

NK pure factor culture set

| Applicable samples | Specification | Cat No. | Performance description | Expiry date |
|----------------------|-------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------|-------------|
| Peripheral blood | 2 vials of NK cell serum free media (1 L) + NK cell induction factor kit (peripheral blood) | NC0102+AN0102.2 | Cell count: more than 5 billion; positive rate of normal sample >70%, positive rate of special samples >40% | 12 month |
| Umbilical cord blood | 2 vials of NK cell serum free media (1 L) + NK cell induction factor kit (umbilical cord blood) | NC0102+AN0103.2 | Cell count:4-5 billion, positive rate> 70% | 12 month |

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Peripheral Blood NK Pure Factor Serum Free Media 4.0

- Stable culture result
- Standardized operation for different samples
- Lower requirements for the initial positive rate of the sample
- Initial blood sample 30 mL



Product Introduction

Natural killer cells (NKC)s are major immune cells in the body. Activated NK cells can secrete proinflammatory cytokines and trigger the lysis of target cells induced by perforin and granzymes. In addition to being able to precisely attack abnormal cells, the NK cells can modify the immune status of body, therefore, the NK Cells play a crucial role in anti-tumor and immune regulation. NK Cells are a hot research topic in the fields of cell therapy and immunology. However, since it is difficult to cultivate NK cells, it is difficult to achieve both "high purity" and "high cell count". For the peripheral blood NK culture, it is affected by the positive rate of the initial sample in the early stage, and the researchers are deeply troubled by maintaining consecutive proliferation of NK cells and stable positive rate in the later stage.

The peripheral blood NK serum free culture set 4.0 newly developed by Yocon Biology can make normal peripheral blood samples (initial positive rate above 10%) expanded by more than 180 times the total cell count within 14-16 days, with the positive rate of above 70%. Special peripheral blood samples (initial positive rate below 10%) can be expanded by more than 180 times the total cell count within 14-16 days, with the positive rate of above 40%. The newly upgraded peripheral blood NK culture process can achieve the propagandized performance just by controlling the seeding conditions of the initial peripheral blood PBMCs, and culturing cells according to the recommended supplement process. The complex culture method of monitoring cell density of NK is changed. In addition, this product is upgraded to prolong the NK proliferation time, and shows good results in maintaining consecutive proliferation and stable positive rate in the later stage of culture.

Specification

| Nomenclature | Use | Specification | Storage temperature | Expiry date |
|-------------------------------------------------------------------|-------------------------------------------------------|---------------------|---------------------|-------------|
| NK cell serum free medium | NK cell in vitro culture | 1000 mL/vial × 2 | 2-8°C | 12 month |
| NK cells Induction factor kit (peripheral blood 2 L system) | YC00A: Coat culture flasks for use in initial culture | 1 vial, 500 μL/vial | -20°C | 12 month |
| | YC00B: Add in initial culture | 1 vial, 500 μL/vial | | |
| | YC00C: add in medium B | 1 vial, 500 μL/vial | | |
| | YC005: add to the medium for use, each/1L | 2vials | | |
| | Gentamicin: add to the medium for use, 100 μL/1L | 1 vial, 300 μL/vial | | |

