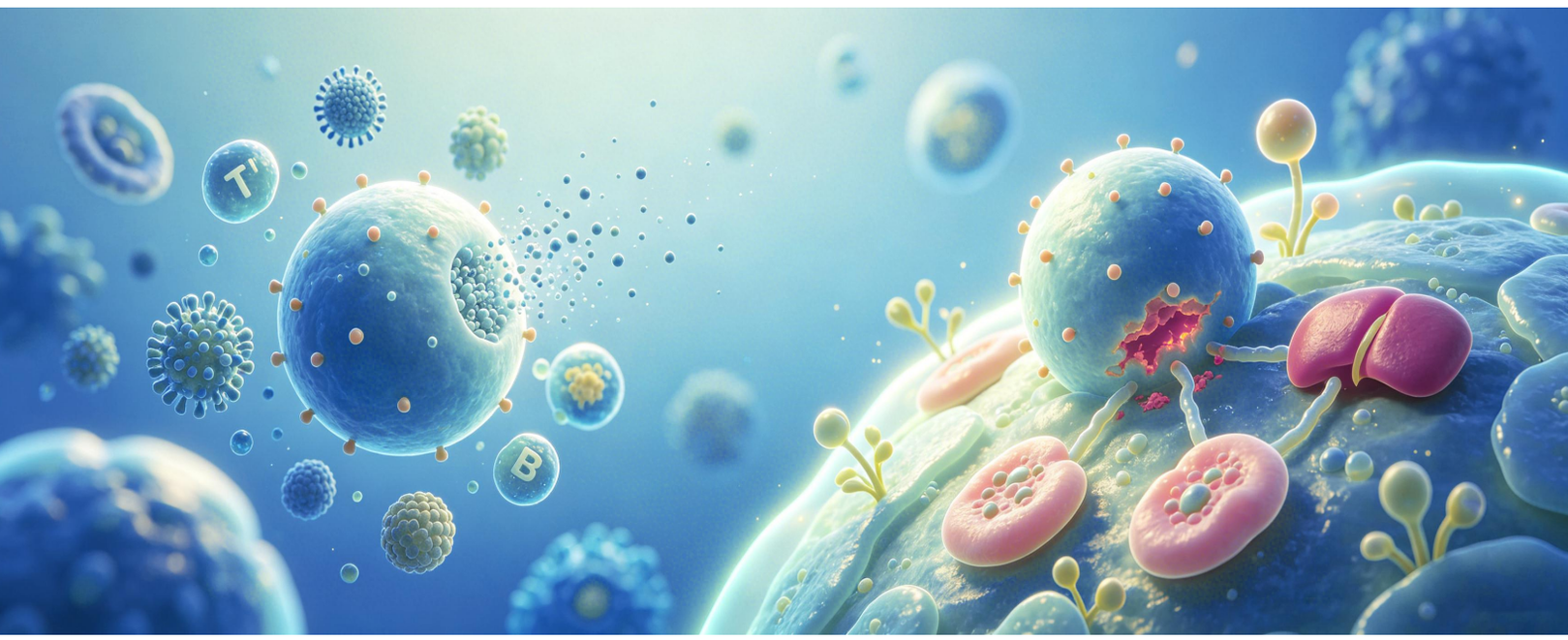
Biocean Group

Advanced Cryo Science,
Promising Organ Futures.

CORE™ MSC Optimization-free Medium



Core seed cells for regenerative medicine

Mesenchymal stem cells (MSCs) are key 'seed cells' in regenerative medicine; their unique biology underpins their central role in clinical and research applications:

• Self-renewal | • Multilineage differentiation | • Immunomodulation | • Paracrine function

It is now widely used in clinical research on refractory diseases, tissue repair/engineering, and advanced fields like aesthetic medicine and anti-aging.

Specifically developed for in vitro culture of MSCs

It overcomes the limitations of traditional serum-based culture—such as high batch variability, xenogeneic risks, and low safety—and provides a core solution for large-scale, standardized, and safe MSC production.

Animal component-free

Chemically defined

GMP-grade production

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Key Strengths

Strength 1: Safe and Worry-Free

Serum-Free / Animal Component-Free

Eliminates animal-derived contamination risks (e.g., viruses, mycoplasma), enhancing biosafety.

Eliminates the risk of immune rejection

Eliminates immune rejection risks from xenogeneic proteins and undefined serum components, ensuring accurate results.

Strength 2: Stable and Controllable

Minimal batch-to-batch variation

Defined components and standardized processes minimize batch variability, ensuring consistent performance.

Reproducible experimental results

Provides a stable, reliable, and reproducible foundation for cell research, drug development, and bioproduction, reducing R&D and manufacturing risks.

Strength 3: Clinically Compliant

GMP-compliant

Production environment and processes strictly follow GMP standards, ensuring quality at the source to meet stringent clinical requirements.

Direct clinical translation

Provides a complete compliance system for cell therapy products, bridging R&D and clinical application for a seamless lab-to-clinic transition.

Strength 4: Efficient and Easy-to-Use

Reduced media change frequency

Optimized formulation extends culture duration, reduces manual steps, and minimizes contamination risk.

Supports high-density culture

Designed for large-scale production: supports high-density expansion, increases yield, and boosts efficiency.

Performance Highlights

Uniform and stable cell morphology
From P1 to P15, cell morphology remains uniform and stable, with no spontaneous differentiation and high morphological consistency.

