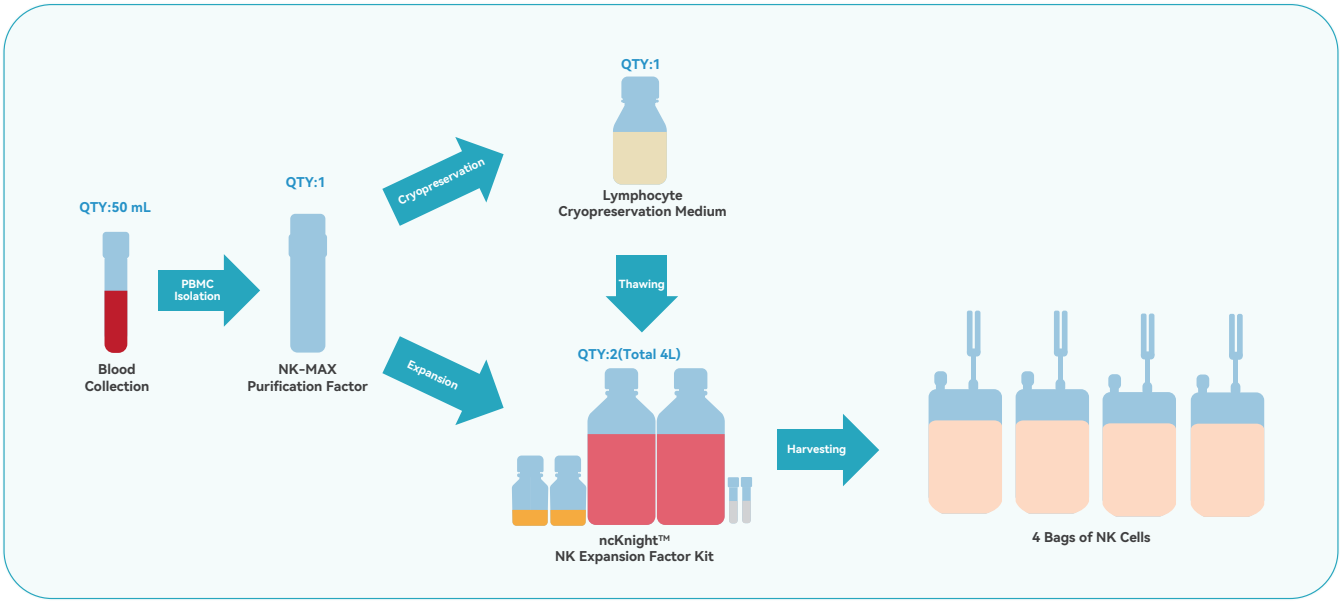
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Shownin Biotechnologies Product System for NK Cells

Using only **50 mL of blood**, NK cells can be expanded 4-fold, yielding **3 billion cells** every 14 days, with $CD3^-$ $CD56^+$ expression more than **90%** and $CD3^+$ cells expression less than 1%.



- **GMP Compliant Manufacture**;
- **FDA Drug Master File (DMF) Available**;
- **IND Support**: Successfully supported multiple IND-approved for NK therapy;
- **Extensive Clinical Track Record**: Utilized in thousands of clinical trial applications for NK therapies.

Product System for NK Cells

Product	Cat. No.	Amount
ncKnight™ NK Expansion Factor Kit	SN-03-0030	1 kit
NK-MAX Purification Factor	SN-03-0050	625 µL
Lymphocyte Cryopreservation Medium	SN-06-1410	50 mL

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ncKnight™ NK Expansion Factor Kit

Cat. No. SN-03-0030



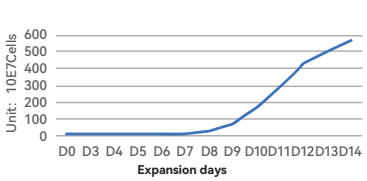
ncKnight™ NK Expansion Factor Kit (SN-03-0030) is an independently developed kit by Shownin Biotechnologies, designed for the expansion and culture of human natural killer (NK) cells. This defined, cytokine-only culture system enables efficient expansion of NK cells derived from human peripheral blood and umbilical cord blood. When starting from PBMCs containing approximately 10% NK cells, a 5,000–10,000-fold expansion can be achieved within 14–15 days. The resulting NK cell population demonstrates high purity, with $CD3^-$ $CD56^+$ expression levels exceeding 80–95%.

- ☑ Low blood draw requirement: 10–20 mL peripheral blood is sufficient for one round of NK expansion. Minimum starting cell requirement: Supports expansion initiation with 5×10^6 to 1.5×10^7 mononuclear cells;
- ☑ High expansion rate: Achieves 5000 to 10000-fold NK cell expansion in 14 days;
- ☑ High purity: Expanded NK cells exhibit purity exceeding 80-95% ($CD3^-$ $CD56^+$).

