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On the track of mesothelial progenitor cells from the peritoneal cavity transplanted to immunodeficient mice

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Abstract

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Mesothelial progenitor cells have been reported to reside in either the monolayer of mesothelium, submesothelium or within the peritoneal cavity as free floating cells. As a putative plasticity has been reported for the mesothelial progenitor cells and considering the potential implications of the establishment of a novel resource of stem /progenitor cells in gene and cell therapeutics and tissue engineering, we conducted an in vivo tracking of transplanted mesothelial cells. In order to induce immunodeficiency, the recipient mice were treated with 32 mg kg⁻¹ of daily Cyclosporine. On days 14, 30 and 60 post transplantation, brain, heart, skeletal muscle and lung tissues were screened by a modified FISH method directed to the Y chromosome of donor cells. Fluorescence harboring cells were analyzed by flow cytometry and fluorescent microscopy. The data confirmed by PCR, demonstrated the existence morphology alteration of the donor cells in various organs of the recipient mice, notably in the skeletal muscle and lung and less in the heart and brain. Immunostaining of recovered cells from the nervous recipient tissues suggests differentiation of mesothelial cells in the new microenvironment. © 2007 Asian Network for Scientific Information.

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Author keywords

Mesothelial cells; Mice; Peritoneum; Progenitor cell transplantation; Stem cells

Indexed Keywords

EMTREE drug terms: cyclosporin

EMTREE medical terms: animal; article; Bagg albino mouse; culture technique; cytology; epithelium cell; female; flow cytometry; fluorescence in situ hybridization; immune deficiency; male; metabolism; methodology; mouse; pathology; peritoneal cavity; physiology; stem cell; stem cell transplantation; time

MeSH: Animals; Cell Culture Techniques; Cyclosporine; Epithelial Cells; Female; Flow Cytometry; Immunologic Deficiency Syndromes; In Situ Hybridization, Fluorescence; Male; Mice; Mice, Inbred BALB C; Peritoneal Cavity; Stem Cell Transplantation; Stem Cells; Time Factors
Medline is the source for the MeSH terms of this document.

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