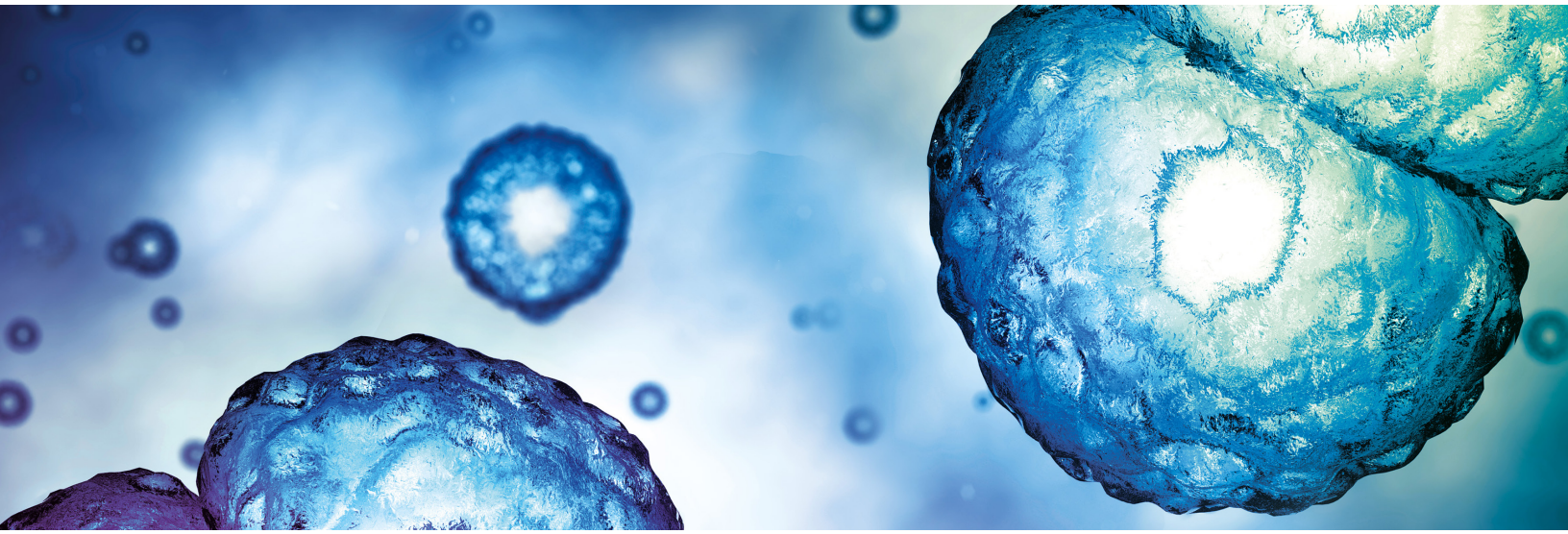
MSCgo™ Differentiation Media

Advanced evaluation of adipogenesis, osteogenesis, and chondrogenesis

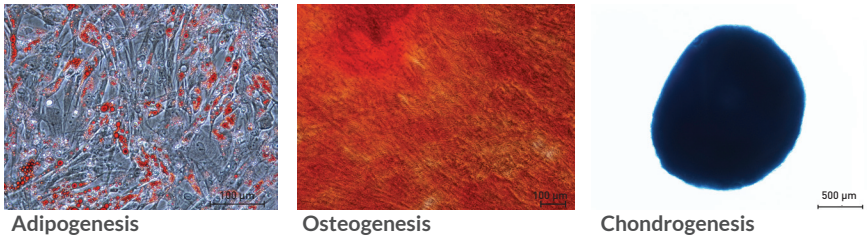


- Serum-free, xeno-free media
- cGMP-manufactured
- Efficient differentiation of hMSCs from various sources
- Effective multipotency evaluation for studies and translation
- Simple, reliable protocols

Redefining stem cell excellence

State-of-the-art stem cell-based research necessitates advanced evaluation procedures prior to the production of novel therapeutic applications. Human mesenchymal stem cell (hMSC) differentiation for the assessment of multipotency requires standardized culture methods to ensure consistent, reproducible, and reliable results. The unique line of **MSCgo™ Differentiation Media** offers a complete system for the evaluation of hMSCs designed to efficiently differentiate hMSCs from a variety of sources into mature adipocytes, osteocytes/osteoblasts, and chondrocytes.

The MSCgo™ Differentiation Media are cGMP-manufactured, serum-free, and xeno-free solutions allowing for complete confidence that each study performed will be reproducible. Each MSCgo™ Differentiation Medium contains all growth factors and supplements necessary for differentiation to the specific lineage desired in a ready-to-use bottle or easy-to-use kit. These differentiation media have been validated with hMSCs from a variety of sources, including bone marrow, adipose tissue, Wharton's jelly, and umbilical cord tissue creating flexibility in a multitude of research workflows.



Adipogenesis Osteogenesis Chondrogenesis

Figure 1: MSCgo™ Differentiation Media is a complete system for multipotency evaluation of hMSCs into mature adipocytes, osteocytes/osteoblasts, and chondrocytes. Images taken of mature differentiated cells from adipose tissue-derived hMSCs.

Adipogenic Differentiation

The MSCgo™ Adipogenic Differentiation Medium is a complete kit, including basal medium and optimized supplements, containing all growth factors and components necessary for the enhanced differentiation of hMSCs to mature adipocytes in a serum-free and xeno-free environment. Efficient adipogenic differentiation of hMSCs is achieved through cycles in culture with MSCgo™ Adipogenic Differentiation Medium and maintenance medium (NutriStem® MSC XF Medium). Oil Red-O solution is then used to stain accumulated intercellular lipid droplets, which are an indication of mature adipocytes.

