



# MSC StemPrime

The Next-Level  
Defined Medium

For Mesenchymal Stem Cells



#### **THE DIVERSITY OF MSCs**

Mesenchymal stem cells (MSCs) are present in various tissues throughout the human body.

# **VERSATILE ISOLATION & EXPANSION**

## *Of Human Mesenchymal Stem Cells*

They are commonly isolated from umbilical cord, adipose tissue, and bone marrow, resulting in diverse metabolic properties and handling requirements.



# MESENCHYMAL STEM CELLS

## *Determine Our Future Lives*

MSCs are adult stem cells exhibiting the potential to differentiate into most body cell types. Due to their immense regenerative capabilities, their immunomodulatory properties, and multilineage differentiation, **native MSCs play a crucial role in the cellular repair and regeneration processes.**

The diverse potential of MSCs has made them a promising tool to be used in regenerative medicine and clinical research:



### **CELL BIOLOGY RESEARCH**

Enhancing our understanding of disease mechanisms and cellular regeneration



### **IMMUNOLOGY & DRUG DEVELOPMENT**

Investigating how MSCs modulate major components of the immune response for future therapies



### **CELL THERAPY**

Utilizing the patient's own native or modified MSCs for tissue regeneration



### **TISSUE ENGINEERING**

Approaches to create organs and tissues from MSCs to treat severe injuries and diseases



**#StemPrime**  
Stay updated with exciting information, the latest developments, and fascinating insights on MSCs!

# MESENCHYMAL STEM CELLS

## EXPANSION

Safe expansion for four passages and beyond on pre-coated plates



MSC  
StemPrime

## ISOLATION

MSCs from bone marrow, adipose tissue, umbilical cord & more



MSC StemPrime

Defined or serum-supplemented isolation and expansion of human MSCs

recShield

Detachment Solution  
Coming soon



YOUR APPLICATION



OUR PRODUCT

## DETACHMENT

Animal-free gentle detachment of adherent cells



recShield  
Cryo Stem  
Coming soon



## CRYOPRESERVATION

Efficient storage and further treatment



Coming soon  
Differentiation  
Media



## DIFFERENTIATION

Differentiating MSCs into various specialized cell types

### Capricorn Scientific's Stem Cell Portfolio

The world of mesenchymal stem cells is vast and full of opportunities for discovery. Capricorn Scientific is building a reliable, high-performance portfolio designed to exceed the requirements of human MSC cultivation and set new standards. We provide animal component-free, high-quality products tailored to meet the demanding needs of human MSCs.

# MSC Stem Prime

## THE NEXT-LEVEL DEFINED MEDIUM

When culturing MSCs, maintaining homogeneity and multipotency is crucial. Cellular senescence and reduced adherence are additional factors that create bottlenecks in successful cultivation.

At florabio and Capricorn Scientific, we understand that cultivating MSCs involves more than just using a universal medium.

Therefore, we have developed a revolutionary product: MSC StemPrime, a state-of-the-art medium specifically designed to elevate your research and clinical applications.

**MSC StemPrime consists of a chemically defined medium and a recombinant growth factor supplement. Together, MSC StemPrime efficiently promotes the growth and proliferation of MSCs without differentiation.**



### THE NEXT-LEVEL OF CELL CULTURE SAFETY

Stem cell-based research and bio manufacturing require the highest standards of safety and reliability. recShield by Capricorn Scientific is a cutting-edge product line designed to protect your cells at every stage. From efficient cell detachment to cryopreservation solutions that safeguard viability, recShield provides the security your stem cell culture depends on.

- » **Reliable & Safe** Animal component-free products
- » **High Consistency** Optimized formulations for superior viability and consistency
- » **Versatile Solutions** Supporting all critical steps in MSC cultivation

# EXPLORE WHAT MAKES MSC StemPrime Remarkable

## CHEMICALLY DEFINED MEDIUM

Animal component-free, xeno-free formulation for high consistency in a reliable culture environment

Ultra Low Endo  
 $\ll 1 \text{ EU/ml}$

## ALL-IN-ONE SUPPLEMENT

Only one supplement to complement the medium for easy and carefree handling

## FOR ALL MSCs

Efficiently supports growth and proliferation of MSCs derived from various tissues

