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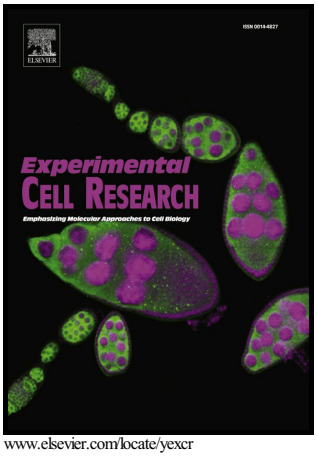

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Exosomes derived from endothelial progenitor cells ameliorate acute lung injury by transferring miR-126

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Abstract

Endothelial progenitor cell (EPC) has potential to attenuate pulmonary inflammation and injury. As a pivotal paracrine entity of stem cells, whether EPC-derived exosomes (EPC-Exos) contribute to acute lung injury (ALI) remains unknown. Exosomes were purified from conditional medium of EPCs, and then characterized by electron micrograph and immunoblotting. A model of ALI was induced by lipopolysaccharide (LPS) and then rats were transplanted with EPC-Exos. The underlying mechanisms of action of EPC-Exos were examined in vitro endothelial functional assays including the TEER, proliferation (CKK-8), angiogenesis and migration. A possible underlying mechanism was examined by western blotting and further animal studies. Administration of EPC-Exos ameliorated LPS-induced ALI and restored the in vivo pulmonary integrity. EPC-Exos enhanced the proliferation, migration and tube formation of the endothelial cells (ECs). Furthermore, we found that miR-126 was enriched in EPC-Exos and can be delivered onto ECs. Modification of EPCs through miR-126 knockdown can diminish their exosomes

[1] Equal study contribution