On behalf of the

Austrian Society for Extracellular Vesicles

we are pleased to invite you to attend a scientific talk

to be delivered by

Anna Lena Jung

Philipps University Marburg

titled:

Host and bacterial-derived extracellular vesicles in lung infections: the lung's silent messengers

Host: Assoc.Prof. Irma Schabussova
Medical University of Vienna

Zoom link:
https://donau-uni.zoom.us/meeting/register/PRK-5Y3LRzWA1uLhslMEFg

June 25, 2025

Start: 12:00

Meeting-ID: 680 9443 6519

Kenncode: 510495

Dr. Anna Lena Jung is a Junior Research Group Leader at the *Institute for Lung Research* at *Philipps University Marburg*, where she also leads the Core Facility for Bacterial Vesicles. She studied Biomedical Science at Philipps University, where she also obtained her PhD with summa cum laude for her work on *Legionella pneumophila* outer membrane vesicles and their role in host-pathogen interactions.

Her research focuses on intercellular and cross-kingdom communication in lung infections, particularly mediated by extracellular vesicles derived from Gram-negative bacteria and innate immune cells. A major focus of her current work is on *Klebsiella pneumoniae*, a multidrug-resistant ESKAPE pathogen, exploring how EVs influence inflammation, immune evasion, and antimicrobial resistance.

Abstract: In this talk, I will share insights from our research on the role of extracellular vesicles (EVs) in pulmonary infections, focusing on EVs released by both host immune cells and bacterial pathogens. A major part of our work centers on *Klebsiella pneumoniae*, a WHO-classified critical ESKAPE pathogen that poses significant

challenges due to its high antimicrobial resistance and immune evasive strategies. We investigate how bacterial and host-derived EVs mediate intercellular and interspecies communication within the infected lung, modulating key immune pathways and contributing to pathogenesis, persistence, or resolution.

Using a combination of clinically relevant infection models, primary patient samples, and advanced EV isolation and characterization technologies, we aim to understand how EV-associated signals influence macrophage responses, cytokine release, and adaptive immune priming. Special attention is given to the role of EVs in the emergence of antimicrobial resistance traits and their impact on disease outcome. Beyond mechanistic insights, I will highlight our recent efforts to translate these findings into clinical applications, including the development of EV-based biomarkers and vaccine strategies targeting multidrug-resistant Gram-negative pathogens.