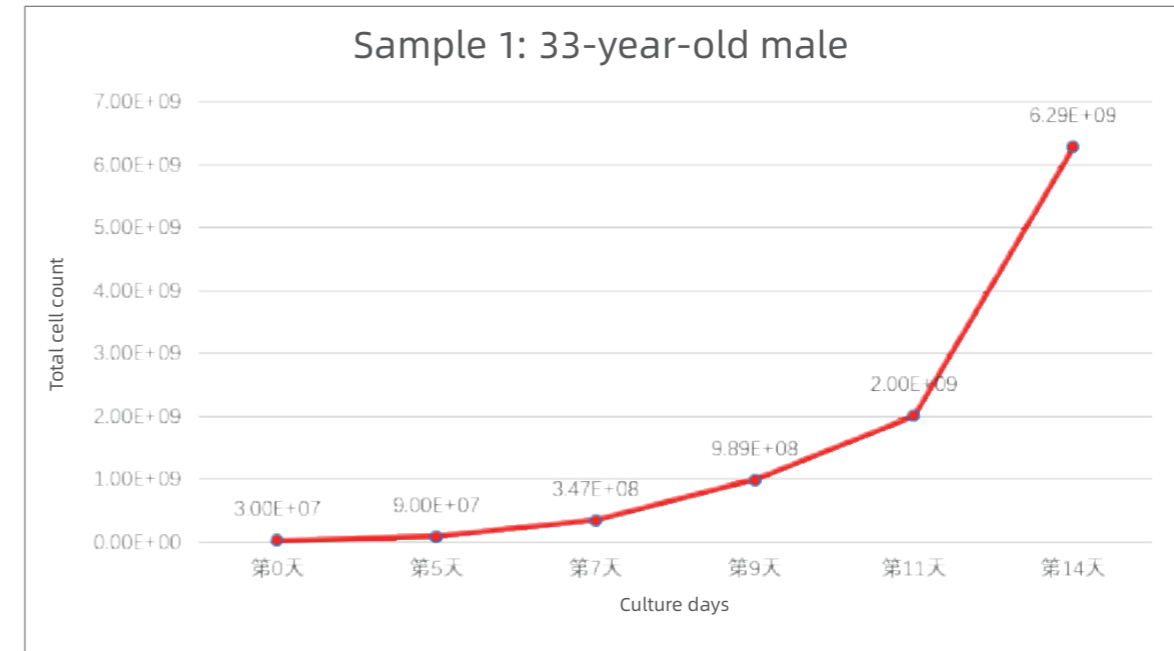
Culture process

| Reference supplement procedure | | | | | |
|--------------------------------|------------------|-------------------|--------------|--------------|---------------|
| Time | Culture supplies | Supplement volume | Total volume | Plasma ratio | Plasma volume |
| d0 | 2×T25 | 20 | 20 | 10% | 2 |
| d3 | 2×T25 | 40 | 60 | 5% | 2 |
| d5 | T175 | 120 | 180 | 5% | 6 |
| d7 | Culture bag | 180/360 | 360/540 | 1% | 3.6 |
| d9 | Culture bag | 360/540 | 720/1080 | 0% | 0 |
| d11 | Culture bag | 720/920 | 1440/2000 | 0% | 0 |
| d13 | Culture bag | 560 | 2000 | 0% | 0 |

Sample 1

33-year-old male normal sample (initial positive rate 16.2%)

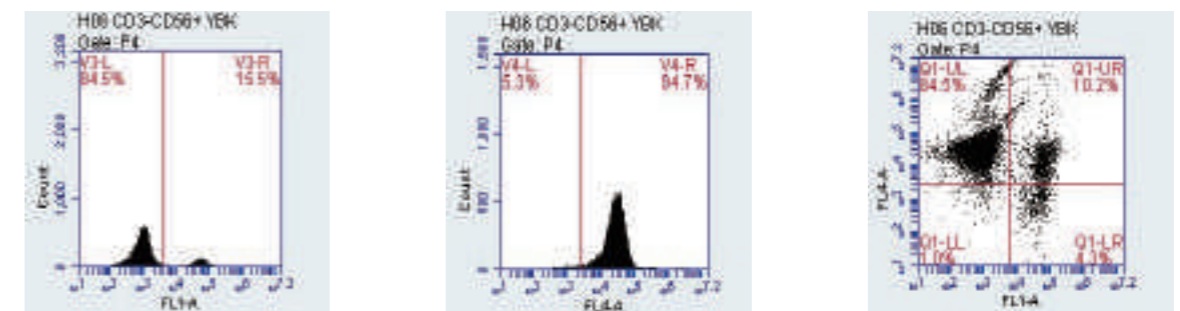
Results: 14-day NK cell count: 6.29 billion, positive rate: 84.5%



Supplement process

| Handling time | Supplement volume (mL) | Total volume (mL) | Plasma volume (mL) | Plasma ratio (mL) | Plasma volume (mL) |
|---------------|------------------------|-------------------|--------------------|-------------------|--------------------|
| d0 | 0 | 10×2 | 2 | 10% | T25 |
| d3 | 20×2 | 30×2 | 2 | 5% | T25 |
| d5 | 120 | 180 | 6 | 5% | T175 |
| d7 | 360 | 540 | 0 | 0% | Bagging |
| d9 | 540 | 1080 | 0 | 0% | Bagging |
| d11 | 920 | 2000 | 0 | 0% | Bagging |

