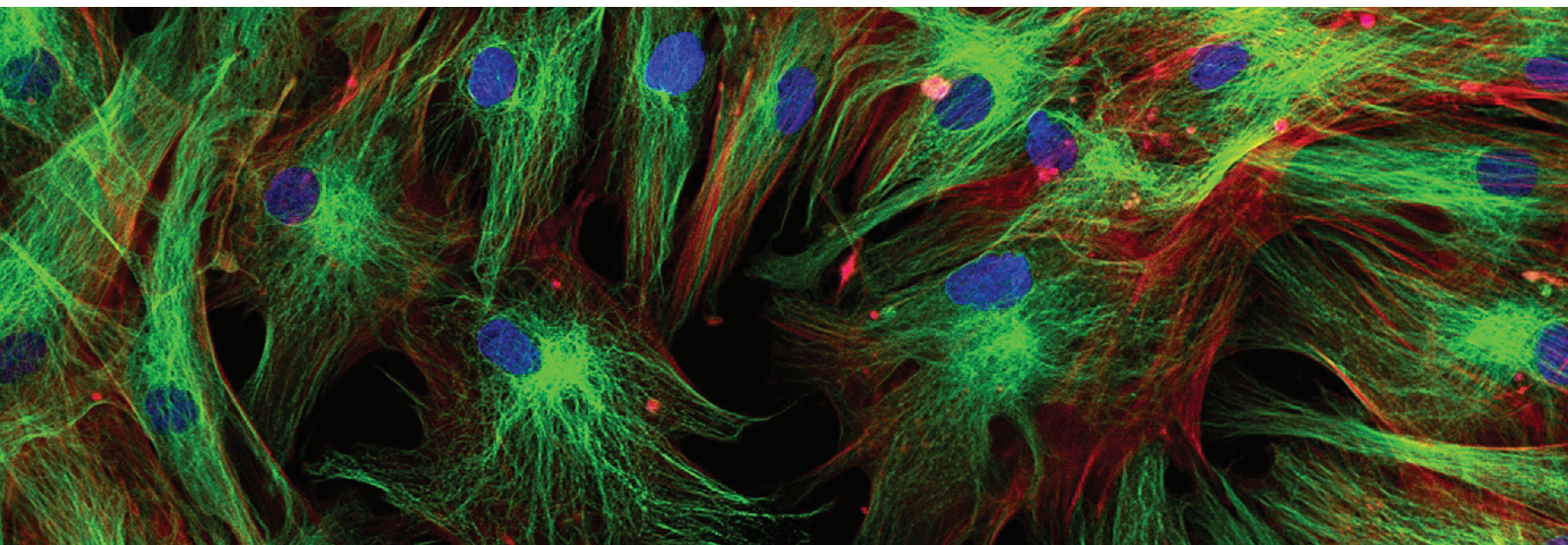




# NutriStem® MSC Culture System

A complete xeno-free, serum-free system for the growth and expansion of hMSCs



- **Defined, xeno-free, serum-free medium**
- **Superior proliferation of hMSCs**
- **Supports long-term growth and differentiation potential**
- **FDA Drug Master File**

## Redefining stem cell excellence and advancing clinical applications

Defined, serum-free, xeno-free reagents are essential tools for all human mesenchymal stem cell (hMSC) research having potential clinical applications. The NutriStem® MSC Culture System includes defined reagents ideal for translational research use. hMSCs cultured in serum-free, xeno-free NutriStem® MSC XF Medium show superior proliferation and self-renewal potential in comparison to serum-containing media and other serum-free media. In addition, hMSCs maintain their proper fibroblast-like cell morphology, tri-lineage differentiation potential, and demonstrate normal hMSC marker profiles and karyotypic stability over long-term culture.

NutriStem® MSC XF Medium is designed for optimal growth and expansion of hMSCs derived from a variety of sources, including bone marrow (BM-hMSC), adipose tissue (AT-hMSC), Wharton's jelly (WJ-hMSC), placental tissue (PT-MSC), and umbilical cord matrix (UC-hMSC).

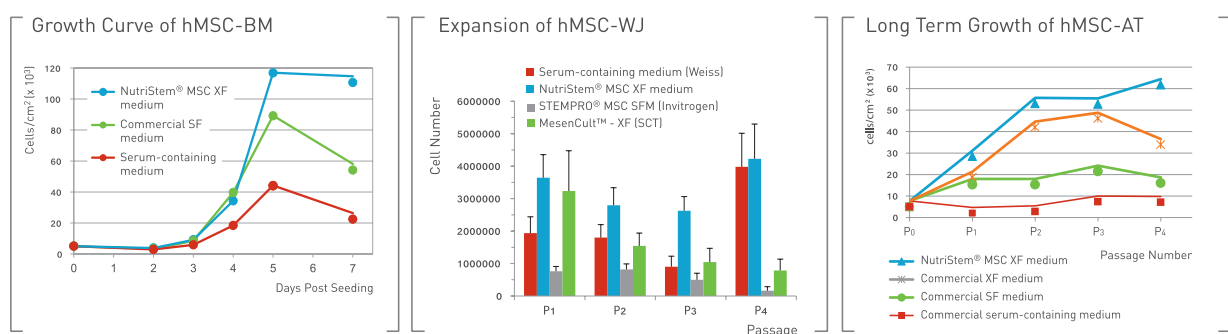
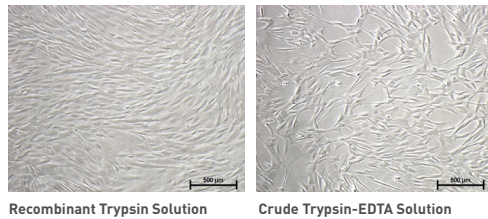


Figure 1: NutriStem® MSC XF Medium promotes superior proliferation and expansion of hMSCs over time as compared to other serum-free and serum-containing media.