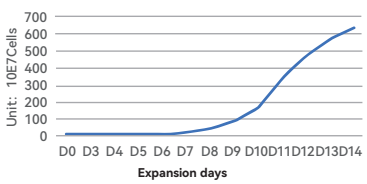
Product	Cat. No.	Amount	Quantity
ncKnight™ NK Expansion Factor Kit Contains:	**SN-03-0030**	**1 kit**	**1**
ncKnight™ NK Medium Basal Medium	SN-03-0022	1000 mL	2
ncKnight™ NK Medium Supplement	SN-03-0021	40 mL	2
ncKnight™ NK Expansion Fator A	SN-03-0031	270 μL	1
ncKnight™ NK Expansion Fator B	SN-03-0032	120 μL	1

NK Cell Expansion Performance

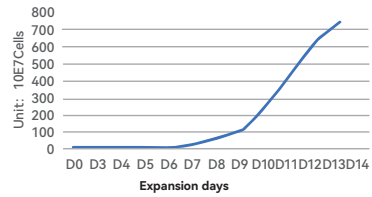
Sample 1 NK Expansion Curve



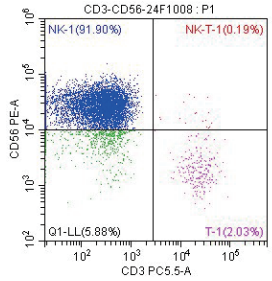
Sample 2 NK Expansion Curve



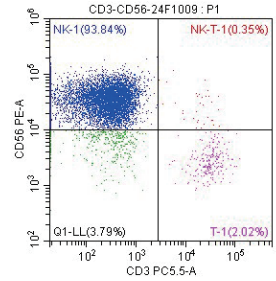
Sample 3 NK Expansion Curve



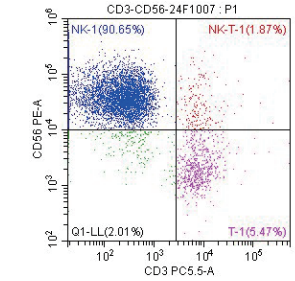
Sample 1 $CD3^-$ $CD56^+$ 91.90%



Sample 2 $CD3^-$ $CD56^+$ 93.84%



Sample 3 $CD3^-$ $CD56^+$ 90.65%



▲ All samples started with 10-20 million fresh/frozen PBMCs, using the ncKnight™ NK Expansion Factor Kit. After 13-14 days of expansion in a 2 L culture system, 5-7 billion NK cells can be harvested in a single collection.

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Lymphocyte Cryopreservation Medium

Cat. No. SN-06-1410

Lymphocyte Cryopreservation Medium (SN-06-1410) is a serum and xeno-free cryopreservation medium that can support the efficient cryopreservation of various immune cells such as PBMCs and NK cells. This is a ready-to-use, safe and efficient cryopreservation medium with low DMSO content.

- √ Pre-formulated;
- √ Serum-free, Xeno-free;
- √ GMP Compliant Manufacture;
- √ Pharmaceutical grade components;
- √ Low DMSO content;
- √ Ready to use.



Product	Cat. No.	Amount	Quantity
Lymphocyte Cryopreservation Medium	SN-06-1410	50 mL	1

Cryopreservation and Post-thaw Performance

- Serum-Free
- Animal-Derived Component Free
- Cell viability ≥90%
- Support the efficient cryopreservation of various immune cells such as PBMCs and NK cells
- Completed the safety evaluation of adjuvants for cell drug preparations
- Facilitated the R&D and clinical translation of multiple drugs

After frozen-thawing PBMC

Cell viability**≥90%** | Live cell recovery**≥90%**

The 24h after frozen-thawing PBMC

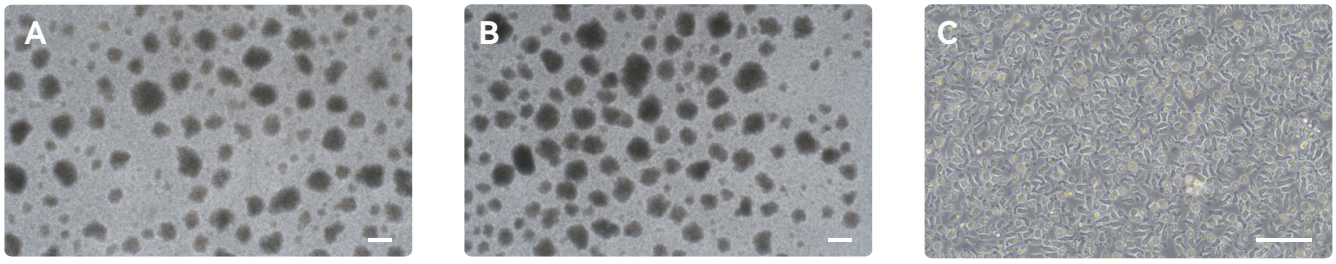
Cell viability**≥90%** | Live cell recovery**≥80%**

After frozen-thawing NK cells

Cell viability**≥90%** | Live cell recovery**≥80%** | Expression of protein **remains unchanged** after thawing

After thawing the NK cells cryopreserved long term (> 24 months)

Cell viability**≥90%** | Live cell recovery**≥80%** | Expression of protein **remains unchanged** after thawing



▲ Cell morphology of frozen-thawed NK cells cryopreserved in Lymphocyte Cryopreservation Medium;
▲ A, B, C: the NK cell morphology in 24 hours after cell thawing, respectively. Scale bar: 200 μm.

