

13th International Conference Analytical Cytometry

4.-7. 10. 2025
Hotel GALANT, Mikulov
Czech Republic



program

www.conference.csac.cz

SCIENTIFIC PROGRAM

Saturday, October 4, 2025

AURELIUS HALL

ÚVODNÍ PŘEDNÁŠKA KONFERENCE | CZ

Chair: Karel Souček, Brno, CZ

18:30–19:00

PL-1 **Data k vašim službám: 10 let budování Národního zdravotnického informačního systému**
Ladislav Dušek, Brno, CZ

19:00 **Welcome drink**

(Conference foyer / Exhibition area)

Sunday, October 5, 2025

AURELIUS HALL

9:00–15:20 PLENARY SESSION

Chairs: Karel Souček, Brno, CZ, Veronika Niederlová, Prague, CZ

9:00–9:10

Opening
Karel Souček, Brno, CZ

9:10–9:45

PL-2 **Decoding the regulation of human T cells in health and disease - cytotoxicity revisited**
Christina Zielinski, Leibniz, DE

9:45–10:20

PL-3 **Dissecting anti-tumor immunity in the leptomeninges one cell at a time**
Ján Remšík, Leuven, BE

10:20–10:55 **Coffee break**

Chairs: Vítězslav Bryja, Brno, CZ, Vendula Hlaváčková Pospíchalová, Brno, CZ

10:55–11:30

PL-4 **Uncovering DNA replication dynamics through high-content imaging**
Hana Polášek-Sedláčková, Brno, CZ

11:30–12:05

PL-5 **Pushing the limits: small particle flow cytometry 101**
Maximilian Haertinger, Vienna, AT

12:05–12:40

PL-6 **Harnessing the tumor microenvironment to enable cancer control**
Hind Medyouf, Frankfurt, DE

12:40–14:00 **Lunch break / Lunch workshops**

Chairs: Tomáš Kalina, Prague, CZ, Ondřej Pelák, Prague, CZ

14:00–14:35

PL-7 **Regulation of cell death programs in human B cells**

Julian Staniek, Freiburg, DE

14:35–15:10

PL-8 **Proteomic and transcriptomic assessment of innate and adaptive responses: from mouse to human**

Robert Balderas, San Francisco, CA, USA

Chairs: CSAC board

15:10–15:30

Award for the best original scientific publications in cytometry (2024)

15:30–16:00 **Coffee break**

16:00–17:00

Annual Members' Meeting – Czech Society for Analytical Cytometry

Karel Souček, President of the Czech Society for Analytical Cytometry

Sunday, October 5, 2025

CABERNET HALL

17:00–18:00 **CYI SESSION ON CAREER DEVELOPMENT**

Chair: Veronika Niederlová, Prague, CZ

17:00–18:00

CYI-1 **Panel discussion**

Tomáš Kalina, Prague, CZ

Hind Medyouf, Frankfurt, DE

Hana Polášek-Sedláčková, Brno, CZ

Christina Zielinski, Leibniz, DE

Sunday, October 5, 2025

FOYER

18:00–19:00 **POSTER SESSION I**

Poster walk for authors of odd-numbered posters (P1, P3, P5 ...)

The poster session program can be found on pages 25–33.

We ask the authors to be present at their posters at least from 18:00 to 19:00.

20:00–24:00 **Social evening**

Wine cellar, Brewery & Cabernet hall

9:00–10:10 PLENARY SESSION | CLINICAL CYTOMETRY

Chairs: Tomáš Jelínek, Ostrava, CZ, Ondřej Hrušák, Prague, CZ

9:00–9:35

- PL-9** Computational (clinical) cytometry: the why and how of data preprocessing
Sarah Bonte, Ghent, BE

9:35–10:10

- PL-10** Integrating cell biology and immunology to dissect CD8+ T cell-mediated immunity
Jens V. Stein, Fribourg, CH

10:10–13:00 CLINICAL CYTOMETRY

Chairs: Tomáš Jelínek, Ostrava, CZ, Ondřej Hrušák, Prague, CZ

10:10–10:30

- CC-1** Proton radiotherapy and lymphocyte dynamics in head and neck cancer
Iva Benešová, Prague, CZ

10:30–10:50

- CC-2** Interpretative validation of flow cytometry in integrative diagnostic haemato-oncology
David Starostka, Havířov, CZ

