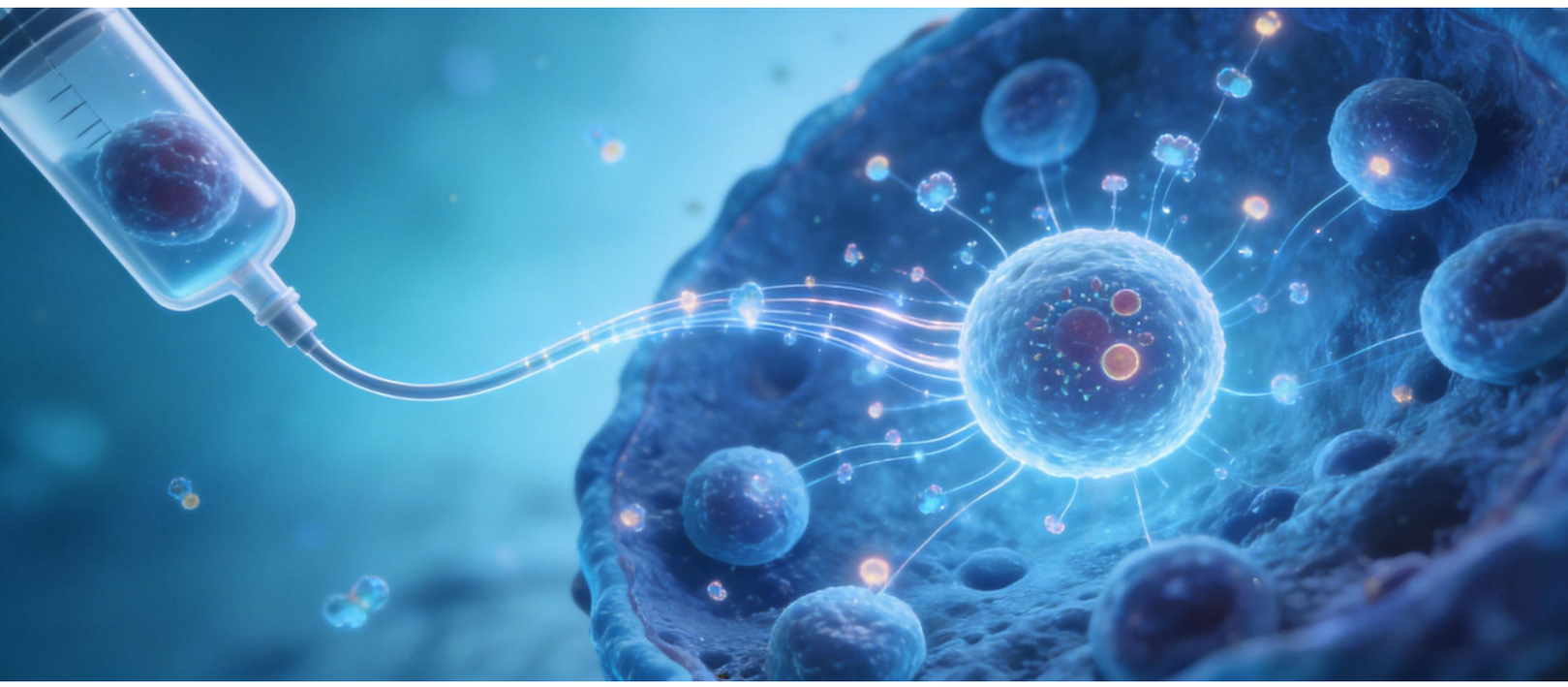
Biocean Group

Advanced Cryo Science,
Promising Organ Futures.

Cyro Safe-HSC Medium Cat No:BCHSC



Innovative low-temperature technology solutions

Based on core technologies of **pre-dehydration + ice seeding and localized vitrification**, this approach starts from fundamental physical cooling principles to fundamentally overcome the limitations and pain points of traditional cryopreservation techniques.

Safe and non-toxic formulation system

A strictly **serum-free** cryopreservation formulation is used to minimize cell damage caused by exogenous contamination and chemical toxicity.

Broadly compatible with precious cell types

Specifically developed for **immune cells, stem cells, and primary cells**, ensuring high post-thaw viability, strong functional activity, and stable cellular performance.

