

11th International Conference Analytical Cytometry

October 2-5, 2021
Clarion Congress Hotel Ostrava



SATURDAY, October 2, 2021

SAPHIRE HALL	
Chairs: Karel Souček, Marcela Vílková	
18:30	OPENING LECTURE Ostrava-Vitkovice 1800-2000: from the "Steel City" (Jules Verne) to Know-it-nothing's City on the Moon (Nikolai Nosov) Martin Jemelka
19:00	Welcome drink

program

SUNDAY, October 3, 2021

scientific program			hands-on workshops		
SAPHIRE HALL	GOLD HALL	DIAMANT HALL	SILVER HALL BD + Beckman Coulter	DIAMANT HALL Corner 1: ACCELA	DIAMANT HALL Corner 2: I.T.A. Intertact
Chairs: Karel Souček, Marcela Vílková					
9:00	Opening Karel Souček, Tomáš Jelínek, Tomáš Kalina				
9:10	Casein kinase 1 as a therapeutic target in leukemias: from mechanism to inhibitors and back Vítězslav Bryja				
9:45	Illuminating metabolism of rare cell populations under physiological conditions using SCENITH Rafael J. Argüello				
10:20	Coffee break ☕				
Chairs: Tomáš Kalina, Jelana Vesáhlavá					
10:55	Multiparameter flow cytometry for precise diagnosis and monitoring of acute lymphoblastic leukemia Tomasz Szczepanski				
11:30	CAR T cells for cancer therapy Claudia Rössig				
12:05	Follow-up of multiple myeloma after therapy: advantages and limitations of BM versus blood monitoring Alberto Orfao				
12:40	Lunch 🍴				
Chairs: Radek Fedr, Ondřej Pelák					
14:00	Flow cytometry and single-cell transcriptomics: much more than a marriage of convenience Vladimír Beneš				
14:35	CDMaps - mapping all CD markers on leukocytes' subsets Tomáš Kalina				
15:10	Flow cytometry analysis in vaccines and therapeutics development Andrey Tchobanov				
15:45	Coffee break ☕				
Chairs: Tomáš Jelínek, Lucie Řihová					
16:15	Thymic cellular machinery for antigen presentation involved in T cell selection Dominik Filip				
16:50	Keys for the development of high resolution 40-color flow cytometry assays María Jaimes				
17:25	Poster session I Authors of odd-numbered posters are present (Posters 1, 3, 5 ...)				

