ExCell

GMP-Grade



MSC Serum Free Medium

Expand more efficiently and without compromising function

Suzhou Excell Biotechnology Co., Ltd.

Product Overview

MSC Serum free medium is specially optimized for the culture and expansion of human mesenchymal stem cells (hMSCs), under completely serum-free and xeno-free conditions. MSC Medium supports the long-term cell culture and expansion of MSCs for multiple passages, while maintaining their various differentiation.
ExCellBio offers two product variants: MH01 requires no additional serum substitutes; MH02 requires 2% serum substitute supplementation by the user.

- **Serum-free, animal-component free, Xeno-free;**
- **Optimized for umbilical cord, bone marrow and adipose-derived;**
- **Retain robust expansion and trilineage differentiation capacities;**
- **Work without coating.**
- **GMP grade**

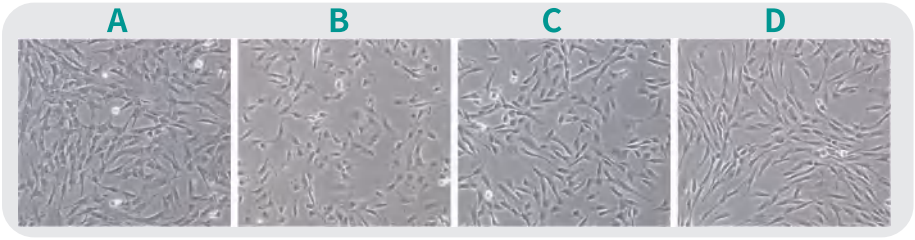
For optimal results, use in combination with ExCell's mild digestive enzyme OptiVitro® Recombinant Trypsin Digestive Solution RF01.



Product Data

MH01 Require no additional serum substitutes

I More homogeneous cell morphology



A: FBS-containing;
B: Medium I (Y);
C: Medium III (I);
D: MSC SFM;
Image captured at 10X magnification.

Figure 1. Morphological features of UC-MSCs under different media conditions.

II Under serum-free culture, UC-MSCs show shorter doubling time and yield 1.5-4 times more cells over three passages than serum-based methods.

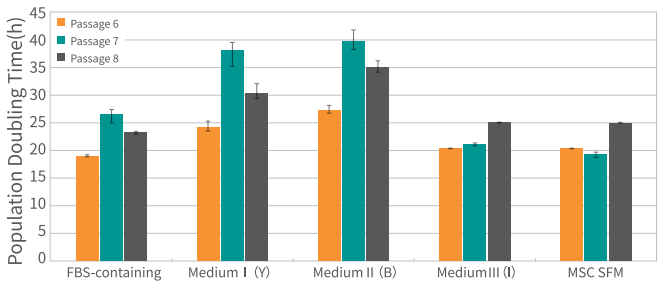


Figure 2. UC-MSC doubling time under different medium conditions.

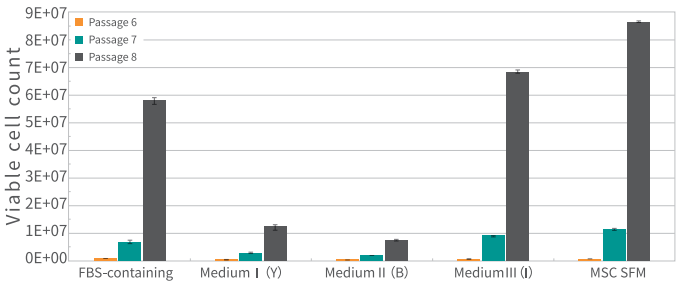


Figure 3. UC-MSC cell yield under different medium condition

III Superior cell expansion for multiple passages

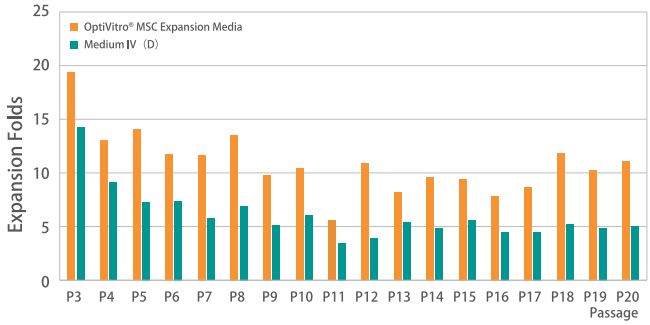


Figure 4. Higher expansion folds compared to Commercial Medium.