## MSC Attachment Solutions

- Xeno-free, purified human fibronectin/human fibrinogen
- Optimized for serum-free cultures
- For hMSC proliferation and differentiation



## MSC Dissociation Solutions

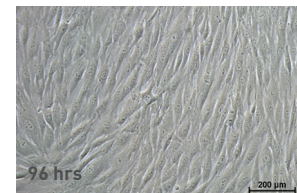
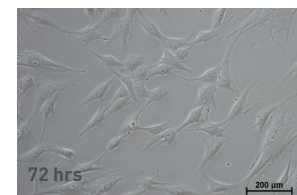
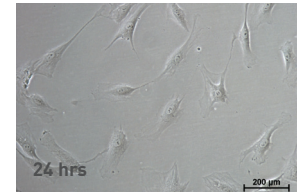
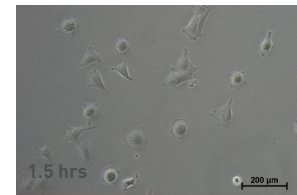
- Ready-to-use, defined
- Recombinant trypsin solutions

## NutriFreez™ D10 Cryopreservation Solution

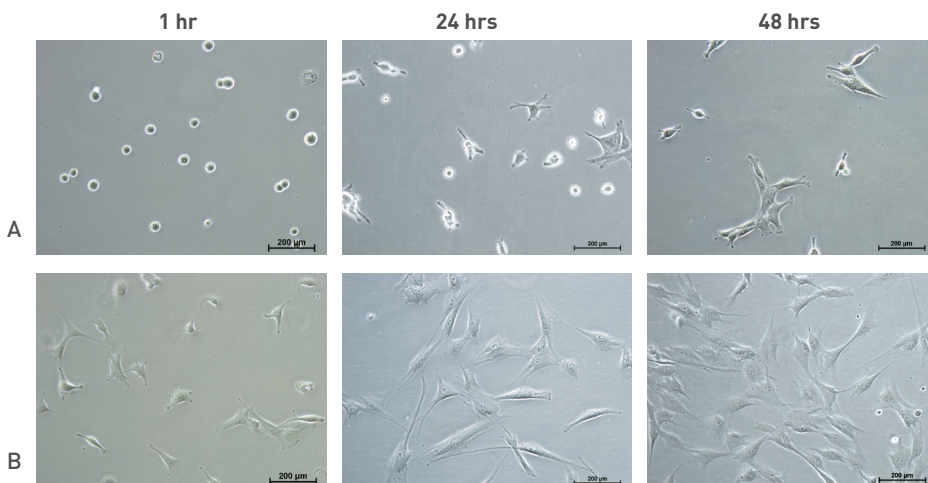
- Chemically defined, animal component-free, protein-free
- Excellent cell attachment and viability

**Figure 2: MSC Dissociation Solutions.**

Recovery of BM-hMSC after dissociation with either Recombinant Trypsin Solution or Recombinant Trypsin-EDTA Solution and re-seeding on plates pre-coated with the MSC Attachment Solution and cultured in NutriStem® MSC XF Medium. Images were taken on Day 5 post-dissociation (100X).



**Figure 3: NutriFreez™ D10 Cryopreservation Medium.** Images show the recovery of BM-hMSC after thawing. Cells were frozen using NutriFreez™ D10 Cryopreservation Medium, thawed, and re-seeded in NutriStem® MSC Medium. Images were taken at the indicated time points post-thawing (200X).



**Figure 4: MSC Attachment Solutions.** The use of MSC Attachment Solution greatly enhances BM-hMSC attachment and growth in culture. Cells in panel A images were cultured without MSC Attachment Solution. Cells in panel B were cultured with MSC Attachment Solution. Images were taken at the indicated time points post-seeding (200X).

## Ordering Information

Cat. #	Product
05-200-1	MSC NutriStem® XF Basal Medium
05-201-1	MSC NutriStem® XF Supplement Mix
05-760-1	NutriCoat™ Attachment Solution
05-752-1	MSC Attachment Solution
05-713-1	NutriFreez™ D10 Cryopreservation Medium
03-078-1	Recombinant Trypsin Solution
03-079-1	Recombinant Trypsin-EDTA Solution
PLTGOLD100R	PLTGold® Human Platelet Lysate (Research-grade)
PLTGOLD100GMP	PLTGold® Human Platelet Lysate (Clinical-grade)
PLTGOLD100GMP-PI	PLTGold® Human Platelet Lysate (Pathogen Inactivated)
PLTMAX100R	PLTMax® Human Platelet Lysate (Research-grade)
PLTMAX100GMP	PLTMax® Human Platelet Lysate (Clinical-grade)

## ALSO AVAILABLE

### MSCgo™ Differentiation Media

A unique line of complete, serum-free, and xeno-free media for efficient and reproducible differentiation of hMSCs.

- MSCgo™ Osteogenic XF Medium
- MSCgo™ Rapid Osteogenic XF Medium
- MSCgo™ Chondrogenic XF Kit
- MSCgo™ Adipogenic XF Kit

## How to Order

Biological Industries USA | T. 860.316.2702 F. 860.269.0596 | [orders-usa@bioind.com](mailto:orders-usa@bioind.com)

Biological Industries | T. 972.4.9960595 F. 972.4.9960631 | [info@bioind.com](mailto:info@bioind.com)

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