42nd International Symposium on the Separation of Proteins, Peptides & Polynucleotides

Vienna, November 5 – 8, 2023

PRE-CONFERENCE WORKSHOPS

SUNDAY, NOVEMBER 5, 2023

09:00	Start of Registration	
9:30	**WORKSHOP 1**	
	Sonja Berensmeier TU Munich **Sebastian Schwaminger** MedUni Graz	Magnetic separation in downstream processing
11:15	**WORKSHOP 2**	
	Michel Eppink Byondis BV	Bioinformatics as a tool developing robust biotherapeutic proteins
13:00	**WORKSHOP 3**	
	Cristina Cabral Univ. of Beira Interior **Alois Jungbauer** BOKU, Vienna	Mechanistic understanding of biomolecules adsorption: theory and applications
14:45	**WORKSHOP 4**	
	Sonja Berensmeier TU Munich **Michel Eppink** Byondis BV **Egbert Müller** Tosoh Bioscience	Poly-/Oligonucleotide separation in biopharmaceutical processing and their quality requirements

ISPPP CONFERENCE

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17:00	Welcoming Remarks by Nico Lingg	
Key Note Lecture – Chair: Nico Lingg		
17:20	**Elena Dominguez Vega** Leiden Univ. Medical Center	Probing structure and function of proteoforms by MS-hyphenated separation techniques
18:00	Welcome Reception	

MONDAY, NOVEMBER 6, 2023

Key Note Lecture – Chair: Aleš Podgornik		
08:30	**Nico Lingg** **Alois Jungbauer**	Chairman Remarks
08:45	**Dan Bracewell** University College London	**KN2**: Time-Dependent Sorption Behaviour of Viral Vectors
Session 1: DNA/Vaccines - Chair: Aleš Podgornik		
09:25	**Linda Gombos** Biomay	**OP1:** High-Throughput Manufacturing of Personalized Plasmid DNA Cancer Vaccines
09:45	**Ana Rita Santos** iBB - Institute for Bio-engineering and Biosciences	**OP2:** Towards industrial manufacturing of DNA-origami nanostructures: scalling up ssDNA scaffold purification
10:05	**Viviane Maimoni Gonçalves** Instituto Butantan	**OP3:** Challenges for purification of a pneumococcal recombinant protein
10:25	**Julian Grinsted** University College London	**FP1:** Design of affinity separations for the manufacture of in vitro transcribed mRNA
	Nick Samuelson MSD	**FP2:** Increased Virus-Like Particle Recovery with Disassembly Prior to Purification
10:35	Refreshment Break	
Session 2: Process Intensification - Chair: Giorgio Carta		
11:05	**Michel Eppink** Byondis BV	**OP4:** Cell Tolerant Radial Affinity Chromatography (cTRAC)
11:25	**Egbert Müller** Tosoh Bioscience GmbH	**OP5:** Step Gradient SMB for mAb polishing using salt tolerant anion exchangers
11:45	**Mattia Sponchioni** Politecnico Di Milano	**OP6:** Advantages and Opportunities of Multicolumn Countercurrent Solvent Gradient Purification Accessed by Tuning the Product Internal Recycling Phase