## FULLY SCALABLE

Seamless transition from R&D-scale cultivation to large-scale production



recShield

MSC StemPrime was developed by

florabio

# HIGH-PERFORMANCE ALTERNATIVE

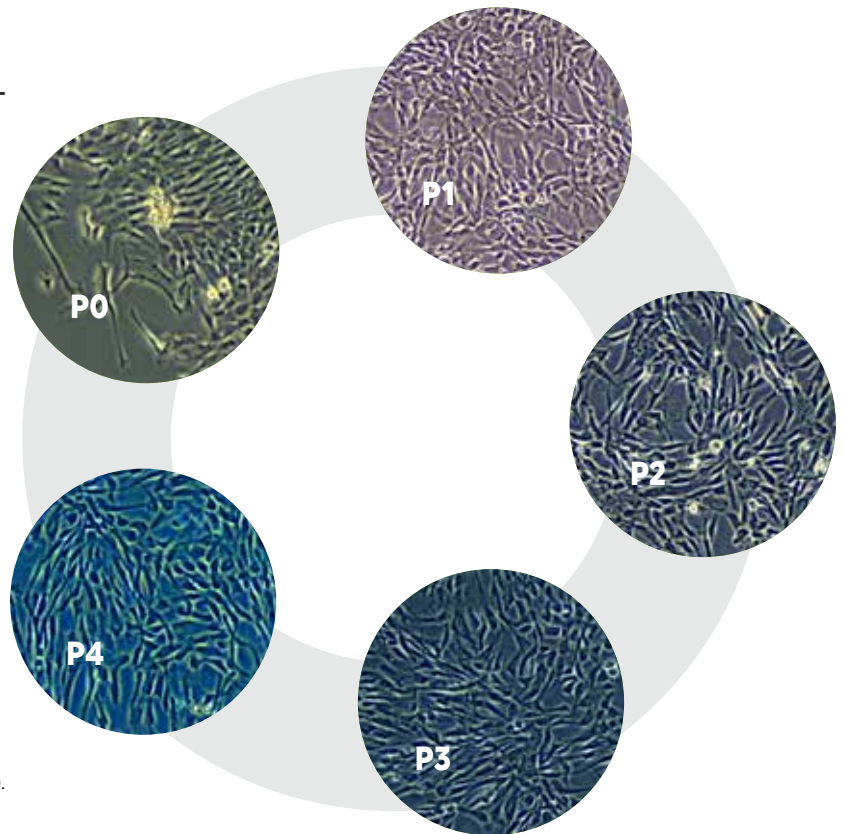
## To Traditional Serum-Containing Media

### MORPHOLOGY AND ATTACHMENT AFTER ISOLATION

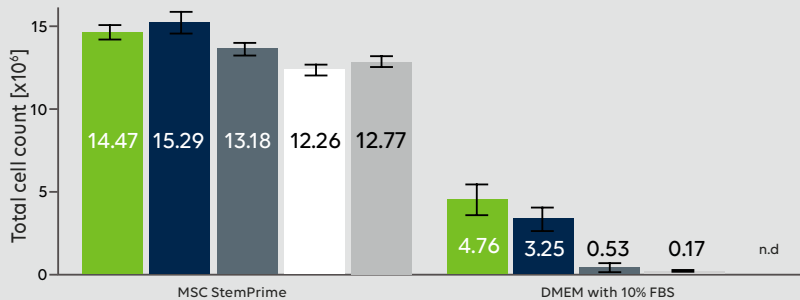
Developed by florabio, MSC StemPrime is a high-performance medium for the robust isolation and expansion of MSCs in research and clinical applications. To validate optimal performance, extensive *in vitro* testing was conducted, comparing MSC StemPrime to fetal bovine serum (FBS)-supplemented medium and competitor formulations.

Isolation of human MSCs from various tissues can be easily performed using MSC StemPrime. Umbilical cord derived MSCs (UC-MSCs) cultured in MSC StemPrime reveal superior cell attachment and characteristic fibroblast-like morphology. For certain tissues, addition of 2.0 to 2.5% human serum can be required.

**Fig. 1:** P0 Microscopic analysis of UC-MSCs 10 days after isolation from umbilical cord in MSC StemPrime (+ 2.0% Human AB serum on pre-coated culture ware); P1-P4 UC-MSCs expansion in MSC StemPrime (serum-free on pre-coated culture ware).