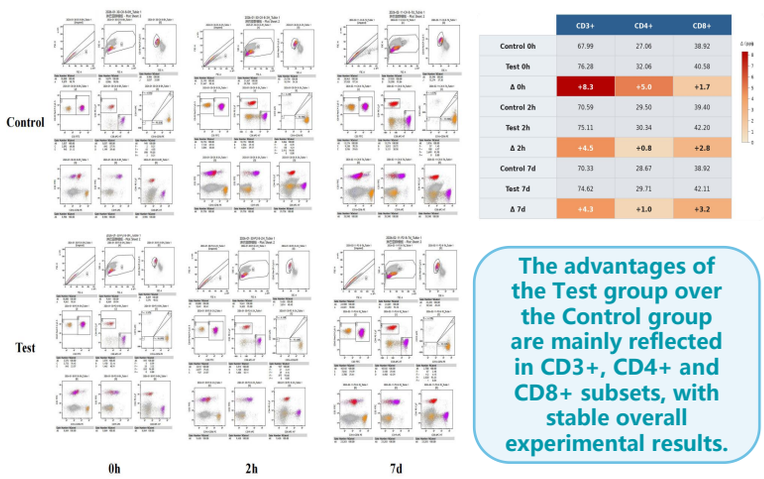
Biocean Group

"High Efficiency" & "High Safety"

Breakthrough in Safe Substitution + Multi-dimensional Protection Enhancement + Comprehensive Safety Verification

In Vitro Cryopreservation Validation of Lymphocyte Subsets

- **Detection at three time points (0 h / 2 h / 7 d):**
  The differences between the Test group and Control group are overall controllable.
- **The maximum percentage point advantage of the Test group over the Control group reaches 8.30 percentage points.**

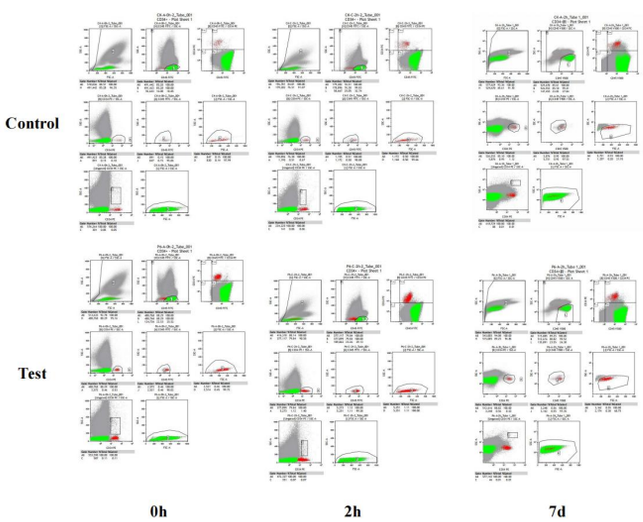


	CD3+	CD4+	CD8+
Control 0h	67.99	27.06	38.92
Test 0h	76.28	32.06	40.58
Δ 0h	+8.3	+5.0	+1.7
Control 2h	70.59	29.50	39.40
Test 2h	75.11	30.34	42.20
Δ 2h	+4.5	+0.8	+2.8
Control 7d	70.33	28.67	38.92
Test 7d	74.62	29.71	42.11
Δ 7d	+4.3	+1.0	+3.2

The advantages of the Test group over the Control group are mainly reflected in CD3+, CD4+ and CD8+ subsets, with stable overall experimental results.

In Vitro Cryopreservation Validation of CD34+ Cells

- **Detection at three time points (0 h / 2 h / 7 d):**
  The relative proportion of CD34+ cells in the Test group is overall superior to that of the Control group,achieving excellent preservation performance for cryopreserved hematopoietic stem cells.



Unit: Proportion of CD34+ cells in nucleated cells (%).
Difference = Test group value − Control group value

Core Innovation Advantages of Biocean Group

01. Serum-free formulation

Chemically defined, fundamentally eliminating the contamination risks, immunogenicity, and batch-to-batch variability associated with traditional serum. Can be stored at room temperature.

03.High cell recovery rate

Effectively inhibits ice crystal formation during freezing, reduces cell damage, fully preserves cell viability and structural integrity, and improves post-thaw cell recovery.

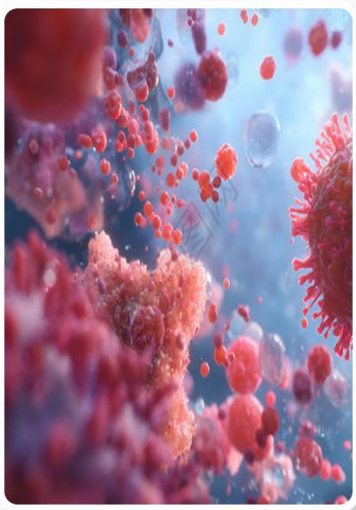
02. Inherently non-toxic

An optimized DMSO-free formulation is adopted, effectively eliminating the chemical toxicity associated with conventional cryoprotectants and minimizing cell damage.