12:05	**Ismaele Fioretti** Politecnico Di Milano	**FP3:** Process Intensification in the Purification of an Oligonucleotide Sequence by MCSGP with UV-Based Dynamic Control
	Thomas Müller-Späth Chromacon AG	**FP4:** Automated two-column chromatography for the purification of Oligonucleotides and Peptides
	Touraj Eslami acib Gmbh	**FP5:** Optimizing chromatography for maximum efficiency: an innovative approach to optimize productivity, resin utilization, and buffer consumption
12:20	Lunch Break	
Session 3: Novel Bioseparations and Products – Chair: Ana Cecilia Roque		
13:45	**Nils Brechmann** Magic Bioprocessing	**OP7:** Scalable magnetic bead-based cell separation technology for the depletion of receptor positive cell subpopulations
14:05	**Dennis Röcker** TU Munich	**FP6:** Enhancing chromatography by use of electrochemically modulated membranes
	Ryan Kilgore North Carolina State University	**FP7:** Peptide ligands: a bespoke affinity platform for next-generation biotherapeutics and gene-editing products
	Staš Vrh Univ. of Ljubljana	**FP8:** Implementation of polyHIPE monoliths for preparative and analytical separation of bacteriophages and their genomic DNA
14:20	**Noor Mujahid** University College London	**OP8:** Characterising feed and membrane interactions in tangential flow filtration of lentiviral vectors: hints for recovery improvement
14:40	**Hironobu Shirataki** Asahi Kasei Medical	**OP9:** Numerical calculations of membrane structure, virus removal performance, and filtration behaviours of virus filters based on a heterogeneous membrane structural model comprising multiple layers with different pore size distributions
15:00	Refreshment Break	
Session 4: Protein Analytics – Chair: Elena Dominguez Vega		
15:30	**Deepika Sarin** Indian Institute of Technology, Delhi	**OP10:** Multiattribute monitoring of charge-based heterogeneity of recombinant monoclonal antibodies using 2D HIC-WCX-MS
15:50	**Tushar Savane** Indian Institute of Technology Delhi	**OP11:** Quantification of concentration of mAb and excipients in a high concentration ternary mixture using ATR-FTIR spectroscopy and chemometrics
16:10	**Markus Mozgovicz** Vrije Universiteit Brussels	**OP12:** Towards comprehensive SAX × RP 2D-LC-MS/MS host cell protein profiling in biopharmaceutical manufacturing
16:30	**Yehia Mechref** Texas Tech University	**OP13:** Target Quantitative Analysis of Glycoproteins by Parallel Reaction Monitoring (PRM) LC-MS/MS
16:50	**Estela Giménez** Univ. of Barcelona	**OP14:** In-line enzymatic digestion strategies beyond trypsin for the sensitive targeted bottom-up analysis of protein biomarkers by capillary electrophoresis-mass spectrometry

Session 5: BioProEng - Chair: Astrid Dürauer		
17:10	**Astrid Dürauer** BOKU Vienna	Short Introduction Doctoral Programme BioProEng (BOKU)
17:15	**David Scheich** BOKU Vienna	**FP9:** Purification and characterization of recombinant secretory immunoglobulin A from CHO cell culture supernatant
	Anna-Carina Frank BOKU Vienna	**FP10:** Cationic flocculants assisted clarification
	Alexander Zollner BOKU Vienna	**FP11:** Chromatography-based purification of enveloped virus-like particles displaying different influenza surface antigens for an immunologic study in mice
	Lena Achleitner acib GmbH	**FP12:** Baculovirus working stock: the production and purification of an intermediate product for large scale VLP production in insect cells
	Matthias Medl BOKU Vienna	**FP13:** Uncovering the black-box of data-driven models in biotechnological process modeling
17:40	Poster Session and Networking Reception	

TUESDAY, NOVEMBER 7, 2023

Key Note Lecture – Chair: Stefano Menegatti		
08:30	**Arne Staby** Novo Nordisk	Latest developments in the implementation of modelling tools in the biopharmaceutical industry
Session 6: mAbs – Chair: Stefano Menegatti		
09:10	**Mariachiara Conti** Univ. of Edinburgh	Porous platform ink for fast and high resolution 3D printing of stationary phases for affinity chromatography
09:30	**Ines Zimmermann** TU Munich	Selective antibody capture using low-cost magnetic particles in an automated high-gradient magnetic separator
	Malin Jönsson KTH Royal Institute of Technology	Mild purification of antibody fragments from human and mouse origin
	Igor T.L. Bresolin Federal Univ. of São Paulo	Precipitation of monoclonal antibodies with polyethylene glycol and zinc chloride: process performance and rheological behavior
	Daria Omralinov TU Darmstadt	3D Printed Stationary Phases: The Future of Chromatography?
09:50	**Dan Pham** TU of Denmark	Novel multi-modal salt-tolerant cation-exchange membrane applied for the purification of a single-chain variable fragment produced in Pichia pastoris
10:10	**Dorota Antos** Rzeszow University of Technology	PEG-aided precipitation for adjusting acidic variant content in monoclonal antibody pools
10:30	**Abraham Lenhoff** University of Delaware	Understanding and Mitigating Persistence of CHO Host-Cell Proteins in Monoclonal Antibody Bioprocessing