Poster viewing

TUESDAY, October 5, 2021

scientific program			hands-on workshops		
SAPHIRE HALL	GOLD HALL	ANTRACIT HALL	SILVER HALL BD + Beckman Coulter	DIAMANT HALL Corner 1: ACCELA	DIAMANT HALL Corner 2: I.T.A. Intertact
PLENARY SESSION					
Chairs: Marcela Vílková, Karel Souček					
8:30	Awards (publications, posters) CSAC society meeting				
HEMATOLOGY		MICROFLUIDICS	DATA ANALYSIS		
Chairs: Ondřej Hrušák, Jan Musil		Chair: Zbyněk Prokop	Chairs: Karel Fíšer, Radek Fedr		
9:00	Concept of highly sensitive 12-color flow cytometry for detection of clonal plasma cells in multiple myeloma Lucie Řihová	9:00 Microfluidic chip as a tool for uniform generation of spheroids Josef Jaroš	9:00	Flow-sorted mitotic chromosomes as a tool to uncover their 3D architecture Petr Cápál	9:00 Beckman Coulter CytoFLEX SRT - automated bench top cell sorter
9:20	Prognostic significance of circulating plasma cells in newly diagnosed multiple myeloma: Czech validation cohort Tomáš Jelínek	9:25 In vitro fluidic models to study cardiovascular diseases Jan Viteček	9:25	Bivariate flow cytometry of wheat-aegilops addition lines facilitate dissecting the genomes of Ae. geniculata and Ae. biuncialis into individual chromosomes Mahmoud Said	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments
9:40	Chronic inflammation decreases HSC fitness via hyperactivation of the druggable IL-6/STAT3 signaling pathway Srdjan Grusanovic	9:50 Discovery of new biocatalysts accelerated by microfluidics Michal Vašina	9:50	Multidimensional scaling using flowSOM: workflow and case study Marco De Ziani	Spectral flow cytometry session: Get to know our new Cytelk Automated Sample Loader and SpectroFlo 3.0 software
10:00	Dysregulation in TLR8 and TLR7 signaling leads to autoimmune hemolytic anemia and autoinflammation in identical male twins Martina Fejtková	10:15 Convolutional neural networks for automated counting of single photon-upconversion nanoparticles in microfluidic chips Antonín Hlaváček	10:15	Unsupervised automated population detection and immunophenotypisation of acute lymphoblastic leukaemia cytometric data Tereza Podolská	FCS Express - bridging the gap between cytometry data and results
10:20	Coffee break ☕				
11:00	Influence of N-acetylglucosaminyltransferase 14 on surface galactose deficient IgA1 expression Jana Jemelkova	11:00 Analysis of bacteriophage-host interaction by Raman Tweezers Zdeněk Pilař	11:00	Using cross-stain index to assess spreading error in spectral flow cytometry Jozef Janda	Beckman Coulter CytoFLEX family - sensitivity and high resolution in your hands
11:20	Comprehensive immunomonitoring of patients after hematopoietic stem cell transplantation Šárka Vaníková	11:20 Raman microspectroscopic analysis of selenium bioaccumulation by Green Alga Chlorella Vulgaris Martin Krizovský	11:20	Using artificial intelligence and imaging flow cytometry to analyze micronucleus assay Jozef Janda	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments
11:40	Blinatumomab has broad effect on cell composition during B-cell precursor leukemia therapy Michaela Nováková	11:40 Plasmon-enhanced optical force aggregation of gold nanorods and SERS in microfluidic chip Silvie Bernátová			
12:00	Limited efficacy of daratumumab in multiple myeloma with extramedullary disease Tomáš Jelínek				
Chairs: Karel Souček, Tomáš Jelínek, Tomáš Kalina					
12:20	Closing				
12:30	Lunch 🍴				

