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Cytochalasin B-induced membrane vesicles convey angiogenic activity of parental cells

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Abstract

© Gomzikova et al. Naturally occurring extracellular vesicles (EVs) play essential roles in intracellular communication and delivery of bioactive molecules. Therefore it has been suggested that EVs could be used for delivery of therapeutics. However, to date the therapeutic application of EVs has been limited by number of factors, including limited yield and full understanding of their biological activities. To address these issues, we analyzed the morphology, molecular composition, fusion capacity and biological activity of Cytochalasin B-induced membrane vesicles (CIMVs). The size of these vesicles was comparable to that of naturally occurring EVs. In addition, we have shown that CIMVs from human SH-SY5Y cells contain elevated levels of VEGF as compared to the parental cells, and stimulate angiogenesis in vitro and in vivo.

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Keywords

Angiogenesis, Cell-free therapy, Cytochalasin B-induced membrane vesicles, Extracellular vesicles, Membrane vesicles

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