10:50–11:10

- CC-3** Monitoring of CAR T cells and non-CAR T immune subsets with standardized 8-color flow cytometry panel utilizing dry reagents
Ondřej Venglář, Ostrava, CZ

11:10–11:40 Coffee break

Chairs: Marcela Hortová Kohoutková, Brno, CZ, Jolana Vosáhllová, Vestec, CZ

11:40–12:00

- CC-4** Long-Term Impact of Pediatric Sepsis on Immune Function: Immunophenotypic and Metabolic Shifts in Myeloid Cells.
Jan Frič, Brno, CZ

12:00–12:20

- CC-5** Novel EuroFlow quality assessment on B-cell precursor acute lymphoblastic leukemia minimal residual disease. Program development and four rounds of implementation.
Michaela Reiterová, Prague, CZ

12:20–12:40

- CC-6** Selective depletion of B-cell lineage subsets during treatment with anti-BCMA vs anti-GPRC5D bispecific antibodies (bsAbs) underlies different risk of infections in patients with multiple myeloma (MM)
David Zihala, Ostrava, CZ

12:40–13:00

CC-7 **Peripheral blood immune profiling reflects esophageal inflammation in pediatric patients suffering from eosinophilic esophagitis**

Zuzana Tomášiková, Brno, CZ

13:00–14:30

Lunch break / Lunch workshops

CYI: Mikulov City Hunt

14:30–15:50 **EDU SESSION / EN**
CLINICAL CYTOMETRY

Chairs: Veronika Kanderová, Prague, CZ, Marcela Vlková, Brno, CZ

14:30–14:50

E-CC-1 **How to prepare material other than blood and bone marrow for reliable flow cytometry analysis?**

Daniel Thurner, Prague, CZ

14:50–15:20

E-CC-2 **Preparation of single-cell suspensions from solid tissues for reliable flow cytometry analysis**

Zuzana Kahounová, Brno, CZ

15:20–15:50

E-CC-3 **Advanced immunophenotyping of peripheral blood leukocytes**

Aleš Efenberk, Vestec, CZ

15:50–16:30

Coffee break

16:30–17:20 **EDU SEKCE / CZ**
KLINICKÁ CYTOMETRIE, DISKUZE

Chairs: Veronika Kanderová, Prague, CZ, Lucie Říhová, Brno, CZ

16:30–16:45

E-KC-1 **Populace a subpopulace lymfocytů v klinické imunologické laboratoři – jejich využití v praxi a návaznost na digitalizaci ve zdravotnictví**

Karolína Jankovičová, Hradec Králové, CZ

16:45–17:00

E-KC-2 **NČLP and its use in flow cytometry of haemato-oncological examinations**

Vladimíra Řezáčová, Hradec Králové, CZ

17:00–17:20

E-KC-3 **Reference limits for clinical cytometry**

Veronika Kanderová, Prague, CZ

10:10–11:10 IMAGING CYTOMETRY

Chairs: Vítězslav Bryja, Karel Souček, Brno, CZ

10:10–10:30

IC-1 Quantitative analysis of B-cell migration: From phenotype to molecular mechanisms

Štěpán Čada, Brno, CZ

10:30–10:50

IC-2 Sphingosine 1-phosphate receptor-1 controls T cell mechanosensitivity

Eliška Miková, Vestec, CZ

10:50–11:10

IC-3 Quantitative AI-based DNA fiber (qAID) workflow using scanR high-content imaging system