PLATINUM PARTNERS

BD, BECKMAN COULTER Life Sciences, SANOFI, ACCELA

SILVER PARTNERS

Takeda, BIOHEM, janssen, Colgene | Bristol Myers Squibb Company

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scientific program			hands-on workshops			
SAPPHIRE HALL	GOLD HALL	ANTRACIT HALL	DIAMANT HALL	SILVER HALL BD + Beckman Coulter	DIAMANT HALL Corner 1: ACCELA	DIAMANT HALL Corner 2: I.T.A. Intertact
CELL BIOLOGY: SINGLE CELL AND SEQUENCING			EDU SESSION (CZ) - ZÁKLADY CYTOMETRIE 1			
Chair: Vitězslav Brjjo	Chairs: Jan Friš, Lukáš Kubala	Chairs: Jozef Janda, Jan Svoboda				
8:30 Multiomic cytometry - cytometry at true resolution: resolving complex biology with single cell multiomics Agnieszka Ciesielska	8:30 Human myeloid-derived suppressor cell expansion during sepsis is revealed by unsupervised clustering of flow cytometric data Marco De Zuani	8:30 Fluorescence a fluorochromy Miroslav Benko		8:30 Beckman Coulter CytoFLEX family - sensitivity and high resolution in your hands		
8:50 B cell developmental trajectory modeling - using complex immunophenotype to identify pre-malignant CLL B cell subsets in peripheral blood of healthy donors Pavlna Janovská	8:50 Accelerated aging of immune cells in childhood and adolescent cancer survivors - clinical phenomenon and search for molecular mechanism Petra Lázníčková	8:50 Základní principy: Fluidika, optika a elektronika Jan Svoboda		8:50		
9:10 Single-cell RNA sequencing analysis of T cell differentiation and transdifferentiation mechanisms Radim Jaroušek	9:10 Immunometabolic status of activated human monocytes is altered by immunosuppressives Marcela Hartová Kohoutková	9:10 Pokročilé principy: Laser delay, window extension a škálování Jan Svoboda		9:10 BD Total spread matrix - an optimized method for accurate spread measurement and its use in panel design	NanoView: Purification-free characterization of extracellular vesicles and viruses	Infinicyt: What clinical information can I obtain from an MM MRD report?
9:30 Analysis of tissue infiltrating T cells by single cell transcriptomics Juroj Michálik	9:30 Cytokine-antibody single-chain fusions for cancer immunotherapy Jakub Tomala	9:30 Cytometrická data Jiří Šinkora		9:30 Beckman Coulter Reagents - Duraclone Dry ready to use cocktails and SuperNova polymer dyes	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments	Spectral sorting session: Full Spectrum Profiling (FSP) let you see it, now Aurora CS (Cell Sorter) will let you sort it!
9:50 Data mining of publicly available scRNA-seq datasets: application of machine learning to interrogate normal cellular counterparts of chronic lymphocytic leukemia Petr Tauš	9:50 A diagnostic conundrum: Identification of a causal mutation in a patient with severe neonatal-onset bowel disease Markéta Racková	10:10 Kompenzace: spillover a spreading Jan Musil		10:10		
10:10 Research oriented tool for computer assisted dissection of developmental pathways in large single-cell datasets Jan Stuchlý	10:10 Lung fibrosis, ionizing radiation and biodegradable hyaluronan nanoparticles Anna Lierova					
10:30 Coffee break ☕						
CELL BIOLOGY: SIGNALING			EDU SESSION (CZ) - ZÁKLADY CYTOMETRIE 2			
Chair: Karel Souček	Chairs: Tomáš Kalina, Michaela Nováková	Chairs: Jozef Janda, Jan Svoboda				
11:00 Mass cytometry-based phospho-kinase signature in pediatric T-cell acute lymphoblastic leukemia (T-ALL) dissects a dominance of either JAK-STAT or PI3K-AKT-mTOR pathways Daniela Kužilková	11:00 Cytometric findings uncover immunological changes in children with rare complications after SARS-CoV2 infection Ondřej Hrušák	11:00 Sestavení panelu protilátek Jan Musil		11:00 Beckman Coulter CytoFLEX SRT - automated bench top cell sorter	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments	Cell sorting session: Sorting of T-Cells from a heterogeneous population of lyophilized cells
11:20 Flow cytometry assay for the analysis of interaction between recombinant proteins and synthetic membranes: dishevelled binding to synthetic phospholipid vesicles Marek Kravec	11:40 Elevated platelet and endothelial extracellular vesicles in cord blood of pre-term newborns with inflammation Jakub Soukup	11:40 Pokročilé technologie: Spektrální, hmotnostní a zobrazovací cytometrie Jozef Janda		11:20		