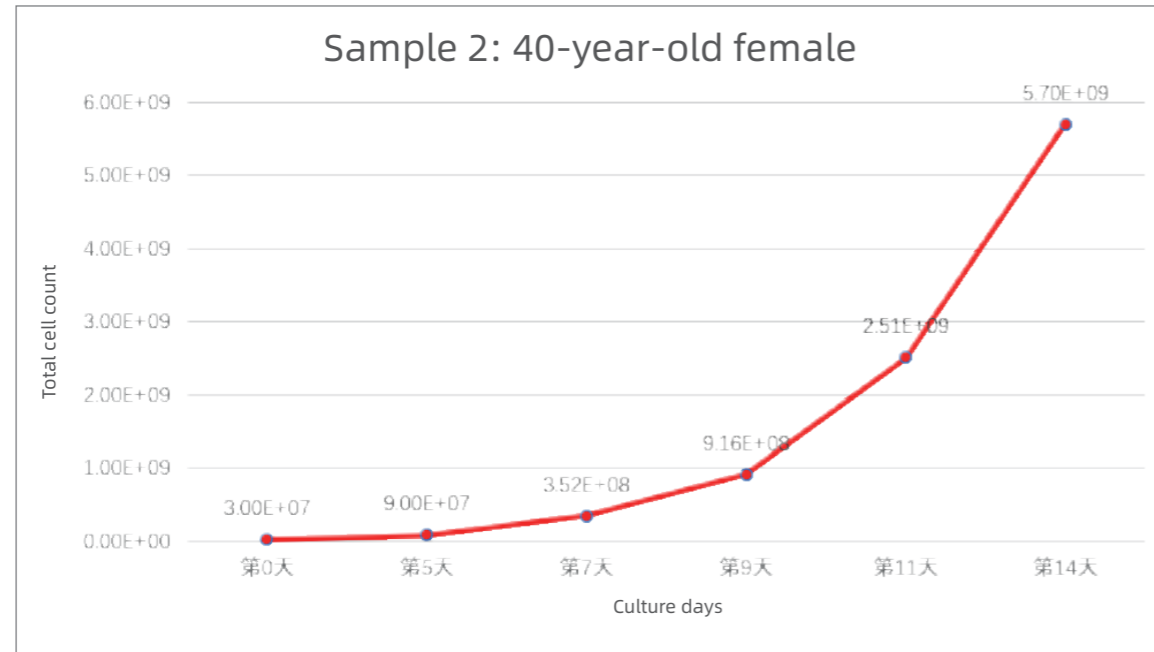
NK positive rate



Sample 2

40-year-old female sample with a low positive rate (initial positive rate 8.1%)

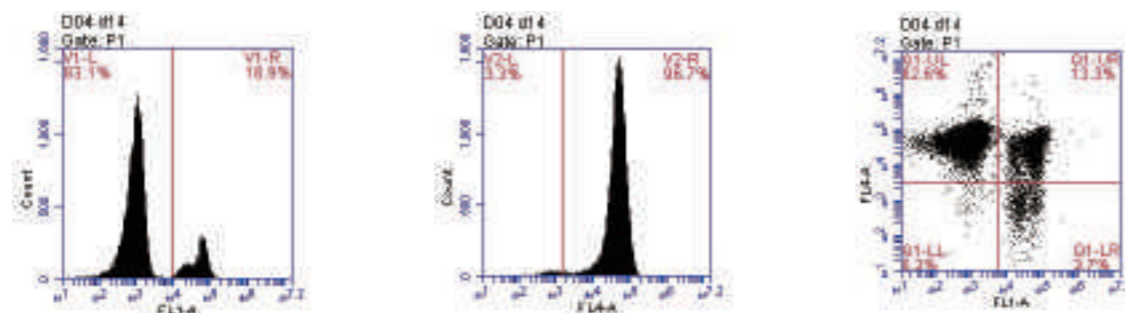
Results: 14-day NK cell count: 5.7 billion, positive rate: 82.6%



