

OptiVibro® MSC Serum-free Medium MH02

Xeno-free, phenol red-free medium for hMSC isolation and expansion with human platelet lysate supplementation

Serum-free | Xeno-free | hPL-supplemented culture system

Product overview

OptiVibro® MSC Serum-free Medium MH02 is a serum-free, xeno-free medium system optimized for the primary isolation and expansion of human mesenchymal stem cells (hMSCs). Under serum-free, phenol red-free, and xeno-free conditions, the complete medium is prepared with 2-5% human platelet lysate (hPL) and supports primary MSC isolation by explant or enzymatic digestion and expansion across multiple passages while maintaining stable surface marker expression.

Key features

- Serum-free, xeno-free, and phenol red-free formulation used with human platelet lysate (hPL).
- Supports primary hMSC isolation by explant and enzymatic digestion methods.
- High primary yield: typically 10^6 - 10^7 cells from a 15 cm umbilical cord in 14 days.
- Uniform morphology and 6-10-fold expansion in 72 hours; demonstrated stability through 20 passages.
- Supports retention of multilineage differentiation potential and characteristic CD marker profile with appropriate hPL supplementation.

Typical applications

Isolation and expansion of hMSCs, including umbilical cord-derived MSCs; cell banking; process development; and research or manufacturing workflows requiring serum-free, xeno-free culture with hPL supplementation.

GENERAL CULTURE GUIDANCE Prepare complete medium by adding MH01 supplement to MH01 basal medium. Use pre-warmed complete medium at 37°C. Culture at 37°C and 5% CO₂; passage cells at 80-90% confluence. Optimize conditions for the selected cell source and process.

General product characteristics

Parameter	General characteristic
Classification	Serum-free, xeno-free, phenol red-free hPL-supplemented MSC culture medium system
Product type	Complete medium system: MH01 basal medium plus MH02 supplement and hPL
Target cells	Human mesenchymal stem cells (hMSCs), including hUC-MSCs
Primary isolation	Explant and enzymatic digestion methods
Culture mode	Adherent culture; isolation and multi-passage expansion
Supplementation	2-5% human platelet lysate (hPL); 5% recommended as a starting point for primary isolation
Storage	Basal medium: 2-8°C, protect from light. Supplement: -20°C, protect from light.
Shelf life	12 months when stored as directed. See product label for expiry.

Note: General information is shown. Product label and lot-specific Certificate of Analysis govern release.

PRODUCT INFORMATION

Ordering, storage and use

Ordering information

Catalog No.	Product name	Size
MH000-N021	OptiVibro® MSC Serum-free Medium MH02	500 mL kit
MH000-N022	OptiVibro® MSC Serum-free Medium MH02	1,000 mL kit

Catalog availability and pack sizes should be confirmed at the time of order.

Storage, transport and shelf life

Storage. Store the MH01 basal medium at 2-8°C and protect from light. Store the MH02 supplement at -20°C and protect from light. Avoid unnecessary light exposure, including fluorescent and UV light.

Transportation. Transport basal medium below 25°C, protected from light. Transport supplement below 0°C on dry ice, protected from light. Inspect shipment condition upon receipt.

Shelf life. 12 months when stored as directed. Confirm the labeled expiration date before use.

Complete medium preparation

1. Thaw the MH02 supplement at room temperature until completely dissolved.
2. Gently invert the supplement bottle 5-10 times, then allow it to stand for 5 minutes to ensure homogeneous dissolution.
3. For 500 mL complete medium, aseptically add 0.5 mL MH02 supplement to 500 mL MH01 basal medium, then add 10-25 mL hPL (2-5%). Mix thoroughly before use.
4. Store prepared complete medium at 2-8°C, protected from sunlight and UV light, and use within 2 weeks.

Starter culture guidance

Pre-warm the required amount of complete medium to 37°C. For hUC-MSC culture, seed at approximately 4,000 cells/cm² for 96-hour subculture or 8,000 cells/cm² for 72-hour subculture. Culture in a humidified incubator at 37°C and 5% CO₂. Subculture at 80-90% confluence; avoid over-confluence.

HANDLING NOTE Do not exceed 3 freeze-thaw cycles for the supplement. Aliquots may be stored at -20°C for up to 3 months, or temporarily at 2-8°C for use within 2 weeks.

Subculture guidance

Wash cultures with DPBS, then use an appropriate recombinant trypsin or other validated dissociation reagent according to the cell source and process. Collect and reseed cells into pre-warmed complete medium. A starting condition for T-175 flasks is 25 mL complete medium per flask; process-specific optimization is recommended.

INTENDED USE For research and manufacturing use only. Not intended for diagnostic or therapeutic use. This general datasheet does not replace the product label, user manual, Certificate of Analysis, or Safety Data Sheet.