

Bioengineered Protein Delivery onto and into Extracellular Vesicles

Initiative: Förderangebot für geflohene Wissenschaftler:innen aus Afghanistan

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Extracellular vesicles (EVs) are membranous vesicles of cellular origin that per definition are discriminated according to their biogenesis into exosomes that originate from endosomal system into 70-150 nm vesicle, microvesicles which bud off from plasma membrane into 100-1000 nm vesicle, and apoptotic bodies and other vesicle entities not falling into the former category. EVs are considered to participate and mediate intercellular communications and signaling. According to their cell-specific tropism, they have been comprehensively discussed as a novel drug delivery system for many different applications. This project aims to develop genetic strategies to either deposit given protein domains onto the EVs surface or to associate certain proteins in a cleavable manner with CD63/ICAM-1 C-termini into the EVs lumen. While the delivery of given protein domains onto the EVs surface in the first line should help to develop a novel EV-based vaccination strategy, the protein deposition into the EVs lumen should help to develop a novel EV-based protein intracellular delivery strategy, especially transcription factors, via EVs into EV-up-taking cells.

Projektbeteiligte

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