StemRD
EMPOWERING STEM CELL R&D

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MSCprime®, Primary MSC Supplement

Product Overview:

Mesenchymal stem cells (MSCs) can be expanded in serum-free media, which is a critical step towards clinical application. However, isolation of the primary MSCs from human tissues in serum-free media suffers from low efficiency due to the lack of cell adhesion proteins.

***MSCprime®** is developed for the isolation of primary MSC from human tissues when used with StemRD's **MesenGro®** (now available as **StemGro®** hMSC Medium from Corning) a serum-free and chemically-defined MSC medium (#40-410-KIT, Corning-Mediatech). Its features include:*

1. Increasing plating efficiency of primary MSCs
2. Resulting in more homogeneous and morphologically-desirable MSCs
3. Serum-free (no human or animal serum added)
4. Chemically-defined (all ingredients are either purified or recombinant)
5. Better lot-to-lot consistency than serum or other undefined supplements

Package size and storage:

MSCprime® is a concentrated solution (25 X) and shipped in three package sizes frozen:

	Catalog #	*Size (25 X)*	*Diluted Volume*
MSCprime®	MP-001	1 mL	25 mL
	MP-005	5 mL	125 mL
	MP-025	25 mL	625 mL

- **Storage and Shelf life: MSCprime®** can be stored at -80°C for 6 months. Diluted MSCprime® can be stored at 2 to 8°C for 2 weeks.
- **Avoid freeze and thaw.**

Additional key reagents/supplies needed:

- **MesenGro®,** serum-free and chemically-defined MSC medium (**StemRD** cat# MGro-500)
- **CellBIND®** tissue culture flasks or dishes (e.g., T25 flasks, **Corning** cat# 3289)

FOR RESEARCH USE ONLY. NOT FOR HUMAN THERAPEUTIC OR DIAGNOSTIC USES.

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Application Instruction:

1. Prior to use, thaw **MSCprime®** at 2 to 8°C overnight.
2. Add primary cell isolate containing MSCs (e.g., MNC layer of bone marrow aspirate) into 10X volume of complete **MesenGro®** serum-free medium, spin cells down at 1500 rpm for 10 min.
3. During cell spinning, dilute **MSCprime®** into complete **MesenGro®** medium at a ratio of **1:24**.
4. Resuspend the cell pellet in the diluted **MSCprime®/MesenGro®** medium and transfer into a **CellBIND®** tissue culture flask. Place the flask in 37°C, 5% CO_2 incubator.
5. Change medium to complete **MesenGro®** in 2 to 6 days. The optimal time of the medium change to **MesenGro®** may vary between tissue types. We have successfully isolated MSCs from bone marrow after 2 days and umbilical cord after 6 days in **MSCprime®/MesenGro®**. The appearance of MSC-like colonies can be used as a guide.

Expected Results:

1. Isolation of MSC-like cells from human umbilical cord by using **MSCprime®**:

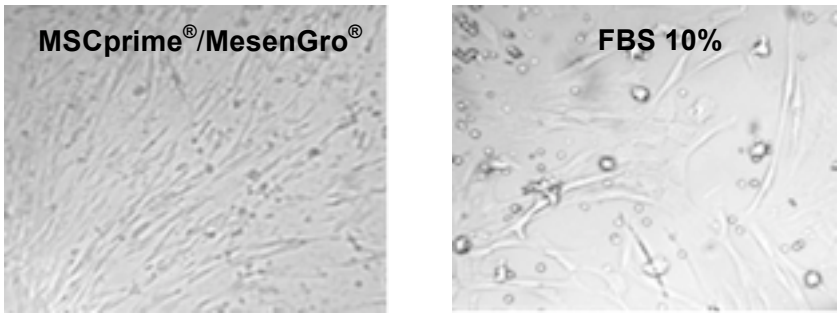

Fig 1. *Colonies of MSC-like cells isolated with **MSCprime®/MesenGro®** medium are denser, while the cells are more homogeneous and smaller than with FBS.*

2. **MSCprime®**-isolated homogeneous/smaller MSCs subsequently expanded in **MesenGro®**:

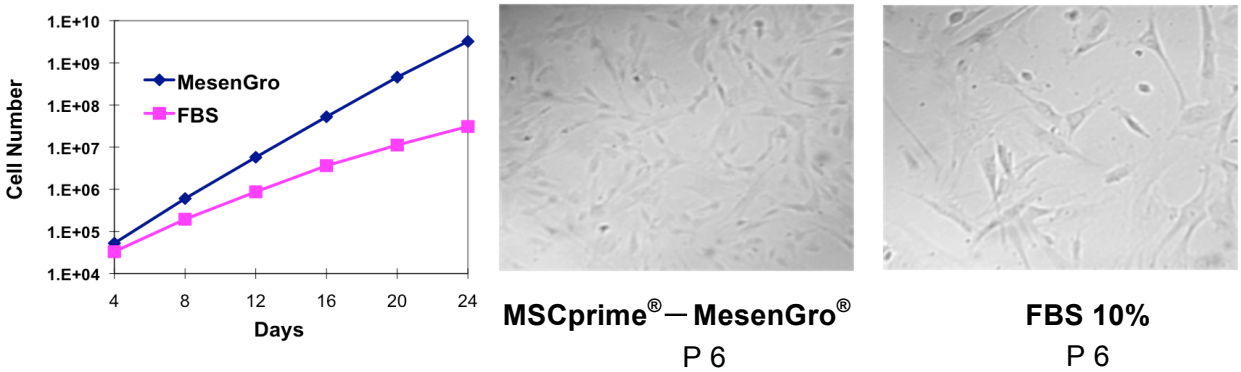

Fig. 2. *MSCs isolated by **MSCprime®** expand faster in **MesenGro®** with more desirable morphology than in FBS.*

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