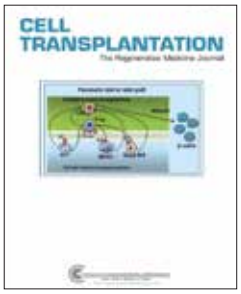
Cell Transplant. 2012; 21 (10): 2225-2239.



CELL TRANSPLANTATION
The Regenerative Medicine Journal

LUNG PULMONARY HYPERTENSION

IMPROVED CELL SURVIVAL AND PARACRINE CAPACITY OF HUMAN EMBRYONIC STEM CELL-DERIVED MESENCHYMAL STEM CELLS PROMOTE THERAPEUTIC POTENTIAL FOR PULMONARY ARTERIAL HYPERTENSION

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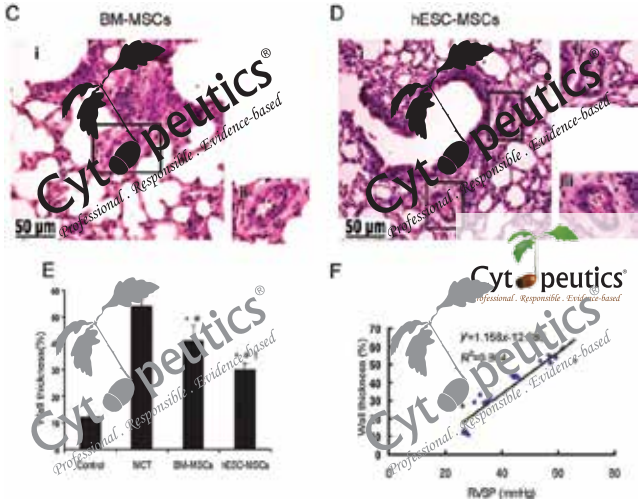
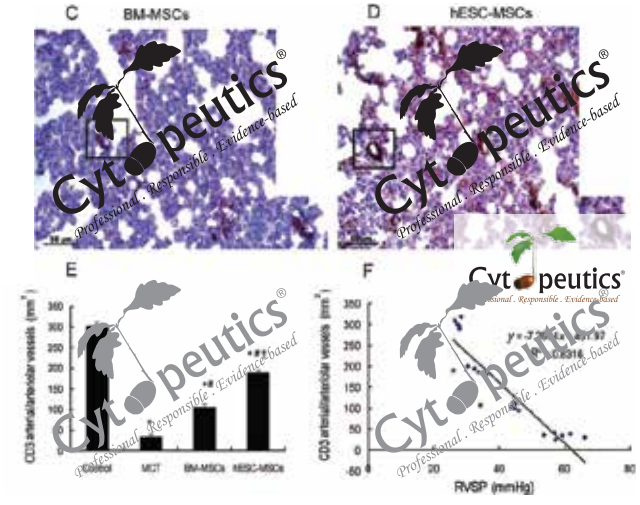


Transplantation of hESC-MSCs or BM-MSCs alleviated MCT-induced pulmonary artery remodeling and enhanced density of pulmonary microvascular beds shown through representative low and high magnification photographs. (C) (i–ii) The medial wall thickening in small pulmonary arteries was partially attenuated by BM-MSC transplantation. (D) (i–iii) Medial wall thickening was significantly reduced by hESC-MSC treatment. (E) The percentage medial wall thickness of each artery reduced by 23.9% and 44.1% in the BM-MSC and hESC-MSC groups, respectively, compared with the MCT group. (F) The percentage of medial wall thickness was significantly and positively associated with elevated RVSP.



Representative photographs show differential microvascular beds covered by CD31-positive endothelial cells among mice who received different treatment. After 3 weeks of transplantation (4-week), the number of CD31-positive arterial/arteriolar vessels had tripled in the BM-MSCs and quintupled in the hESC-MSCs group, respectively, compared with the MCT group (C-E). The number of CD31-positive arterial/ arteriolar vessels was significantly higher in the hESCMSCs group compared with BM-MSCs group (E). The density of CD31-positive arterial/arteriolar vessels was significantly positively associated with elevated RVSP (F).