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NK-MAX Purification Factor

Cat. No. SN-03-0050



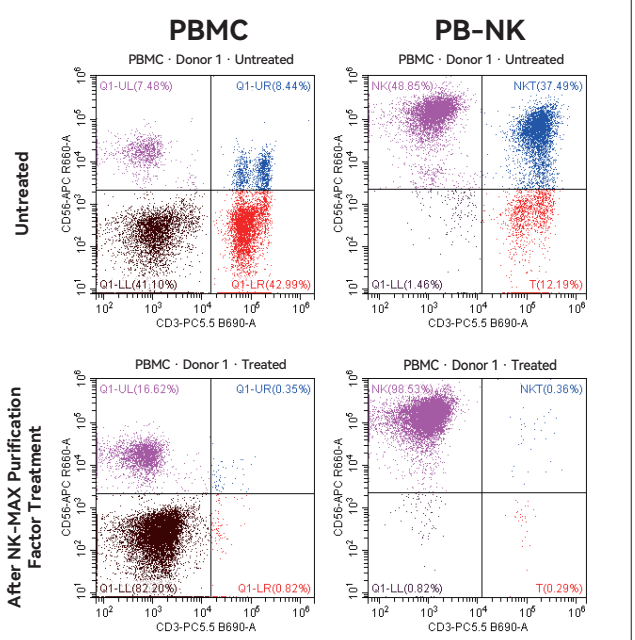
NK-MAX Purification Factor (SN-03-0050) is a specialized reagent used during the separation of mononuclear cells from fresh peripheral blood or cord blood. It is designed to deplete $CD3^+$ cells from the isolated PBMC population, thereby increasing the proportion of $CD3^-$ $CD56^+$ NK cells after expansion. When used in combination with NK Expansion Kit (RP03030), NK-MAX Purification Factor enables the generation of NK cells with exceptionally high purity, with $CD3^-$ $CD56^+$ expression exceeding 95% and $CD3^+$ cells comprising less than 1% of the final population.

- Easy to operate: Pre-incubation for 20 minutes before density;
- Efficient $CD3^+$ cell removal: The proportion of $CD3^+$ cells in expanded NK cells is <1%;
- High purity : Expanded NK cells ($CD3^-$ $CD56^+$) have a purity greater than 95%.

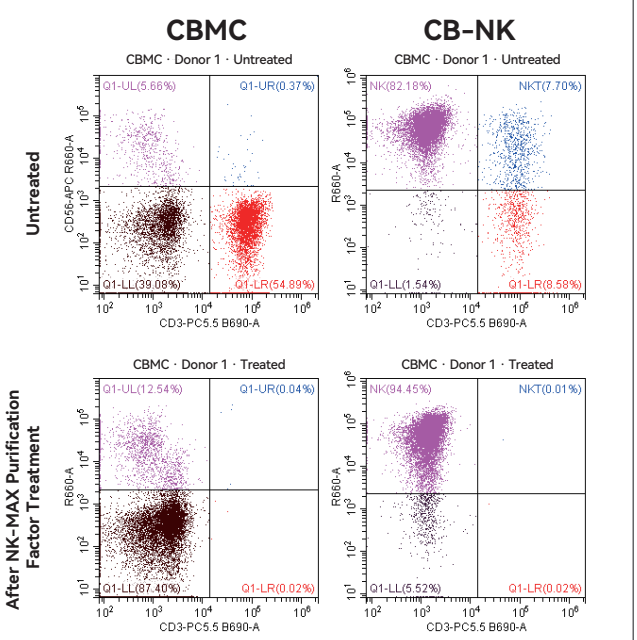
Product	Cat. No.	Amount	Quantity
NK-MAX Purification Factor	SN-03-0050	625 μL	1

NK Cell Expansion Performance

Peripheral Blood Expansion



Cord Blood Expansion



▲ Peripheral blood and cord blood samples, after treatment with NK-MAX Purification Factor, significantly removed the $CD3^+$ cell population. Following expansion with NK Expansion Kit (RP03030), a notable increase in NK cell purity ($CD3^-$ $CD56^+$) was observed (Peripheral blood, untreated group 48.85% vs treated group 98.53%; cord blood, untreated group 82.18% vs treated group 94.45%). The $CD3^+$ cell proportion < 1% in both groups.

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