

Human Mesenchymal Progenitor Cell (MPCs)

Researchers at the University of South Florida has demonstrated in human to mouse transplantations that MPCs (pluridifferentiated Mesenchymal Progenitor Cells) facilitate engraftment of blood cells and reduce GVHD. MPCs arise from specialized cells in the bone marrow. As we have shown using a variety of techniques, they are characterized by the ability to produce different tissues such as bone, cartilage, fat, muscle, nerve, epithelial cell and even hemopoietic cells (B lymphocytes in particular).

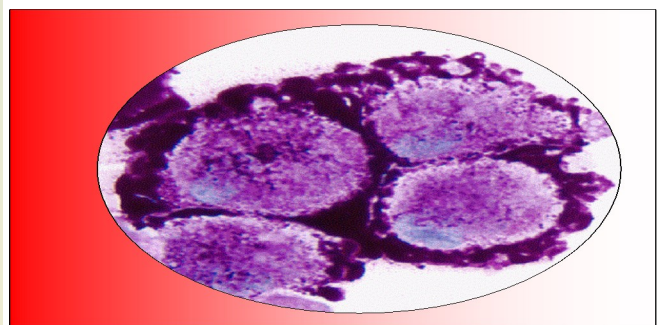
The total number of organ transplants performed in 2007 were 31,184. Additionally, 95,000 patients are waiting for an organ transplant in the United States. Approximately 40,000 bone marrow transplants are performed around the world. With continuing research, the success rate of transplantation has steadily improved. However, there are two major problems that should be resolved in order to enhance the survival rates. They are: a) failure to engraft and b) donor lymphocytes destroying the recipient's tissues (graft vs. host disease, GVHD).

MPCs can be isolated by cell suspension and Percoll gradient centrifugation. MPCs are valuable in elucidating the role of bone marrow in normal and leukemic blood cell formation; in genomic and proteomic studies; and as a substitute for bone marrow stromal cells in mouse models. MPCs aid in blood cell transplantation by supporting blood cell formation. MPCs may represent significant advantages over transplanting bone chips or marrow plugs. MPC therapy is flexible and might be less expensive than current immunosuppressant treatment for graft rejection or GVHD.

MPC technology is now available for licensing for use in transplantation procedures.

ADVANTAGES:

- **New procedure for isolating pluridifferentiated MPCs**
- **Potential treatment for Transplantation. MPCs also have the potential to treat a wide range of diseases such as cancer and genetic disorders where transplantation is appropriate**
- **New Diagnostic Bioassays that compare normal MPCs with those derived from cancerous bone marrow**



*Pluridifferentiated Mesenchymal
Progenitor Cell*

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