vivo* model system for carbonic anhydrase 9 targeting in breast cancer”

11:10 Dr. Davids Fridmanis (Latvian Biomedical Research and Study Centre) “Detection of SARS-CoV-2 RNA in wastewater: importance of viral lineage and population size assessment”

11:30 Kristina Mašalaite (Vilnius University) “NLRP3 inflammasome activation by immune complexes of virus-like particles in microglia”

11:45 Juta Rainytė (Vilnius University) “Immunological comparison of recombinant shrimp allergen Pen m 4, produced in *Pichia pastoris* and *Escherichia coli*”

12:15 LUNCH

Parallel session 5a – Session chair: Maija Dambrova

13:00 Dr. Vaida Šeputienė (Thermo Fisher Scientific Baltics UAB) “A new medicine in your prescription – mRNA”

13:20 Dr. Baiba Svalbe (Latvian Institute of Organic Synthesis) “Stealth brush polymers avoid rapid clearance and display effective accumulation in TNBC tumours”

13:40 Dr. Valeryia Mikalayeva (Lithuanian University of Health Sciences) “Alternative energy: The role of branched-chained amino acids in breast cancer cells”

14:00 Danilo Mladenović (Tallinn University / Hansabiomed Life Sciences) “Acidification of blood plasma facilitates the isolation and analysis of extracellular vesicles”

14:30 COFFEE BREAK / POSTERS

Session 6a – Session chair: Tiit Lukk

15:00 Prof. Kaspars Tars (Biomedical Research and Study Center, Riga, Latvia; LaBS) “Structure and applications of ssRNA bacteriophage AP205”

15:20 Dr. Gints Kalnins (Latvian Biomedical Research and Study Center) “Variety of GRM2 type bacterial microcompartment particles demonstrated by cryo-EM”

15:40 Dr. Karin Ernits (Lund University) “Small alarmone (p)ppGpp hydrolase SpoT counteracts the synthetase activity of RelA”

16:00 Dr. Teodors Pantelejevs (Latvian Institute of Organic Synthesis) “A conserved mechanism of interferon signalling antagonism in poxviruses and paramyxoviruses”

16:20 Dr. Priit Eek (Pennsylvania State University) “Structural studies of chromatin proteins: the impact of cryo-EM”

17:00 POSTER SESSION

Parallel session 5b – Session chair: Ago Rinken

13:00 Dr. Emilio Parisini (Latvian Institute of Organic Synthesis) “Drugging the undruggable: towards the development of selective modulators of cadherin-mediated cell-cell adhesion”

13:20 Dr. Tarvi Teder (Karolinska Institute) “Structural, functional and regulatory aspects of leukotriene biosynthetic enzymes”

13:40 Dr. Edijs Vavers (Latvian Institute of Organic Synthesis) “Interaction between SIGMA-1 and GABA-B receptors: evidence from SIGMA-1 receptor knockout mice”

14:00 Maris-Johanna Tahk (University of Tartu) “Methods for measuring ligand binding properties to Neuropeptide Y Y1 receptors with novel high-affinity fluorescent ligands”

Session 6b – Session chair: Reet Kurg

15:00 Dr. Egils Stalidzans (University of Latvia) “Interactions of kinetic and stoichiometric models in the estimation of flux distribution in a metabolic network”

15:20 Paola Monteiro de Oliveira (Tallinn University of Technology) “Growth characterization and substrate consumption patterns of non-conventional yeasts in C5-enriched hydrolysates from birch”

15:35 Alina Rekena (Tallinn University of Technology) “Metabolic network analysis of *Rhodotorula toruloides* using stoichiometric models and proteomics analysis”

15:50 Henrique Sepúlveda Del Rio Hamacek (Tallinn University of Technology) “Development of 3D printed engineered living materials for biochemicals production”

16:05 Dalia Smalakyte (Vilnius University) “Self-regulation of the type III Crispr-Cas signaling pathway”

16:20 Hegne Pupart (Tallinn University of Technology) “Insights into bacterial dye-decolorizing peroxidases and their lignin remodeling activity”

Friday, June 17

Session 7 – Session chair: Tiit Land

9:00 Prof. Vilmante Borutaite (Lithuanian University of Health Sciences) “Toxic when being outside: how extracellular tau proteins kill neurons”

9:20 Dr. Vytautas Smirnovas (Vilnius University) “The role of environment in amyloid aggregation”

9:40 Prof. Peep Palumaa (Tallinn University of Technology) “Copper metabolism in Alzheimer’s disease”

10:00 Dr. Alons Lends (Latvian Institute of Organic Synthesis) “Functional and pathological amyloids seen by solid-state NMR spectroscopyd-state NMR”

10:20 Dr. Sebastian Wärmländer (Stockholm University) “Cell-Penetrating Peptides with Unexpected Anti-Amyloid Properties”

10:40 COFFEE BREAK / POSTERS

Session 8 – Session chair: Kaspars Tars

11:30 Dr. Rasa Zukiene (Vytautas Magnus University) “Modulation of Stevia secondary metabolism with cold plasma”

11:50 Dr. Janis Liepins (University of Latvia) “Purine auxotrophic starvation evokes quiescence like phenotype in the budding yeast”

12:10 Dr. Edgars Liepins (Latvian Institute of Organic synthesis) “Long-chain acylcarnitines: from mitochondrial metabolism to clinical applications”

12:30 Tanel Sõrmus (University of Tartu) “Covalent bisubstrate inhibitors of protein kinases”

12:45 Robert Risti (Tallinn University of Technology) “Albumin affects the stability, oligomerization and ligand interactions of lipoprotein lipase”

13:00 Best poster award ceremony, concluding remarks

13:15 LUNCH