

Pre-Conference Academic Workshop Sunday 26, 13-14:30

Title: “Extracellular vesicles – from basic biology to production of EVs as novel therapeutics”

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Abstract

Extracellular vesicles have raised a strong interest recently as novel biopharmaceuticals. Thereby, 2 different lines of research and development are crystallizing, on the one hand the use of EVs as therapeutics per se, and on the other their use as drug delivery vehicle.

In regard to their use as complex biopharmaceutical, there is accumulating evidence for therapeutic activity in various disease models including stroke, myocardial infarction, osteoarthritis, or bone regeneration. They even have been used in a human graft versus host disease patient with extremely positive result. It is hypothesized that beneficial effects that were observed in clinical trials using e.g. mesenchymal stem cells (MSCs) might well be due to the secretome of these MSCs as opposed to direct incorporation of allogeneically transplanted MSCs. Considering more than 500 ongoing clinical trials using MSC based therapies, we can envision an ever increasing necessity of production systems for EVs.

Similarly, the use of EVs as drug delivery/targeting vehicles has by now produced promising results in animal models.

In order to give key insights into this fast evolving field, we here apply for a symposium to be held at ESACT2022 in Lisbon, as we see a benefit for all experts in EV based biology and in animal cell culture technology to convene and discuss in order to boost and inspire the respective fields in the quest to produce, purify and finally bring EVs as novel biopharmaceuticals to the patients. Thereby, we will introduce the basic biology of EVs and their isolation and processing; insights into various production processes as well as therapeutic applications.

Keywords Extracellular vesicles, exosomes, mesenchymal stem cells, production, MSC derived EV therapeutics