Paolo Fagherazzi, Brno, CZ

11:10–11:40 Coffee break

**11:40–15:50 EDU SESSION / EN
CYTOMETRY BASICS**

Chairs: Ondřej Pelák, Jozef Janda, Jan Svoboda, Prague, CZ

11:40–12:20

E-CB-1 Basic principles of flow cytometry

Jan Svoboda, Prague, CZ

12:20–12:40

E-CB-2 Fluorochromes and their spectral properties

Jan Musil, Prague, CZ

12:40–13:00

E-CB-3 Compensation & Unmixing

Ondřej Pelák, Prague, CZ

**13:00–14:30 Lunch break / Lunch workshops
CYI: Mikulov City Hunt**

14:30–14:50

E-CB-4 Controls for building a successful flow cytometry experiment

Antonín Ptáček, Prague, CZ

14:50–15:20

E-CB-5 Flow cytometry data analysis: unveiling the journey from gates to graphs

Ioanna Papatheodorou, Brno, CZ

15:20–15:35

E-CB-6 Sample preparation for flow cytometry

Jozef Janda, Prague, CZ

15:35–15:50

E-CB-7 Basic principles of cell sorting

Matyáš Šíma, Brno, CZ

15:50–16:30 *Coffee break*

Monday, October 6, 2025

SAUVIGNON HALL

11:40–13:00 EXTRACELLULAR VESICLES

Chairs: Vendula Hlaváčková Pospíchalová, Gabriela Ambrožová, Brno, CZ

11:40–12:00

EV-1 Getting to know extracellular vesicles: Between promise and pitfalls

Vendula Hlaváčková Pospíchalová, Brno, CZ

12:00–12:20

EV-2 Absolute quantification of nanoparticles by optical microscopy and deep learning: A simple yet powerful tool for nanoparticle analysis

Antonín Hlaváček, Brno, CZ

12:20–12:40

EV-3 Development of a universal chemically-defined medium for the analysis of „stressed“ bacterial EVs in the context of undernutrition

Agnieszka Razim, Wrocław, PL

12:40–13:00

EV-4 Macrophage EVs: Transporters of pro-inflammatory cargo

Gabriela Ambrozova, Brno, CZ

13:00–14:30 *Lunch break / Lunch workshops*

CYI: Mikulov City Hunt

14:30–17:00 SINGLE CELL BIOLOGY AND OMICS

Chair: Vítězslav Bryja, Brno, CZ

14:30–14:50

SBO-1 Bridging two worlds: merging flow cytometry with single-cell RNA-sequencing

Pavel Abaffy, Vestec, CZ

14:50–15:10

SBO-2 Composition and fitness of T and NK cells in extramedullary myeloma tumor microenvironment

Anjana Anilkumar Sithara, Ostrava, CZ

15:10–15:30

SBO-3 Regeneration-initiating cells identified in xenopus tail regrowth: Insights into tumor plasticity and microenvironmental remodeling
Radek Sindelka, Vestec, CZ

15:30–15:50

SBO-4 Manipulating effector and memory fates in CD8+ T Cells: A novel Tpm transitional state and the role of TGF- β
Veronika Niederlová, Prague, CZ

15:50–16:30 *Coffee break*

16:30–16:45

SBO-5 Lineage switching in pediatric acute lymphoblastic leukemia resolved by single-cell multi-omics
Jan Stuchly, Prague, CZ

16:45–17:00

SBO-6 ROR-1+ B cells from peripheral blood comprise atypical B cell population that potentially represents precursors of the malignant clone in chronic lymphocytic leukaemia
Antónia Mikulová, Brno, CZ

17:00–18:00 **SINGLE CELL OMICS ROUND TABLE**

Chair: Vítězslav Bryja, Brno, CZ

Introduction of facility/highlights

Lukáš Valihrach, Vestec, CZ

Boris Tichý, Brno, CZ

Monday, October 6, 2025

FOYER

18:00–19:00 **POSTER SESSION II**

Poster walk for authors of even-numbered posters (Posters P2, P4, P6 ...)

The poster session program can be found on pages 25–33.

We ask the authors to be present at their posters at least from 18:00 to 19:00.

19:30

CYI: Pub kvíz

Hotel GALANT Restaurant

9:00–12:20 EXPERIMENTAL CYTOMETRY

Chairs: Ondřej Štěpánek, Veronika Niederlová, Prague, CZ

9:00–9:20

EC-1 FAM83H/SACK1H shapes thymic stromal architecture and postnatal lymphopoiesis via CK1 interaction

Jana Balounova, Prague, CZ

9:20–9:40

EC-2 CD molecules nomenclature 2025: Antibody validation and expression profiling of immune system G protein-coupled receptors (GPCRs)

Daniela Kužílková, Prague, CZ

9:40–10:00

EC-3 Immunogenicity of RSV vaccine in lung transplants

Aneta Skotnicová, Prague, CZ

10:00–10:20

EC-4 T-MAPS: Novel surface markers for measurable residual disease monitoring in pediatric T-cell acute lymphoblastic leukemia