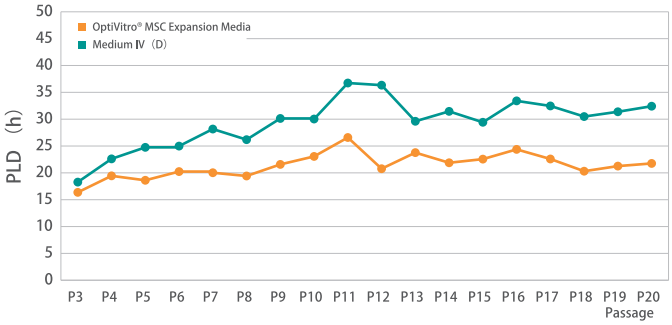


Figure 5. Shorter passage doubling level compared to Commercial Medium.

IV Under serum-free culture conditions, MSCs maintain cellular characteristics effectively.

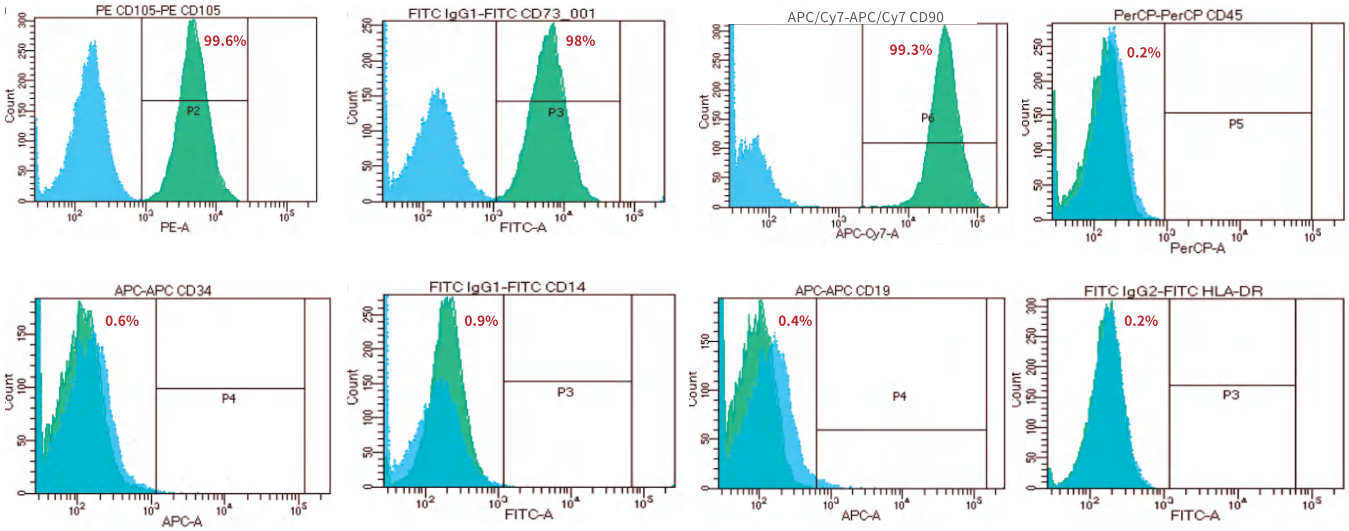


Figure 6. Flow cytometry analysis: CD105/CD73/CD90 positivity >98%; CD45/CD34/CD14/CD19/HLA-DR positivity <1%.

V Retain tri-lineage differentiation potential

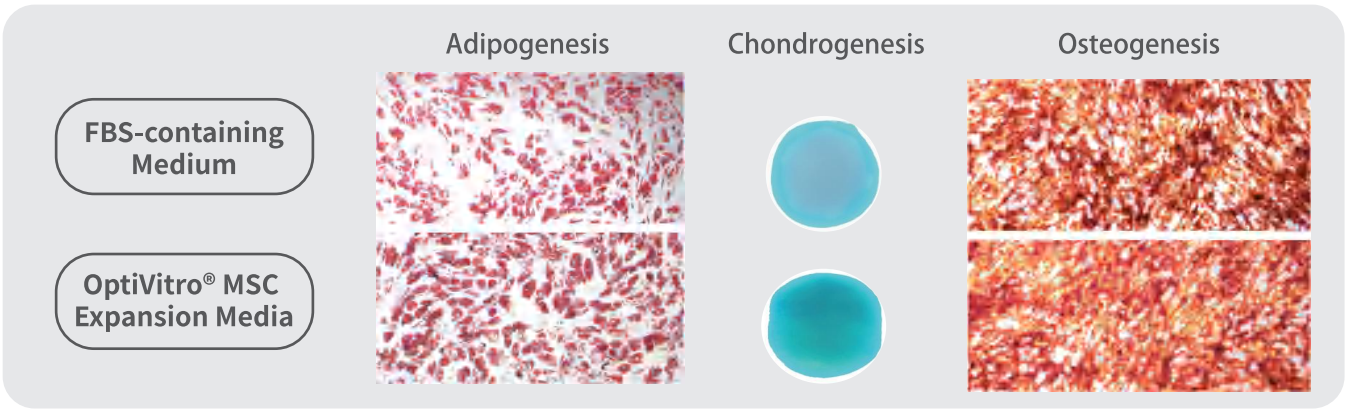
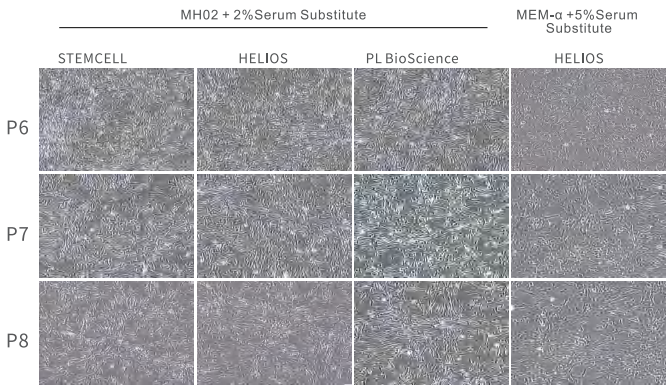


