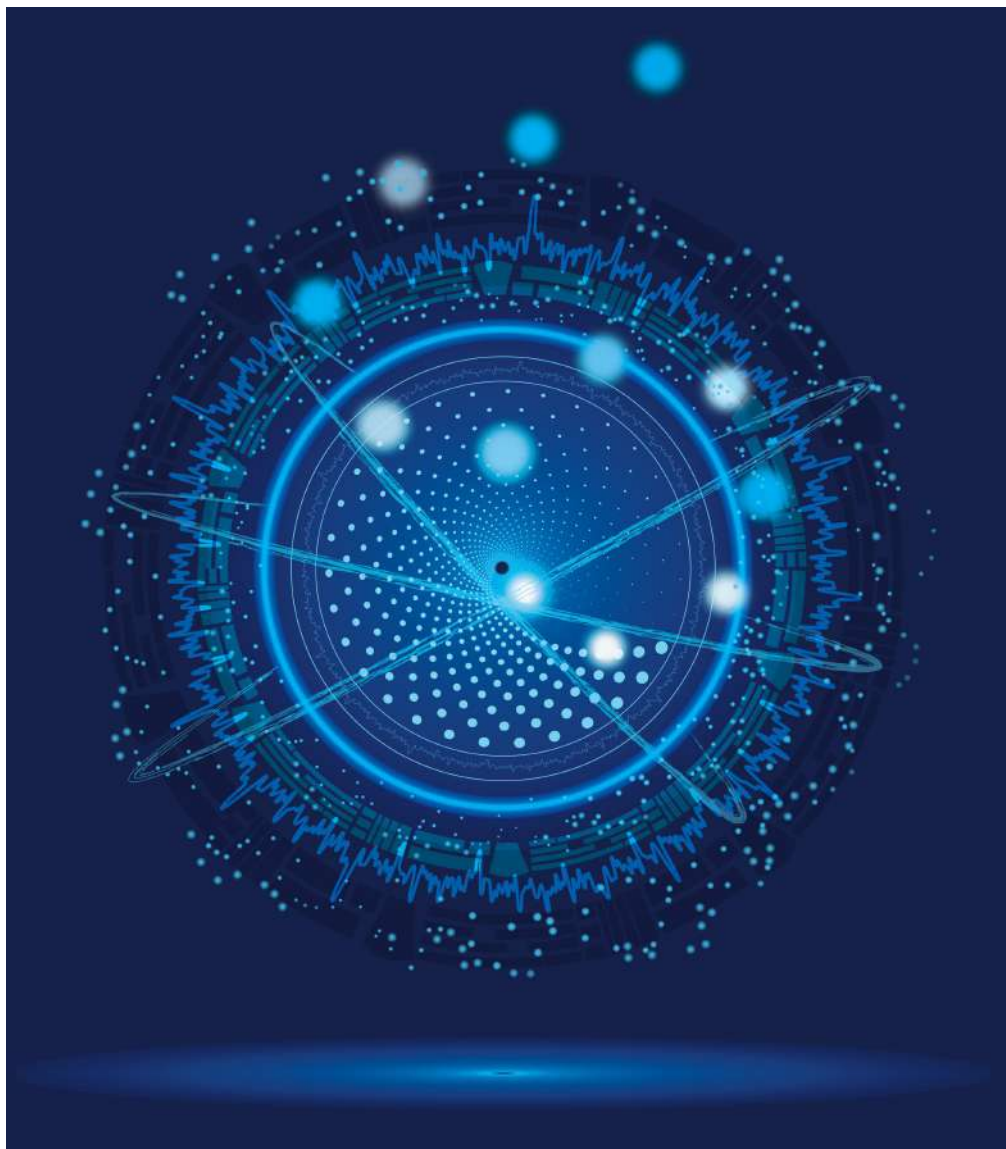


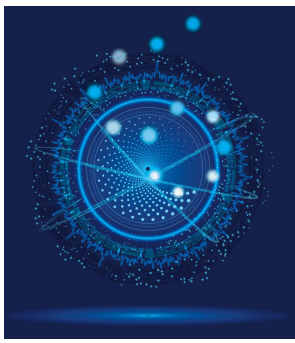
Small New World 2.0

4-5 September 2023

Abstract Book



Medical University Graz, Austria



Small New World 2.0

4-5 September 2023., Graz, Austria

Joint Meeting of



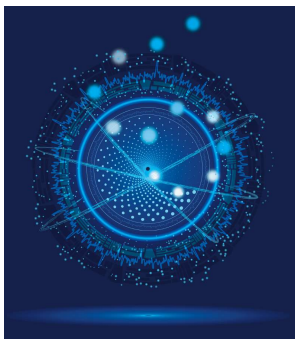
Austrian Society for Extracellular Vesicles - ASEV
Hungarian Section for Extracellular Vesicles - HSEV
Slovenian Network for Extracellular Vesicles - SiN-EV
Serbian Society Extracellular Vesicles - SrbEVs

Organizing committee:

Beate Rinner, ASEV
Wolf Holnthoner, ASEV
Edit Buzas, HSEV
Metka Lenassi, SiN-EV
Maja Kosanović, SrbEVs

Scientific committee:

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Wolf Holnthoner, Ludwig Boltzmann Institute for Traumatology, Austria;
Edit Buzas, Semmelweis University, Hungary;
Metka Lenassi, Faculty of Medicine, University of Ljubljana, Slovenia;
Maja Kosanović, Institute for the Application of Nuclear Energy, INEP, Serbia;
Zoltan Giricz, Semmelweis University, Hungary;
Bernd Giebel, Institute for Transfusion Medicine, University Hospital Essen, Germany



Small New World 2.0

4-5 September 2023., Graz, Austria

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PROGRAM

for Monday, 4th September 2023

8:30 - 10:00	Registration and poster placement												
10:00-10:15	Welcome note from the Presidents of ASEV, HSEV, SiN-EV, SrbEV Welcome note from the local organizers & organizational introduction												