10:50	Refreshment Break	
Session 7: Fundamentals and Modelling – Chair: Cristina Dias-Cabral		
11:20	**Sponsored Talk** **Tatjana Trunzer** Cytiva	A chromatography system modeling strategy for precise in silico process scaling
11:40	**Giorgio Carta** Univ. of Virginia	Detective Stories in Chromatography: the Inseparable Pair, the Missing Peak, and the Gang of Three
12:00	**Lukas Gerstweiler** Univ. of Adelaide	Model based process optimisation of an industrial chromatographic process for separation of lactoferrin from bovine milk
12:20	**Marcel Ottens** TU Delft	Digital Twins for High Throughput Chromatographic Process Development
12:40	**Christian Frech** Hochschule Mannheim – University of Applied Sciences	Mechanistic modeling of cation exchange chromatography scale-up considering packing inhomogeneities
13:00	Lunch Break	
14:15	**Poster Session**	
Session 8: Protein Separations – Chair: Markus Berg		
15:20	**Sobhana Alekhya Sripada** North Carolina State University	"Flow-through Affinity Chromatography": a transformative approach to remove persistent and high-risk host cell proteins in Biomanufacturing
15:40	**Nico Lingg** acib GmbH **Daniel Elsner** Boehringer Ingelheim RCV	CASPON – a platform process for non-platform proteins
16:00	**Matthias Müller** BOKU Vienna	Purification of recombinantly produced Somatostatin-28 comparing hydrochloric acid and polyethylenimine as *E. coli* extraction aids
16:20	**Ana Cecilia Roque** Nova School of Science and Technology	A scalable method to purify reflectins from inclusion bodies
16:40	**Preeti Saroha** Indian Institute of Technology Delhi	Production of bioactive recombinant monoclonal antibody fragment in periplasm of *E. coli* expression system
	Milan Polakovic Slovak Univ. of Technology	Single-pass diafiltration using a double-membrane module
	Ales Podgornik Univ. of Ljubljana	Determination of immobilized proteins via pH transition method
	Oliver Spadiut TU Vienna	A Peroxidase from Inclusion Bodies as valuable Tool in Breast Cancer Treatment
17:00	End of session	
18:30	Conference Dinner at Ottakringer Brewery	

WEDNESDAY, NOVEMBER 8, 2023

Session 9: Particle Analytics – Chair: Patricia Pereira Aguilar		
09:00	**Christian Hill** Medical University of Graz	"Optofluidic Force Induction (OF2i) - a BRAVE new way in time-resolved particle characterization"
09:20	**Roland Drexel** Postnova Analytics GmbH	Multi-detector Field-Flow Fractionation for quality assessment of nano-sized drug delivery systems
09:40	**Leo Jakob** Acib GmbH	Accelerating Virus-Like Particle Downstream Process Development Using Asymmetric Flow Field-Flow Fractionation (AF4)
	Ricardo Silva iBB - Institute for Bioengineering and Biosciences	Anion exchange chromatography for extracellular vesicles purification
	Rashmi Sharma Indian Institute of Technology, Delhi	Downstream Process Development for intact Virus-Like Particles (VLPs) from yeast expression system Pichia pastoris
	Jorge João Instituto Superior Técnico - Universidade de Lisboa	Downstream processing of non-viral protein nanocages for biotechnological and biomedical applications: development of chromatography-based purification strategies
10:00	**Christoph Gstoettner** Leiden University Medical Center	Novel Approaches for recombinant AAV genome and capsid characterization
10:20	Refreshment Break	
Session 10: Particle Separations – Chair: Dan Bracewell		
10:45	**Shuichi Yamamoto** Yamaguchi University	Process modelling of chromatography of bio-nanoparticles based on linear gradient elution data
11:05	**Rebecca Hochstein** 3M	Advanced Approaches to Gene Therapy Viral Vector Separations
11:25	**Rita Fernandes** Ibet	Development of a robust workflow for purification of a fusogenic oncolytic virus
11:45	**Patricia Pereira Aguilar** acib GmbH	Functionalized non-woven fibers for purification of large labile enveloped viruses
12:05	**Stefano Menegatti** North Carolina State University	Novel affinity ligands for Adenoassociated virus (AAV) and Lentivirus (LV) purification
12:20	Presentation of Poster Awards and Concluding Remarks	
12:35	End of conference	

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