Figure 7. Human BM-MSCs expanded in OptiVitro® MSC Expansion Media and FBS-containing Medium displays tri-lineage differentiation potential.

MH02

Require 2% serum substitute supplementation

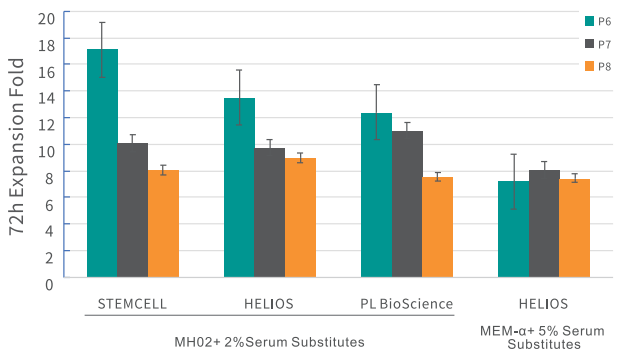
I MH02 maintains MSC expansion across serum substitute brands during passaging.



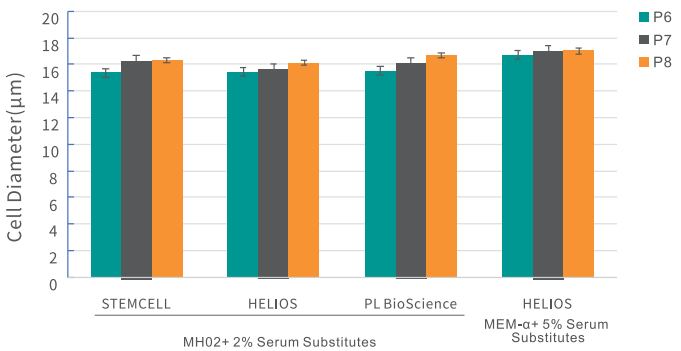
Serum Substitute Brands	Product Name	Catalog No.
STEMCELL	Human Platelet Lysate FD, XF	200-0360
HELIOS	UltroGRO-Advanced	HPCFDCRL50
PL BioScience	ELAREM Perform -FD PLUS	PE31011-CN

Test Conditions:
Cells: UC-MSCs at passages 6-8
Seeding Density: 8,000 cells/cm^2
Passage Duration: 72 h
Digestion Reagent: Excell Recombinant Trypsin RF01 (RF000-N031)