10:15-12:00	EV therapeutics - regenerative medicine and beyond Chairs: Wolf Holnthoner (Austria) + Zala Jan (Slovenia)												
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12:00-13:30 Lunch break / General assembly of ASEV													
13:30-15:00	Methodology advances in EV analysis Chairs: Beate Rinner (Austria) + Sofija Glamočlija (Serbia)												
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15:00-15:30 Coffee break													

PROGRAM

for Monday, 4th September 2023

15:30-16:40	News from industry and development - "Rising projects" Chairs: Dirk Strunk (Austria) + Pia Siljander (Finland)	
	Clemens Helmbrecht ParticleMetrix	NTA goes colocalization: Characterization of Multi-labelled bionanoparticles
	Mehdi Madi and Quentin Lubart Abbelight	Quantitative analysis of single EV and their subpopulations with super-resolution solutions
	Core Facilities MedUni Graz	EV technologies at the MedUni Graz
	BioTechMed consortium "iNterAcD+"	Extracellular vesicle in exercise: sporty messengers in interorgan communication
	Christian Wadsack and Michaela Klaczynski	Fetal immune priming by placenta-derived small extracellular vesicles
	Beate Rinner and Mariangela Garofalo	Patient-derived tumor models, EVs and oncolytic viruses
16:40-16:45	Short break	
16:45-17:30	Special guest lecture: Translation of EV into the clinics - Eva Rohde (Austria)	
17:30-23:00	Poster party and Social evening	