Supplement process

| Handling time | Supplement volume (mL) | Total volume (mL) | Plasma volume (mL) | Plasma ratio (mL) | Plasma volume (mL) |
|---------------|------------------------|-------------------|--------------------|-------------------|--------------------|
| d0 | 0 | 10×2 | 2 | 10% | T25 |
| d3 | 20×2 | 30×2 | 2 | 5% | T25 |
| d5 | 120 | 180 | 6 | 5% | T175 |
| d7 | 360 | 540 | 0 | 0% | Bagging |
| d9 | 660 | 1200 | 0 | 0% | Bagging |
| d11 | 800 | 2000 | 0 | 0% | Bagging |

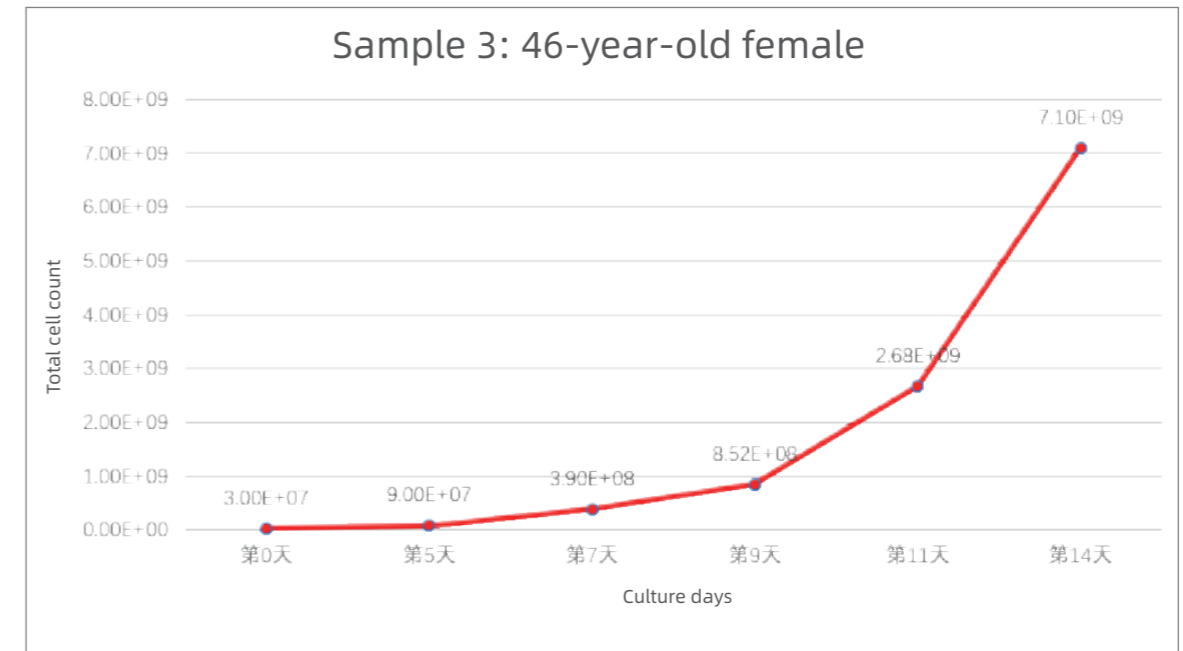
NK positive rate



Sample 3

46-year-old female sample with a low positive rate (initial positive rate 8.8%)

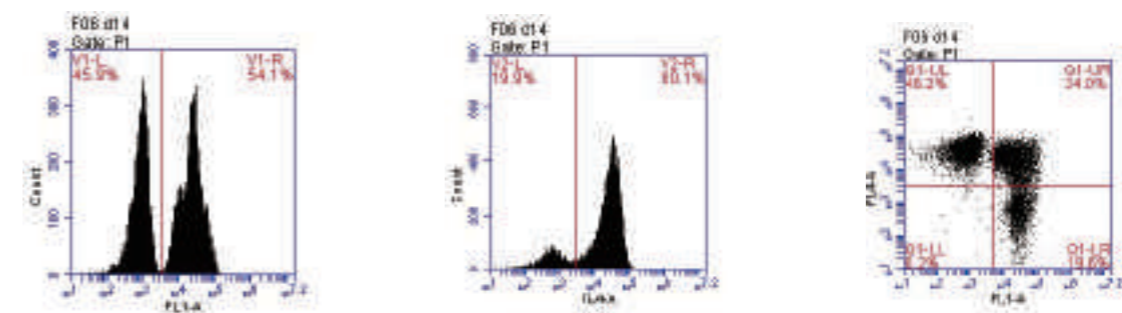
Results: 14-day NK cell count: 7.11 billion, positive rate: 46.2%