Excellent proliferation capacity
Long-term expansion potential with high cell viability maintained over multiple passages.

Stable stem cell phenotype
Core markers are stably and continuously expressed, effectively maintaining stem cell characteristics without loss of stemness.

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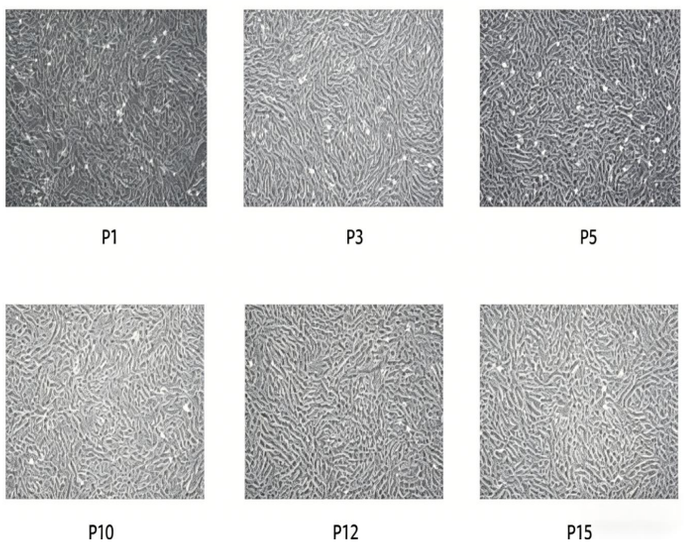
Stable cell morphology

Stable morphology during long-term passaging

During long-term passaging, MSCs cultured with this product maintain a typical fibroblast-like morphology, with clear, uniform, and full cell contours, and no signs of differentiation throughout.



Key Indicator Validation (P1-P15)

☑ Morphological Uniformity

Cell size and morphology are highly consistent across passages, with no significant differences.

Stemness Maintenance

Continuously maintains an undifferentiated state, effectively preserving the multilineage differentiation potential of stem cells.

Flow Cytometry Validation

During long-term in vitro expansion, the formulation of this product effectively maintains the core biological characteristics of MSCs, ensuring long-term stability of the cell surface marker expression profile.

MSC 细胞表面 Mark						
	CD34	CD45	CD29	CD73	CD90	CD105
MSCP5	0.20%	0.14%	99.9%	99.9%	100%	99.9%
	0.02%	0.038%	100%	100%	100%	100%
MSCP10	0.25%	0.51%	100%	100%	99.9%	100%
	0.31%	0.54%	99.9%	100%	99.9%	99.9%
MSCP15	0.075%	0.097%	100%	100%	99.9%	99.2%
	0.09%	0.048%	99.9%	100%	100%	100%

Positive marker expression

> 99%(CD90 / CD73 / CD105)

Characterization Conclusion:
Rigorous multi-parameter flow cytometry validation confirms that cells maintain high purity and retain core stem cell characteristics throughout multiple passages.

Negative marker expression

< 1%(CD34 / CD45 / CD11b)

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Stable cell morphology

Core Technology: Patented Blood Substitute Technology

Patented Technology Platform

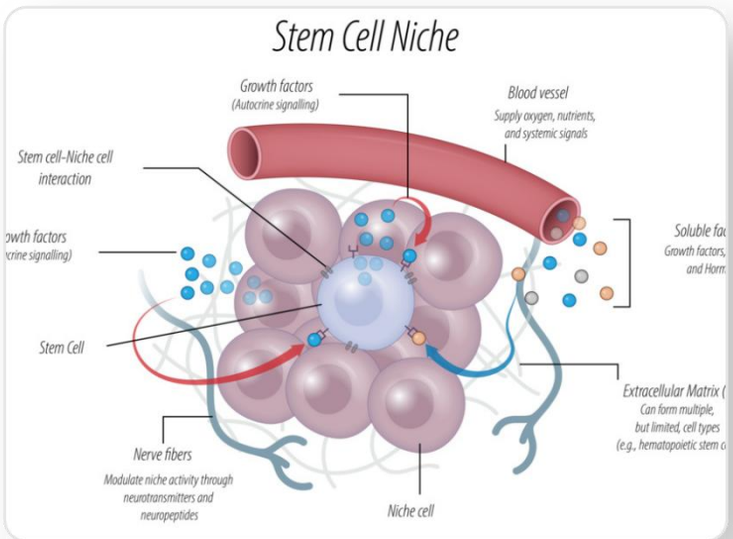
Leveraging our self-developed and patented 'Serum-Replacement' technology platform, it eliminates from the source the safety and batch variation issues associated with traditional serum-based culture.

Precise Formulation

Using precise algorithms to formulate recombinant human proteins, growth factors, cytokines, trace elements, and other key active ingredients, achieving highly controllable and standardized culture system components.

Mimics the physiological microenvironment

Maximally restores and mimics the in vivo physiological microenvironment, providing stable and suitable conditions for cell growth and expansion, thereby ensuring cell activity and function.



Strict quality control

Strict raw material selection

Strictly selected compliant suppliers; every batch of raw materials undergoes full incoming inspection, preventing substandard materials from entering production at the source.

Standardized production

B+A-grade GMP cleanroom standards, fully enclosed automated production line, minimizing human intervention and contamination risk.

Batch-by-batch testing

Full testing for key indicators such as sterility, mycoplasma, and endotoxins, adhering to the principle of 'batch-by-batch testing' to ensure every batch meets quality standards.

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