PROGRAM

for Tuesday, 5th September 2023

09:00–10:45	EV numbers and cargo Chairs: Maja Kosanović (Serbia) and Nicole Maeding (Austria)	
	Keynote: Paolo Bergese (Italy)	Extracellular vesicles by the numbers
	Hargita Hegyesi	Cardioprotective role of extracellular vesicle-mediated mir-sponge transfer
	Christa Noehammer	Small RNA biomarker profiling from extracellular vesicles in immune-mediated inflammatory diseases
	Tasvilla Sonallya	Systematic investigation and classification of membrane active peptides based on their affinity for interaction with extracellular vesicles
	Ilona Barbara Csordás	Extracellular Vesicles (EVs) miRNA-cargo loading and alterations after ionizing radiation induced cellular stress
	Marija Holcar	Characterization and Interindividual Variability of Plasma Extracellular Vesicles in Healthy Adults
10:45–11:30	Coffee break	
11:30–12:30	NETWORK SESSION + MOVE Chairs: Beate Rinner and Wolf Holnthoner	
	Wolf Holnthoner	ASEV - Austrian Society for Extracellular Vesicles
	Edit Buzas/Zoltan Giricz	HSEV - Hungarian Society for Extracellular Vesicles
	Metka Lenassi	SiN-EV - Slovenian Network for Extracellular Vesicles
	Maja Kosanović	SrbEVs - Serbian Society for Extracellular Vesicles
	Johannes Oesterreicher	MOVE news from Finland
	Martin Wolf	MOVE news from Sweden
12:30–13:30	Lunch break	

PROGRAM

for Tuesday, 5th September 2023

13:30-15:00	Diversity of EV sources Chairs: Edit Buzas (Hungary) + Djenana Vejzovic (Austria)	
	Keynote: Pieter Vader (The Netherlands)	Extracellular vesicle-mediated RNA delivery: from mechanistic insights towards therapeutic applications
	Astrid Laimer-Digruber	Unraveling the pathogenic and pro-inflammatory potential of extracellular vesicles secreted by <i>Bacillus cereus</i>
	Vendula Pospíchalová	Proteomic analysis of ascitic extracellular vesicles describes tumor microenvironment and predicts patient survival in ovarian cancer
	Kaja Ujčič	Effects of placental extracellular vesicles on maternal hematopoiesis
	Veronika Kralj-Iglič	Mechanisms of formation of extracellular particles in diverse samples from human, animal, plant and microalgae
15:00-15:30	Coffee break	
15:30-17:00	Purity meets function Chairs: Metka Lenassi (Slovenia) + Krisztina Nemeth (Hungary)	
	Keynote: Saara Laitinen (Finland)	To EV, or not to EV: that is the question
	Martin Wolf	Functional implications of protein EV corona
	Johannes Grillari	EV therapeutics - regenerative medicine and beyond
	Maria Cavinato	Alternative mechanisms of mitochondria quality control elicited by EVs in skin aging and disease
	Irma Schabussova	Outer membrane vesicles of the probiotic <i>E. coli</i> O83 activate innate immunity and prevent allergic airway inflammation in mice
17:00-17:15	Awards: Best poster & Best oral presentation Farewell notes	
18:00	City tour Graz	



Dear friends and colleagues, working on these tiny bubbles which we call „EVs“,

Last autumn I was – as usually on Sundays – cycling along the Danube in Vienna. While riding my bike many thoughts came into my mind: I recently visited Edit Buzas in Budapest, I was invited by Metka Lenassi for a talk at the annual meeting of the Slovenian Network for Extracellular Vesicles, and I got acquainted and befriended with Maja Kosanović. Consequently I thought it would be a really nice idea to organize a joint annual meeting, bringing our communities from Austria, Hungary, Slovenia and Serbia together. So I asked the board members of the Austrian Society for Extracellular Vesicles, and of course Edit, Metka and Maja, and I was absolutely thrilled that everybody agreed enthusiastically.

So, here we are!

Extracellular Vesicles gained tremendous scientific interest in the last decade. From the basic understanding of the biology, the recent technological advances in the purification and characterization of EVs, straight to the application in diagnostic and therapeutic areas: Here at the Medical University in Graz we come together in the SmallNewWorld2.0 to exchange (and ignite) our thoughts on all these aspects of EVs.

