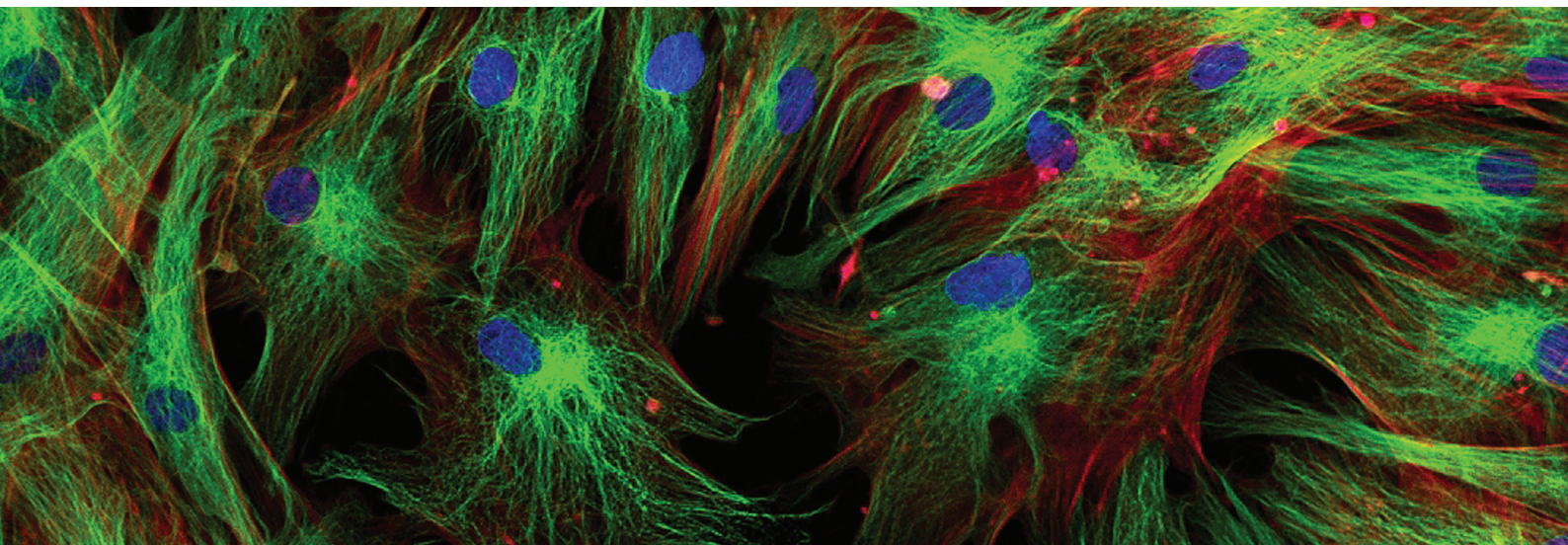




NutriStem® MSC Culture System

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).

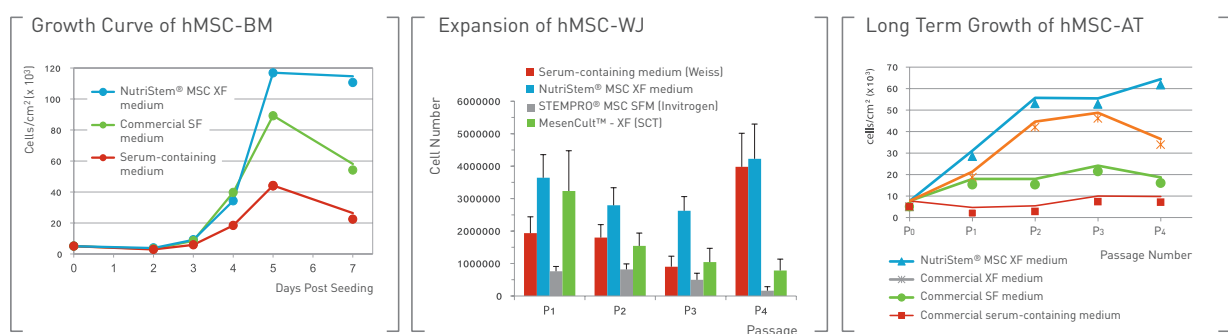
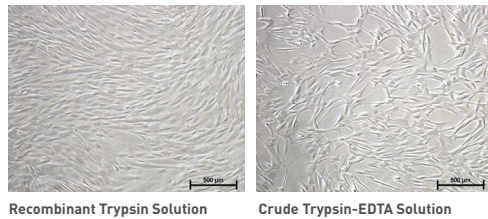