### DIFFERENTIAL EXPANSION CAPACITY OF UC-MSCs

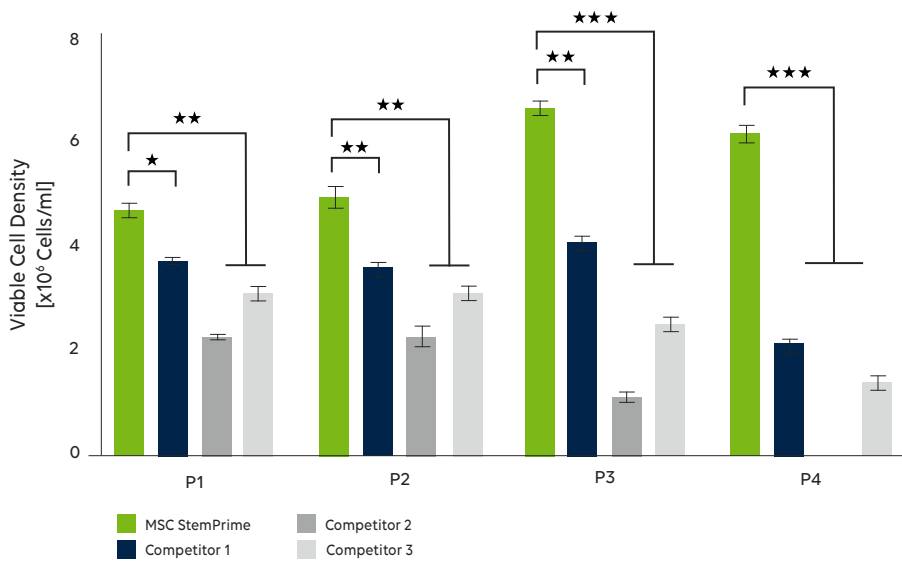


Expansion studies demonstrated that MSC StemPrime supports higher cell proliferation rates during isolation and expansion compared to DMEM supplemented with FBS.

**Fig. 2:** Cell growth of UC-MSCs in MSC StemPrime vs. DMEM with 10% FBS after isolation (P0) and during expansion (P1-P4).



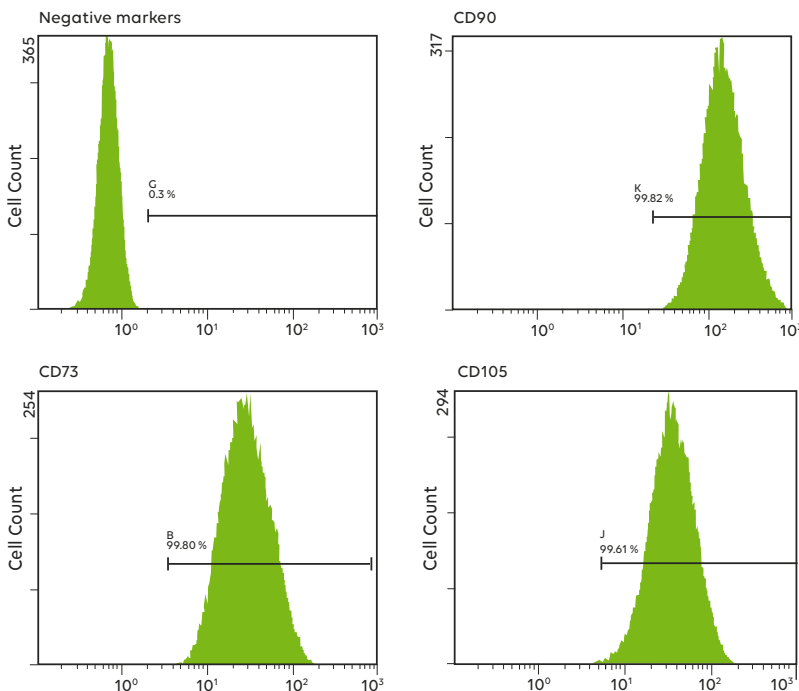




## PERFORMANCE COMPARISON WITH COMPETITOR MEDIA

A side-by-side evaluation of MSC StemPrime against leading commercial MSC media demonstrated superior cell viability and consistent growth across several passages!