Adela Vavrova, Prague, CZ

10:20–10:40

EC-5 Changes in bone marrow niche during sepsis investigated using iPSC-derived bone marrow organoids

Michal Santocki, Brno, CZ

10:40–11:10 Coffee break

Chairs: Alena Hyršlová Vaculová, Lukáš Kubala, Brno, CZ

11:10–11:30

EC-6 Systemic administration of hyaluronic acid: pharmacokinetics and therapeutic potential in rheumatoid arthritis

Daniela Rubanová, Brno, CZ

11:30–11:50

EC-7 LPS triggers ER stress-mediated hybrid EMT in human expandable lung epithelial cells

Türkan Portakal, Brno, CZ

11:50–12:10

EC-8 Understanding the role of desmoglein 2 in preserving the epithelial phenotype of breast cancer cells

Karel Souček, Brno, CZ

12:10–12:20 Discussion

12:20–12:50 CLOSING CEREMONY / POSTER AWARDS

*Chairs: Karel Souček, Brno, CZ, Veronika Niederlová, Prague, CZ,
Tomáš Jelínek, Ostrava, CZ*

Tuesday, October 7, 2025

CABERNET HALL

9:00–12:20 BOTANY AND ZOOLOGY

Chairs: Petr Bureš, Brno, CZ, Tomáš Urfus, Prague, CZ

9:00–9:20

- B-1** **Divergent trajectories of genome evolution: The impact of centromere drive on shaping genome architecture, species richness and competitiveness of ferns and angiosperms**
Petr Bureš, Brno, CZ

9:20–9:40

- B-2** **Genome size of bulbous monocots in the northern cradle of their diversity: patterns, gaps and challenges**
Michal Hroneš, Olomouc, CZ

9:40–10:00

- B-3** **Using flow cytometry to explore the Boraginaceae family? Challenge accepted.**
Lucie Kobrlová, Olomouc, CZ

10:00–10:20

- B-4** **Endopolyploidy is negatively correlated with genome size in karyologically uniform tomatoes**
Vladislav Kolarčík, Košice, SK

10:20–10:40

- B-5** **Methodological aspects of using flow cytometry to sample ploidy levels over the whole flora of multiple sites**
Petr Koutecký, České Budějovice, CZ

10:40–11:10 Coffee break

11:10–11:30

- B-6** **Endopolyploidy in natural populations of diploid plants and their polyploid relatives**
Jaroslav Rohel, Brno, CZ

11:30–11:50

- B-7** **Flow cytometric karyotyping of wheat-aegilops addition lines facilitates dissection of Ae. biuncialis and Ae. geniculata genomes into individual chromosomes**
Mahmoud Said, Olomouc, CZ

11:50–12:10

- B-8** **Advantages of endopolyploidy over polyploidy**
Petr Šmarda, Brno, CZ

12:10–12:20 Discussion

9:00–12:20 NEW METHODS AND DATA ANALYSIS

Chair: Ondřej Pelák, Prague, CZ

9:00–9:20

NM-1 Tvbilindi algorithm identifies branching developmental trajectories of human B cell development and describes abnormalities in RAG-1 and WAS patients

Tomáš Kalina, Prague, CZ

9:20–9:40

NM-2 The journey from vasculature to (Micro)fluidic-based in vitro models

Jan Vítěček, Brno, CZ

9:40–10:00

NM-3 Innovation and practical potential of gH2AX detection by flow cytometry

Lenka Andrejsová, Hradec Králové, CZ

10:00–10:20

NM-4 How we use TCR/BCR sequencing data to track the fate of individual lymphocytes

Ondřej Štěpánek, Prague, CZ

10:20–11:10

Coffee break

11:10–11:30

NM-5 Dysregulated neutrophil mobility and granulopoiesis as a long-term signature of post-acute sequelae of COVID

Ioanna Papatheodorou, Brno, CZ

11:30–11:50

NM-6 ImmunoMMap: Insights into immune and genomic alterations underlying the resistance to bispecific antibodies in multiple myeloma by high dimensional full spectrum cytometry and exome sequencing

Ondřej Venglář, Ostrava, CZ

11:50–12:10

NM-7 Clustering vs. gating in high-dimensional cytometry: Practical evaluation using a 22-color mouse panel

Michaela Simova, Prague, CZ

12:10–12:20

Discussion