Figure 1: NutriStem® MSC XF Medium promotes superior proliferation and expansion of hMSCs over time as compared to other serum-free and serum-containing media.

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).

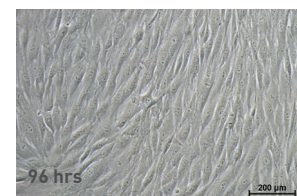
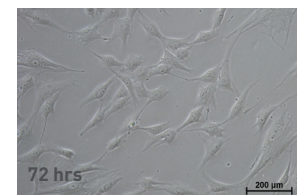
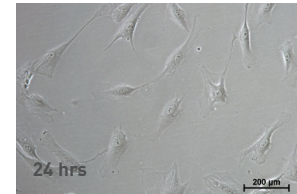
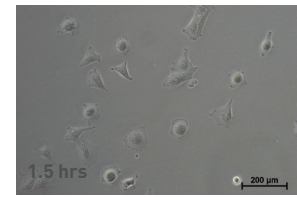


Figure 3: NutriFreez™ D10 Cryopreservation Medium. Images show the recovery of BM-hMSC after thawing. Cells were frozen using NutriFreez™ D10 Cryopreservation Medium, thawed, and re-seeded in NutriStem® MSC Medium. Images were taken at the indicated time points post-thawing (200X).

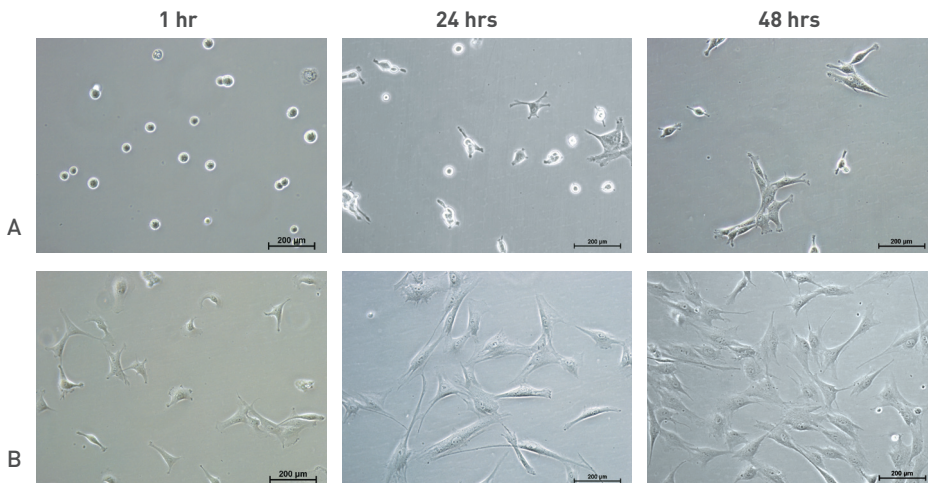


Figure 4: MSC Attachment Solutions. The use of MSC Attachment Solution greatly enhances BM-hMSC attachment and growth in culture. Cells in panel A images were cultured without MSC Attachment Solution. Cells in panel B were cultured with MSC Attachment Solution. Images were taken at the indicated time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

Biological Industries | T. 972.4.9960595 F. 972.4.9960631 | info@bioind.com

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