04.Convenient wash-free

Simplifies the cell thawing process, reduces hands-on time, and significantly improves overall experimental efficiency.

Hardcore performance data



Versatile Compatibility – Tailored for Specific Cell Types

Specifically designed for MSCs (mesenchymal stem cells) and various immune cells, precisely compatible with CAR-T, NK, PBMC and other cell types. Featuring a non-toxic and safe formulation, it safeguards cell health at the source.

Superior Recovery – Balancing High Viability and High Activity

Achieves >90% cell viability after cryopreservation and thawing, with core activity and biological functions fully preserved. Effectively inhibits ice crystal damage, and the serum-free composition significantly reduces contamination risks, comprehensively meeting the high standards of cell therapy and research applications.

Key Strengths

Embarking on a new era of low-damage cryopreservation: Via DMSO-free and fully compliant component technology, we redefine the benchmarks for safety and efficacy in cell therapy.

Core Technology

DMSO-Free, Fully Compendial Components

Survival rate of immunodeficient mouse transplantation: 37.5% → 87.5%

Pre-dehydration + Ice-seeding technology

Intracellular ice crystal ratio: 90% → 10%

Multi-mechanism synergistic protection synergistic protecti

Trehalose + Ascorbic acid protection system, achieving an over 10% improvement in cell viability.

Safety & Compliance

Clinical Safety & Compliance

Pharmacopoeia-derived formula, DMSO-free

Over 100 pre-clinical validations



Market & Standards

Industrial Standard Leadership:

- Co-authored industry consensus guidelines.
- Driven industrialization through med-research collaborations.

Market Competitive Moat:

- Safer alternative to DMSO-based media, solving cytotoxicity and core pain points.
- Delivers superior viability and better transplant success.

Innovative Effects

Leveraging compendial component screening technology, we have innovatively developed a fully compendial, DMSO-free, serum-free formulation, ensuring clinical infusion safety at the source.

Through precise screening and formulation of compendial components, we have successfully established a multi-mechanism synergistic protection system featuring trehalose and ascorbic acid, achieving a consistent 10% improvement in cell viability over competing products.

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A dual breakthrough in high efficacy and high safety

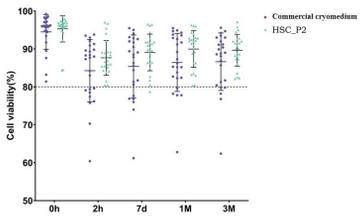
Validated by CAMS Hematology Hospital, compliant with Class III medical device standards.

●DMSO-free, serum-free, fully compendial formulation
Deficient mouse transplant survival rate: 37.5% → 87.5%

●Core innovation: Pre-dehydration + Ice seeding technology
Cell ice crystal ratio: 90% → 10%
Cell viability increased by over 10%

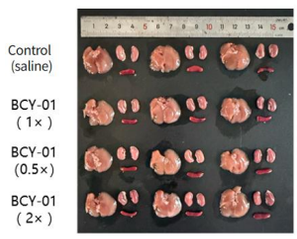
In vitro cryosurvival validation

Continuous patient-specific cryosurvival monitoring — higher viability at all stages vs. competitors.



Safety validation

No toxicity to mouse liver, spleen, or kidney at all concentrations.



Cell Preservation Solution-Cyro Safe-HSC Medium

DMSO-free, serum-free formulation with multi-mechanism synergy provides a safer and more comprehensive stem cell protection strategy.

Cell Preservation Solution
Cat. No: BCHSC
Specifications: 100 mL/bag x 6 bags



	DMSO	DMSO-free
Preparation	① DMSO is highly toxic to cells at room temperature ② Diluting DMSO is an exothermic process Preparation must be performed in an ice-water bath, yet 15%–20% of cells are still lost	Non-toxic, minimal cell loss
Preservation	Direct and indirect toxicity to cells	Non-toxic, minimal cell loss
Recovery	① Washing out DMSO leads to stem cell loss and damage ② Post-thaw death of granulocytes in the mixture produces flocculent precipitates, interfering with stem cell detection and infusion	No washing required No flocculent precipitation for one hour, facilitating quality control

Biocean Group

Focused on cryobiopreservation technologies, led by international experts in cryomedicine and jointly developed by universities and enterprises. We strive to deliver high-quality cell preservation products and fuel the vigorous advancement of cell therapy and regenerative medicine.

Non-toxic

Wash-free

Serum-free

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