11:40 Acute myeloid leukemia regression induced by palbociclib and ponatinib in patient-derived xenograft model Martin Čulen	12:00 Impact of IVD regulation 2017/746 on the European Health Institutions Arantxa Huarriz	12:00 Troubleshooting - všeobecná diskuze Jiří Šinkora		12:30 LUNCH WORKSHOP, Beckman Coulter DxFLEX and Supernova dyes - new shining cytometry stars	LUNCH WORKSHOP Single-cell Polyfunctional Immune Profiling paves the way for successful cellular therapies	LUNCH WORKSHOP, Sony: Advanced Spectral Cell Analysis Using the New ID7000™ System
12:00 Relation between Trop2 and tetraspanins CD9 and CD63 in breast cancer Ondřej Vacek	12:30 LUNCH WORKSHOP, BD How to successfully combine flow cytometry with the multi-omics approach	12:30 Lunch 🍴				
CELL BIOLOGY: CANCER			EDU SESSION (EN) - FACS SORTING 1			
Chair: Vitězslav Brjjo	Chairs: Tomáš Jelínek, Lucie Řihová	Chair: Ondřej Pelák				
14:00 Pre-existing cell subpopulations in primary prostate cancers display surface fingerprint of docetaxel-resistant cells Karel Souček	14:00 MRD monitoring in lymphoid neoplasms: BCP-ALL and MM as a model Alberto Orfao	14:00 Basic knowledge for sorting (key parameters) Jan Svoboda		14:00 Beckman Coulter DxFLEX - flexible clinical flow cytometer	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments	Cell sorting session: sterile, gentle plating of cells for cloning
14:30 Flow cytometry assessment of cervical precancerous lesions Ena Pešut	14:30 MRD evaluation in AML: clinical point of view Zdeněk Kořístek	14:30 Sorting in contrast to analyzers Jiří Šinkora		14:30		
14:50 Flow cytometric analyses of TNFα influence on biology of melanoma and colorectal carcinoma cells Silvia Tybirková	14:45 Flow cytometry evaluation of MRD in AML Marek Borský	14:45 How to deal with and avoid contaminations Ondřej Honc		14:45 Beckman Coulter CytoFLEX family - sensitivity and high resolution in your hands	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments	Spectral flow cytometry session: Creating efficiency in the clinical lab with full spectrum cytometry - Northern Lights CLC (CE IVD)
15:10 Intratumor heterogeneity reflected in circulating tumor cells associates with metastatic phenotype of single circulating tumor cell-derived clones Markéta Pícková	15:00 MRD in CLL: clinical significance and flow cytometry evaluation Martin Špaček	15:00 Dos and don'ts when bringing the sample for sorting to a core facility Matyáš Šima		15:00		
	15:25 MRD evaluation in MM: clinical point of view Jakub Radocha					
	15:40 Next generation flow cytometry in MM MRD Tomáš Jelínek					
15:30 Coffee break ☕						
CELL BIOLOGY: IMAGING			EDU SESSION (EN) - FACS SORTING 2			
Chair: Karel Souček	Chairs: Tomáš Jelínek, Lucie Řihová	Chair: Ondřej Pelák				
16:00 Formation of novel cytoskeletal structures in mef 3T3 cells during interaction with microspheres Olga Adamczyk	16:00 Introduction to CAR-T cells in hematological malignancies František Folber	16:00 Combining Full Spectrum Profiling (FSP) and cell sorting Marta Brewińska-Olchowik		16:00 Beckman Coulter Reagents - Duraclone Dry ready to use cocktails and SuperNova polymer dyes	Hands-on demonstration of BD FACSymphony™ A1, A3, BD FACSLytic™ and BD Rhapsody™ instruments	Imaging flow cytometry session: Detection of Extracellular Vesicles and virus using the Amnis ImageStreamX Mk II
16:20 Fucci cell cycle reporter as a tool for visualization of cell cycle progression and malfunctions Jan Novotný	16:15 Monitoring of CART cell treatment in diffuse large B cell lymphoma Alberto Orfao	16:20 Single cell sorting Vendula Šinkarová		16:00		
16:40 CLL and cell polarity: in vitro analysis of morphology and migration of leukemic lymphocytes Stěpán Čada	16:30 Monitoring of CAR-T cells in B-NHL and ALL Pavel Otáhal	16:40 Mitochondria sorting Alena Keprová				
17:00	17:00	17:00				
			SINGLE CELL & OMICS FACILITIES & USERS WORKSHOP			
			Chairs: Vitězslav Brjjo, Karel Souček			
			17:30 Michal Kolář, IMG CAS			
			17:40 Boris Tichý, CEITEC MU			
			17:50 Pavel Aboffý, Biocev			
			18:00 Vladimír Beneš, EMBL			
			18:10 Marcela Buchtová, IACH CAS			
			18:20 Jan Křivánek, Masaryk University			
			Poster session II Authors of even-numbered posters are present (Posters 2, 4, 6 ...)			

Poster viewing