

## Fresh Product

### Bone Marrow Mesenchymal Stem Cells

Catalog#	BMMSC001F	1 million cells
	BMMSC002F	2 million cells

## Product Description

Human Bone Marrow Mesenchymal Stem Cells are positively selected from human bone marrow mononuclear cells.

Whole bone marrow is collected from the posterior iliac crest into a syringe containing the anticoagulant heparin. Mononuclear cells are enriched from the bone marrow suspension by a density gradient centrifugation protocol and subsequently cultured in medium and supplements that promote mesenchymal stem cell (MSC) propagation. Cells undergo a single passage at 80% confluence and are harvested after passage at 80% confluence. After culture, adherent cells are then checked for the expression of specific markers. Cultured bone marrow mesenchymal/stromal stem cells have a fibroblast-like phenotype and express CD73, CD90 and CD105, in addition to being CD14, CD34, CD45 and HLA-DR negative.

Fresh products have a high viability without the detrimental effects of freezing, thawing, and exposure to cryoprotectants.

Cells were obtained using Institutional Review Board (IRB) approved consent forms and protocols.

## Sample Collection and Processing

All samples are collected at our Stem Cell Collection Center. Samples are then quickly processed at our on-site laboratory to achieve maximum viability and quality.

Infectious disease testing for HIV, HBV, and HCV is performed on a sample of donor blood. Only samples with negative results within 90 days of collection are shipped unless approved by the customer. All testing is performed by a CLIA-certified lab.

## Format

Isolated stem/progenitor cells are shipped in StemSpan™. We normally ship isolated cells on wet ice, but we can also use gel packs at the customer's request. These techniques minimize cellular damage during transportation while helping to ensure the viability you need.

Specific containers and media can also be prepared as requested by the customer.

## Storage

Fresh products should be used or processed immediately upon receipt. The warranty only covers items whose specifications are tested at the time they are received.

## Cell Counting Instructions

Important: This cell viability/counting step is required to ensure the quantity of cells provided. Be sure to count the cells before washing. Be aware that cell loss is expected and may be up to 30% during wash steps. Recovery rates vary depending on technique.

### Materials

- Cleaned hemocytometer
- Trypan Blue

### Protocol

1. If removing the cell suspension from the vial in which it was shipped, be sure to rinse the vial to collect all of the cells.
2. Gently mix the cell suspension and measure the volume.
3. Make a 1-in-2 dilution with 20 µL each of well-mixed cell suspension and Trypan Blue.
4. Load one side of the hemocytometer, being careful not to over- or under-fill the chamber.
5. Count viable (clear, round, bright) and non-viable (blue, irregular shape, dull) cells in the four corner squares. Adjust your dilution if there are more than 100 cells/square.
6. Determine the number of total viable cells in the original sample. One square is equal to 100 nL.

Viability = live cells/all cells

Cell Concentration = Mean cells/square × Dilution Factor × 104

Total Cell Count = Cell Concentration × Starting Volume

Total Viable Cell Count = Total Cell Count × Viability

## Warning

This product contains human tissue or other biological material and MUST be handled at Biosafety Level 2 or higher. All biological products should be treated as potentially infectious or contaminated material, even if infectious disease screening reports are negative. Follow universal precautions and wear appropriate personal protective equipment.

## Product Warranty

For our product warranty, please review our Terms and Conditions at [stemexpress.com/terms-and-conditions/](http://stemexpress.com/terms-and-conditions/).

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