Supplement process

| Handling time | Supplement volume (mL) | Total volume (mL) | Plasma volume (mL) | Plasma ratio (mL) | Plasma volume (mL) |
|---------------|------------------------|-------------------|--------------------|-------------------|--------------------|
| d0 | 0 | 10×2 | 2 | 10% | T25 |
| d3 | 20×2 | 30×2 | 2 | 5% | T25 |
| d5 | 120 | 180 | 6 | 5% | T175 |
| d7 | 360 | 540 | 0 | 0% | Bagging |
| d9 | 540 | 1080 | 0 | 0% | Bagging |
| d11 | 920 | 2000 | 0 | 0% | Bagging |

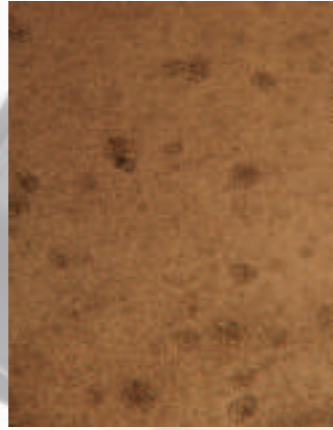
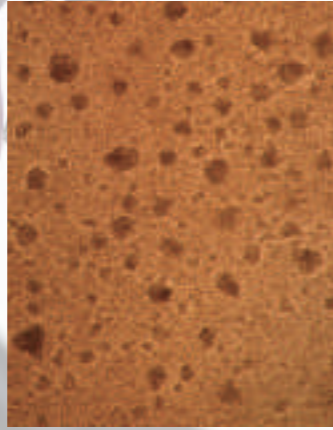
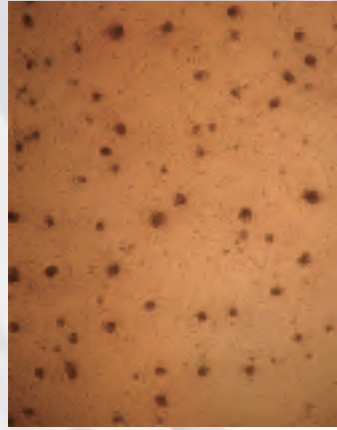
NK positive rate



Cell status

24 h after seeding

Day 3



Sample 1

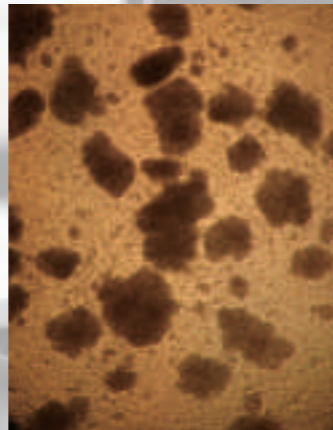
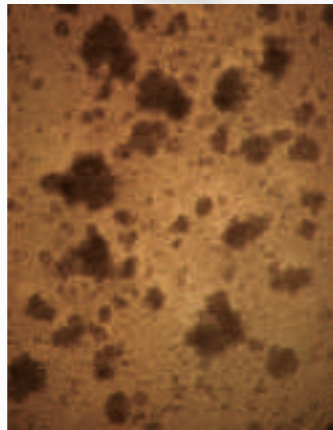
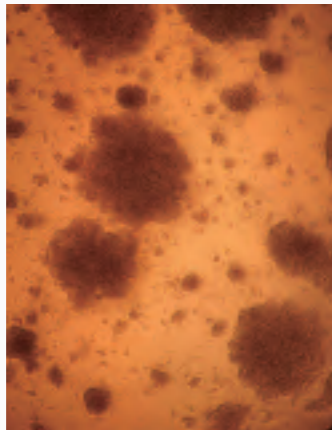
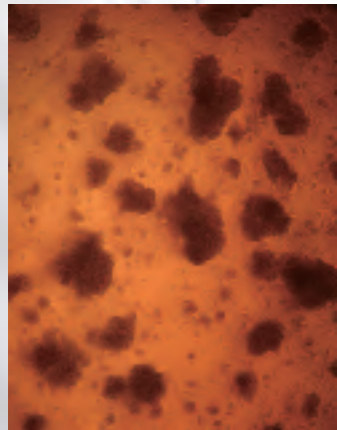
Sample 2