This congress is the continuation of SmallNewWorld 2022, when our colleagues from Salzburg/Austria organized the recent annual meeting together with our sister society from Germany (GSEV). I am really thankful for their great experience, which helped us organizers in all the necessary steps to prepare our joint meeting in 2023 in Graz.

The modern facilities at the Medical University of Graz will for sure be the perfect surrounding and sparkle exchange of the EV research of our communities in Austria, Hungary, Slovenia, Serbia and participants from over 15 countries. Especially young scientists are encouraged to get in contact with experienced researchers and of course with our international keynote speakers. I cordially invite you all to learn from each other.

Together we will not only have fun and learn to know all of us better on a personal level, but also extend our knowledge of these fascinating tiny bubbles.

On behalf of the organizing committee I heartily welcome you here in Graz, and I wish us all an inspiring great time!

A handwritten signature in blue ink, appearing to read 'Wolf Holnthoner'.

Wolf Holnthoner

President of the Austrian Society for Extracellular Vesicles (ASEV)



Exploring the interaction of Outer membrane vesicles (OMVs) produced by *Paraburkholderia phytofirmans* PsJN with *Arabidopsis thaliana* roots

Dragana Nikolić¹; Sofija Nešić¹; Aleksandra Divac Rankov¹; Jelena Samardžić¹; Ana Pantelić¹; Vesna Spasovski¹; Bojana Banović Đeri¹; Maja Kosanović²

¹University of Belgrade, Institute of Molecular Genetics and Genetic Engineering, Laboratory for Plant Molecular Biology, Vojvode Stepe 444a, Belgrade, Serbia; ²University of Belgrade, Institute for the Application of Nuclear Energy, Banatska 31b, 11080 Zemun, Belgrade, Serbia

Outer membrane vesicles (OMVs), extracellular vesicles (EVs) produced by Gram-negative bacteria, are increasingly recognised as promising tools in biomedicine due to their innate ability to interact with human cells and trigger immune responses. The interaction of OMVs of plant growth-promoting bacteria (PGPB) with plants, as well as with plant-pathogenic microorganisms, is far less explored. Considering the great importance of PGPBs for the development of sustainable, environmentally friendly solutions in agriculture, the study of the role of OMVs in PGPB-plant and PGPB-phytopathogen interactions holds valuable application potential.

To investigate PGPB OMVs, we isolated and characterised OMVs produced by *Paraburkholderia phytofirmans* PsJN, a PGPB strain known to enhance plant resistance to various abiotic and biotic stresses. After testing different methods for isolating and purifying OMVs, a commercially available affinity-based column system was selected as the most efficient. Outer membrane origin of isolated OMVs was confirmed using an assay for detection of lipopolysaccharide (LPS).

To examine the interaction of OMVs with plant cells, *Arabidopsis thaliana* roots were incubated with isolated *P. phytofirmans* PsJN vesicles, previously labelled with lipid binding fluorescent dye Vybrant™ DiD. Red signals were observed, under confocal laser scanning microscope, in root hairs and root surface in DiD-OMV treated plants, while in control-treated roots the same signals were missing. The results suggest direct contact of OMVs with root hairs, which are necessary for nutrient acquisition and plant-microbe interactions in rhizosphere. Our further research is focused on the characterization of OMV-associated RNA and its potential delivery into host plant cells.

Publishers:

Serbian Society for Extracellular Vesicles (SrbEVs) with
Austrian Society for Extracellular Vesicles (ASEV),
Hungarian Society for Extracellular Vesicles (HSEV), and
Slovenian Network for Extracellular Vesicles (SiN-EV)

Editors:

Wolf Holnthoner, ASEV;
Edit Buzas, HSEV;
Metka Lenassi, SiN-EV;
Maja Kosanović, SrbEVs

Technical Editor and Design:

Maja Kosanović

ISBN 978-86-905626-0-2

Year: 2023.

Disclaimer: The authors are responsible for the contents
of their abstracts and warrant that their abstract is original.

