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## Nanocarrier-directed targeted cell delivery for stem cell therapy

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Stem cell-based therapy has emerged as a promising treatment option in regenerative medicine. However, targeted systemic delivery of therapeutic cells to the dysfunctional tissues remains one formidable challenge. Herein, we present a targeted nanocarrier-mediated cell delivery method by coating the surface of the cell to be delivered with dendrimer nanocarriers modified with adhesion molecules. Infused nanocarrier-coated cells reach to destination via recognition and association with the counterpart adhesion molecules highly or selectively expressed on the activated endothelium in diseased tissues. Once anchored on the activated endothelium, nanocarriers-coated transporting cells undergo transendothelial migration, extravasation and homing to the targeted tissues to execute their therapeutic role. We now demonstrate feasibility, efficacy and safety of our targeted nanocarrier for delivery of bone marrow cells (BMC) to cutaneous wound tissues and grafted corneas and its advantages over conventional BMC transplantation in mouse models for wound healing and neovascularization. This versatile platform is suited for targeted systemic delivery of virtually any type of therapeutic cell.

### Biography

Zhao-Jun Liu is an Associate Professor at University of Miami, Miller School of Medicine. His research interests span both vascular biology and cancer biology. He has published more than 60 research papers, review articles and book chapters.

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