

Human Mesenchymal Stem Cell (MSC) Complete Kit

Catalog #2130 500mL medium + MSC Cells

Product Description

Base Medium (450 mL) plus Supplement Medium (50 mL) plus Human Mesenchymal Stem Cells (0.5 million). This medium is optimized for the culture and expansion of mesenchymal cells.

Background

Mesenchymal stem cells (MSC) may be harvested from the bone marrow, but are at a very low frequency compared to myeloid or erythroid progenitors. The frequency of the CFU-F is approximately 1:100,000 bone marrow mononuclear cells and we have previously shown that these cells are correlated with donor age (Clarke & McCann, 1989). These cells can be expanded in culture, and these expanded cells have been used to treat osteogenesis imperfecta (Horowitz et al, 1999), graft-versus-host disease (Ringden et al, 2007) as well as non-union fractures (presented by Paul Simmons, Mesenchymal Meeting, New Orleans, 2003). These cells lack expression of the CD45 and CD34 antigens and hence are sometimes called non-hematopoietic cells. The cells do express CD105, CD29 and CD73 antigens. These culture expanded cells have the ability to differentiate into a number of specific mature cell types including adipocytes (fat) and osteogenic cells (bone).

Procedure for Use

Thaw Preparing Medium:

Thaw supplements and add the entire volume to the Base Medium to generate 'Complete Medium.' The Complete Medium may be stored at +4°C for up to 6 weeks. For optimal growth, tissue culture treated plastics should be employed and cells passaged into

fresh Complete Medium when they reach approximately 70% confluence.

Thawing Cells:

The thawing protocol can be found on ReachBio's website at www.reachbio.com/protocols, by emailing techsupport@reachbio.com or by contacting Customer Service at 1.206.420.0300.

Resuspension and Culture:

Resuspend cells in 'Complete Medium' at a concentration of 12,500 cells/mL and plate 5000 cells per cm² on tissue-culture-treated plasticware. Cells will attach in 2 to 4 hours and will reach approximately 70% confluence within 4 to 6 days, at which point they should be passaged.

Stability and Storage

Store Base Medium at +4°C, Supplement Medium at -20°C and MSC vial at -150°C until use.

References

Clarke E and McCann, Bone Marrow Transplant 4: 596-597, 1989

Horwitz, EM et al, Nature Med 5: 309-313, 1999

Ringden O et al, Transplantation 81: 1390-1397, 2007

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