**Fig. 3:** Proliferation analysis of MSCs across four passages in MSC StemPrime (serum-free on pre-coated culture ware) and competitor media. The indicated data shows the mean  $\pm$ SEM p-values: \*p<0.05, \*\*p<0.005, \*\*\*p<0.001



## SURFACE MARKER EXPRESSION

Flow cytometry analysis confirmed that MSC StemPrime maintains the classical MSC surface marker profile (CD73, CD90, CD105) across multiple passages while ensuring minimal expression of negative markers.

**Fig. 4:** Immunophenotyping results of UC-MSCs at passage 4 using FACS analysis. The positive markers, CD90 (99.82%), CD73 (99.80%) and CD105 (99.61%) were analyzed compared to the negative markers (0.3% of CD14, CD19, CD34, CD45, HLA-DR).

## ISO-CERTIFIED FACILITY



WFI grade water & EP/USP grade raw materials

## cGMP

Manufactured to cGMP standards



Robust quality management system

# Trust is a Matter of Quality

## GMP & Research Grade Production

**At Capricorn Scientific, we recognize that the reliability of raw materials and production processes is crucial for cell culture products, particularly for sensitive cells like MSCs. Therefore, MSC StemPrime is produced with the utmost care to ensure exceptional performance and reliability.**

In addition to our robust Quality Management System (QMS), we have a dedicated team with expertise in biopharmaceutical regulations. This team ensures that our ISO certified manufacturing processes comply with current Good Manufacturing Practices (cGMP), maintaining the highest standards in the biopharmaceutical sector.

## OUR COMMITMENT TO QUALITY ENCOMPASSES RESEARCH GRADE AND EXTENDS BEYOND. THEREFORE, WE MANUFACTURE MSC STEMPRIME IN TWO GRADES:

### MSC StemPrime GMP GRADE

Produced according to current Good Manufacturing Practices (cGMP) to comply with regulatory standards for clinical and commercial applications.

- » Suitable for highly regulated areas, such as MSC production
- » Additional quality testings and detailed documentation

Cat. No.: MSCG-K2 (500 ml)  
MSCG-K1 (100 ml)

### MSC StemPrime RESEARCH GRADE

Designed for preclinical studies, proof-of-concept experiments, and general academic research.

- » Suitable for research and development
- » Cost-efficient alternative for initial experiments

Cat. No.: MSCR-K2 (500 ml)  
MSCR-K1 (100 ml)



# ORDER

## Information

### PRODUCT

**MSC StemPrime Kit** **GMP Grade**  
 for Cultivation of Mesenchymal Stem Cells  
 1 x Chemically Defined Medium  
 1 x Recombinant Growth Factor Supplement

**VOL. CAT.NO.**

500 ml MSCG-K2

**MSC StemPrime Kit** **GMP Grade**  
 for Cultivation of Mesenchymal Stem Cells  
 1 x Chemically Defined Medium  
 1 x Recombinant Growth Factor Supplement

100 ml MSCG-K1

### PRODUCT

**MSC StemPrime Kit** **Research Grade**  
 for Cultivation of Mesenchymal Stem Cells  
 1 x Chemically Defined Medium  
 1 x Recombinant Growth Factor Supplement

**VOL. CAT.NO.**

500 ml MSCR-K2

**MSC StemPrime Kit** **Research Grade**  
 for Cultivation of Mesenchymal Stem Cells  
 1 x Chemically Defined Medium  
 1 x Recombinant Growth Factor Supplement

100 ml MSCR-K1

### PRODUCT

**Human Serum**, Type AB  
**Human Serum**, Converted

**VOL. CAT.NO.**

100 ml HUM-3B  
 100 ml HUM-1B

ALSO AVAILABLE WITHOUT PHENOL RED - CONTACT US!



### GMP GRADE

- Chemically Defined
- Animal Component-Free
- Ultra-Low Endotoxin
- Available Without Phenol Red

**Documentation:**  
 Certificate of Analysis  
 Certificate of Origin  
 Certificate of Conformity  
 ACF Statement  
 Viral Safety Statements

For GMP Bioprocessing and Highly Regulated Application Fields

### RESEARCH GRADE

- Chemically Defined
- Animal Component-Free
- Ultra-Low Endotoxin
- Available Without Phenol Red

**Documentation:**  
 Certificate of Analysis

For Research Use

## THE RIGHT CHOICE FOR YOUR CELLS



Fast and Efficient  
Order Processing



Customer-Oriented  
Product Flexibility



Your Partner in  
Cell Culture