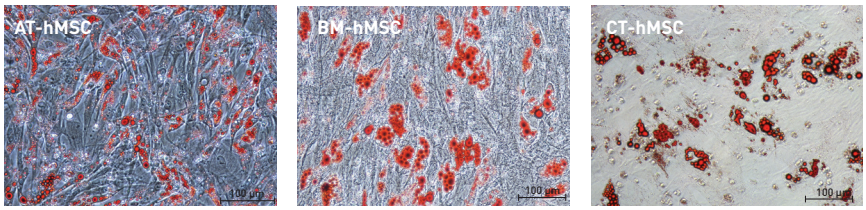


Figure 2: Adipogenesis. After expansion in culture using NutriStem® MSC XF Medium, hMSCs from adipose tissue (AT-hMSC), bone marrow (BM-hMSC), and cord tissue (CT-hMSC) were transferred to a differentiation assay in MSCgo™ Adipogenic Differentiation Medium. Images were taken after 16 days of adipogenesis followed by Oil Red-O staining (20X).

Chondrogenic Differentiation

The MSCgo™ Chondrogenic Differentiation Medium is a complete kit, including basal medium and an optimized supplement mix, containing all growth factors and components necessary for chondrogenesis of hMSCs from a variety of source tissues in a serum-free and xeno-free environment. Chondrogenic differentiation of hMSCs in 3D spheroid culture results in the formation of cartilaginous tissue with a typical extracellular matrix rich in Aggrecan, a proteoglycan used as an indicator for cartilage formation that can be detected with Alcian Blue.

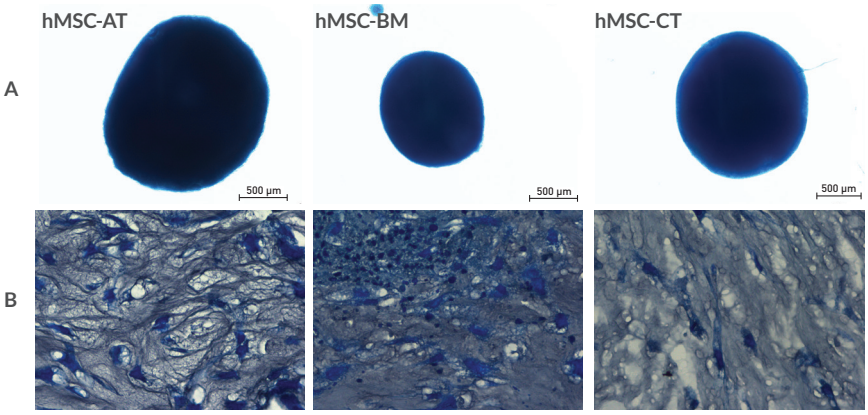


Figure 3: Chondrogenesis. Chondrogenic differentiation of hMSCs after 21 days of culture in MSCgo™ Chondrogenic Differentiation Medium depicted by **A.** positive Alcian Blue staining of chondrogenic spheroids and **B.** positive Toluidine Blue staining of mature chondrocytes surrounded by cartilage matrix (40X).

Osteogenic Differentiation

The MSCgo™ Osteogenic Differentiation Media are ready-to-use formulations developed for the serum-free and xeno-free differentiation of hMSCs to mature osteocytes/osteoblasts. Osteogenic differentiation of hMSCs results in the formation of a mineralized culture that can be detected and semi-quantified by Alizarin Red S (ARS) staining.

The easy-to-use, complete formulation of MSCgo™ Osteogenic Differentiation Medium generates mature osteocytes within 14 to 21 days of culture. For prompt differentiation and shorter validation timelines, MSCgo™ Rapid Osteogenic Differentiation Medium supports the formation of mature osteocytes in less than 10 days.

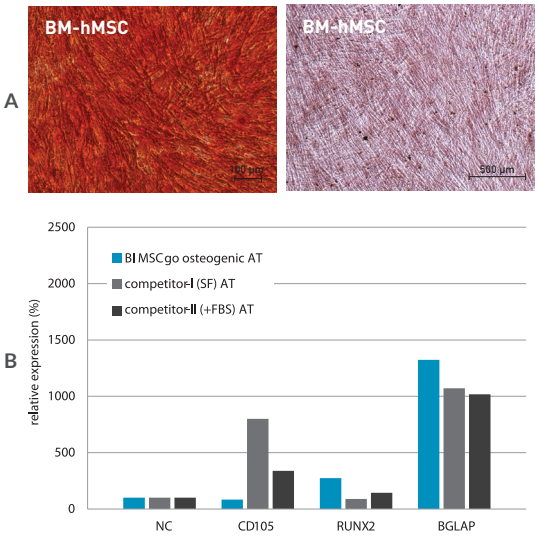


Figure 4: Osteogenic Differentiation. A. BM-hMSCs differentiate into osteocytes/osteoblasts when using serum-free MSCgo™ Osteogenic Differentiation Medium, detected by ARS staining (left). Little to no osteogenesis is observed when serum-containing medium is used (right). **B.** The MSCgo™ Osteogenic Differentiation Medium results in the lowest expression of CD105 (hMSC marker), and the highest expression of RUNX2 (osteogenic differentiation marker) and BGLAP (mature osteoblast marker), when compared to other serum-free and serum-containing media.

ORDERING INFORMATION

PRODUCT	CAT. #	SIZE
MSCgo™ Adipogenic Differentiation Medium*	05-330-1B-KT	100 mL
MSCgo™ Chondrogenic Differentiation Medium*	05-220-1B-KT	100 mL
MSCgo™ Osteogenic Differentiation Medium	05-440-1B	100 mL
MSCgo™ Rapid Osteogenic Differentiation Medium	05-442-1B	100 mL

*Includes media and supplement.

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