Sample 1

Sample 2

Day 5

Day 7



Sample 1

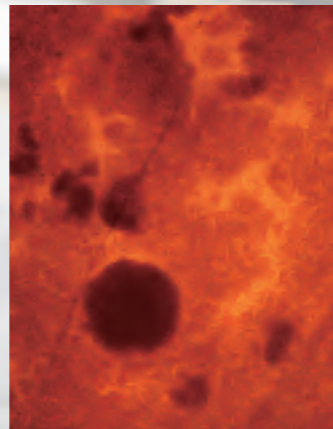
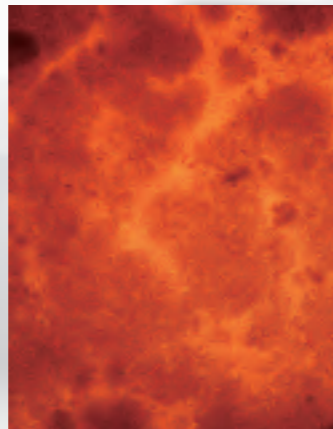
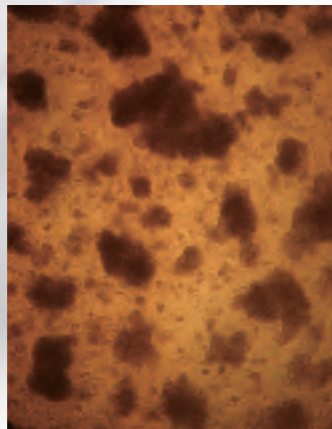
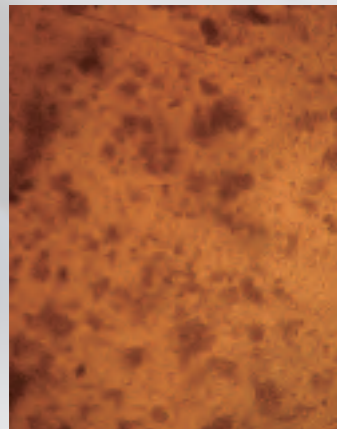
Sample 2

Sample 1

Sample 2

Day 9 (in the bag)

Day 12 (in the bag)



Sample 1

Sample 2

Sample 1

Sample 2



Introduction

Established in 2006, Yocon Biology is a leading enterprise in the domestic cell therapy serum free medium industry, dedicated to building a high-quality domestic serum free culture brand, and establishing a solid cornerstone for the cell therapy field from the origin. Yocon Biology has had 25 invention patents with independent intellectual property rights, 12 utility model patents, 1 Class II In Vitro Reagent Registration Certificate, and 12 Class I Medical Device Filing Certificates. Yocon Biology was certificated by the ISO9001 and ISO13485 quality management systems. Yocon Biology is a double-high-tech enterprise with the qualifications of Zhongguancun high-tech enterprise and national high-tech enterprise. It is headquartered in Yongfeng Industrial Base, Haidian District, Beijing, and has offices in Shanghai, Guangzhou, etc. The new R&D and production base in Miyun, Beijing is under construction, with a construction area of about 42,000 m², and is expected to be put into use in 2022. Then Yocon will provide more high-quality and innovative products for domestic and foreign customers, and create a new era in the field of cell therapy.

Hardware Conditions

Yocon Biology has the first fully automatic liquid culture medium filling production line in China, including 6 major subsystems such as pure water system, distilled water system, cooling water system, online steam sterilization system, liquid dispensing system, and filling system.

Yocon Biology is a Class 2 in vitro diagnostic reagent manufacturer, and meets GMP requirements.



The first fully automatic liquid culture medium filling line in China



Distilled water system
Ensure endotoxin below 0.015 EU/ml



Fully automatic dosing system
Batch output 1000 L



CIP&SIP
Ensure the sterility of the whole manufacturing process