Cell Proliferation Efficiency with Different Serum Substitutes

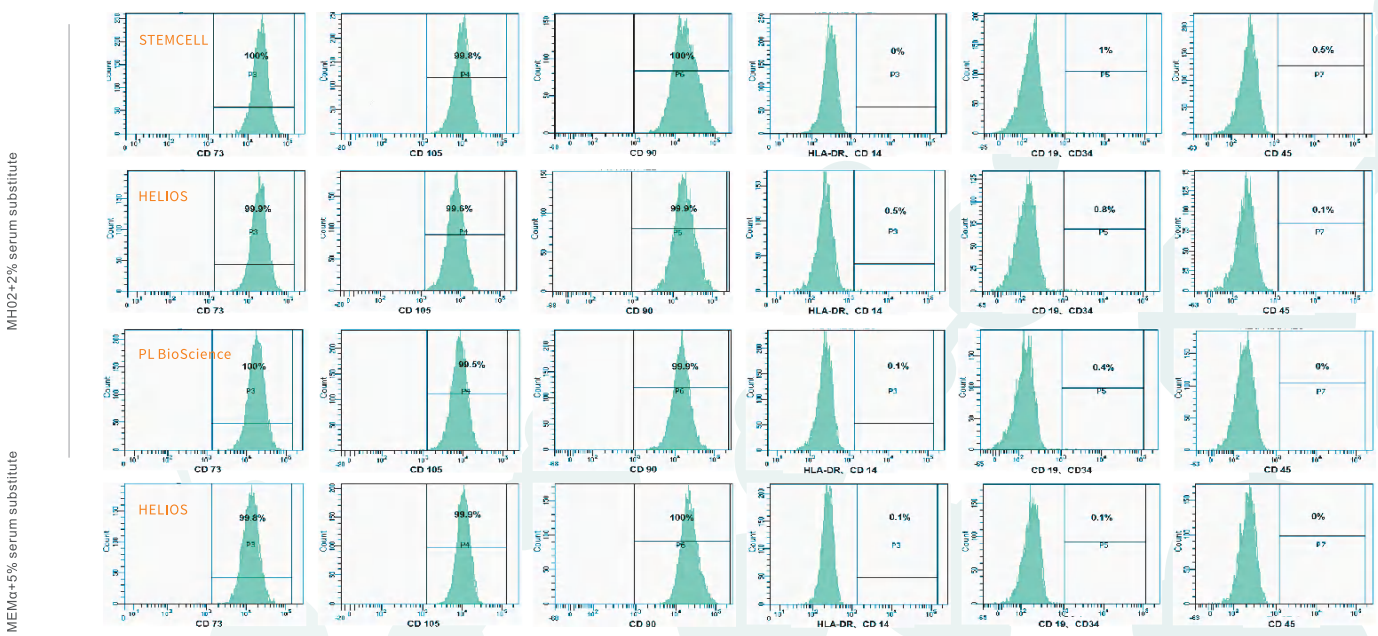


Cell Diameter with Different Serum Substitutes



MH02, combined with common serum substitutes, effectively maintains MSC growth, demonstrates superior proliferation rate vs. conventional serum-based media (MEM-α + 5% serum substitute), maintains normal cell diameter range, and reduces serum substitute costs.

II Surface Marker Retention with MH02



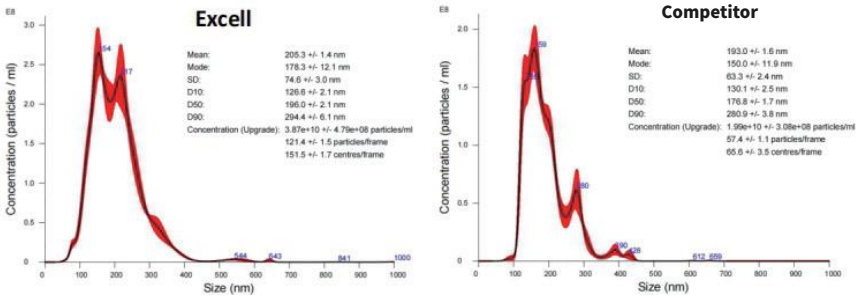
culture medium	MH02+ 2% serum substitute			ME01	MEM-α+ 5% HELIOS
	STEMCELL	HELIOS	PL BioScience		
CD73	100%	99.9%	100%	99.8%	99.8%
CD90	100%	99.9%	99.9%	99.9%	100%
CD105	99.8%	99.6%	99.5%	99.5%	99.9%
CD45, CD34, CD14, CD19, HLA-DR	<1%	<0.8%	<0.4%	<0.4%	<0.1%

MH02 maintains MSC phenotype across serum substitutes, with flow cytometry positivity rates:
CD73/CD90/CD105: >99%; CD45/CD34/CD14/CD19/HLA-DR: <1%

III MSC Serum-Free Medium MH02 – Exosome Production

MH02 enables higher exosome yield and purity under serum-free conditions.

	Seeding Density (T175)	Cell Harvest	Supernatant Volume	Exo-Concentration (particles/ml)	Avg. Exosome Yield (particles/ml/cell)	Purity (particles/ug)
Excell	8000cells/cm²	7.06E6	20 mL	3.87E10 +/- 4.79E8	5.48E3	1.36E9
Competitor	8000cells/cm²	7.12E6	20 mL	1.99E10 +/- 3.08E8	2.79E3	0.66E9



		EXO 30-150nm
Excell	Concentration average (particles/mL)	9.1E9
	Percentage (%)	23.567
Competitor	Concentration average (particles/mL)	5.49E9
	Percentage (%)	27.598

Product Information

Product	Catalog No.	Specification
MSC Serum-free Medium MH01	MH000-N011	500 mL
MSC Serum-free Medium MH02	MH000-N021	500 mL

Related Product	Catalog No.	Specification
OptiVitro® Recombinant Trypsin Digestive Solution RF01	RF000-N031	200 mL

ExCell

Your Cell, Our Culture

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