

MSC serum free media kit (separation of umbilical cord-primary cells and construction of seed bank)

Nomenclature	Specification	Cat No.	Brief description of use	Expiry date
MSC Serum Free Basal Medium	500 mL/vial	NC0103	5 mL NC0103.S is added to 500 mL NC0103 for primary separation of umbilical cord MSCs and construction of seed bank.	2- 8°C, 12 months
MSC Serum Free Medium Supplement 1 (Separation of Umbilical Cord-Primary Cells and Construction of Seed Bank)	5 mL/vial	NC0103.S		-20°C, 12 months

Stem Cell Digestion Products

Nomenclature	Specification	Cat No.	Brief description of use	Expiry date
Stem Cell Mild Digestive Enzyme	500 mL/vial	NC1004.1	It is specially used for stem cell digestion, has mild effect and can improve the cell viability.	2- 8°C, 12 months
Stem Cell Mild Digestive Enzyme	100 mL/vial	NC1004.2	It is specially used for stem cell digestion, has mild effect and can improve the cell viability.	2- 8°C, 12 months

Stem Cell Cryopreserved Products

Nomenclature	Specification	Cat No.	Brief description of use	Expiry date
Serum Free Cell Cryopreservation Media	100 mL/vial	NC1001.1	It supports storage of high-density cryopreserved stem cells and immune cells.	2- 8°C, 12 months
GMP Cell Cryopreservation Media	100 mL/vial	NC1010	It supports storage of high-density cryopreserved stem cells and immune cells. No protein, no DMSO, pharmaceutical injection grade drug substance, higher safety.	2- 8°C, 12 months

**YOCON 友康®**

Yocon Biology (Beijing) Co., Ltd.

Headquarters: No. 7 Fengxian Middle Road, Yongfeng Base, Haidian District, Beijing  
Tel: 010-58711655

Website: www.yocon.com.cn



Yocon Biology  
Public Account



Yocon Biology  
WeChat

**YOCON 友康®**

Not only for performance, but focus more on safety

# MSC Serum Free Media

(Separation of Umbilical Cord-Primary Cells and Construction of Seed Bank)

US FDA Class II Medical Device Registration No. 510(K): K190983

NMPA Pharmaceutical Excipients Registration No.: F20190000508



The MSC Serum Free Media have passed biocompatibility and toxicity tests  
Powerfully support IND application and clinical studies

## MSC Culture

### Primary

**2.40×10<sup>7</sup> primary cells can be obtained from a 20 cm fresh umbilical cord.**

There were MSC cells crawling out after 5-9 days.  
Primary cells can be harvested after 12-14 days.



### Seed bank

**Total harvested P1 cells 42×10<sup>7</sup>.**

**Total harvested P3 cells 9496×10<sup>7</sup>.**

**Total harvested P5 cells 949409×10<sup>7</sup>.**

### [Serial Passage Data]

Taking the available part of the 16 cm umbilical cord as an example, the serially passaged cells were not cryopreserved and recovered, and all steps were completed strictly in accordance with the Yocon technical process.

The cloning rate of umbilical cord tissue blocks can be more than 100%; the cloning rate of high-quality umbilical cord samples can be up to 300%. \*

Passage	Seeding density (pcs/cm <sup>2</sup> )	Time	Confluence	Total harvested cells (pcs)/150 plates	Amplification factor	Total harvested cells (pcs)	Total amplification factor
Primary		12-14 days		3.00E06		2.40E7	-
P1	8000	72h	90%	2.09E7	17.45	42E7	17
P2				1.78E7	14.81	620E7	258
P3				1.84E7	15.31	9496E7	3957
P4				1.38E7	11.48	108907E7	45405
P5				1.05E7	8.71	949409E7	395587

## Instructions for Use

MSC serum free media (separation of umbilical cord-primary cells and construction of seed bank), Cat No. (NC0103+NC0103.S). In terms of primary cell separation, compared with our product (NC0103+NC0105.S), more primary cells can be separated from this product (NC0103+NC0103.S).

For non-cell drug development enterprises whose seed banks are in P1-P3 and use P3-P5 cells, this product can be selected throughout the process.

For stem cell drug development enterprises, it is recommended to use this product before separating primary cells and constructing a seed cell bank (P1~P5). During seed bank recovery and subsequent passaging, whether to continue to use this product or replace with our product (NC0103+NC0105.S) should be comprehensively determined based on the comprehensive evaluation on Yocon primary cell separation and the cell generation selected for the formulation, and N+5 regulations for cell test.

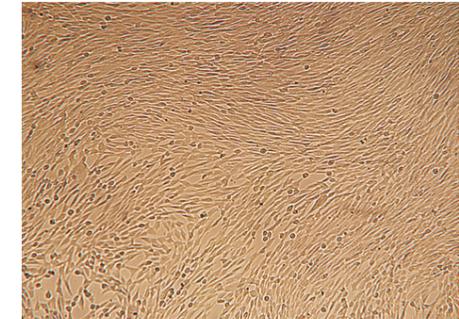
**Note: If the cells are in poor condition during the subculturing of P0-P3 cells, these cells should be replaced with (NC0103+NC0105.S) in time.**

## Cell morphology

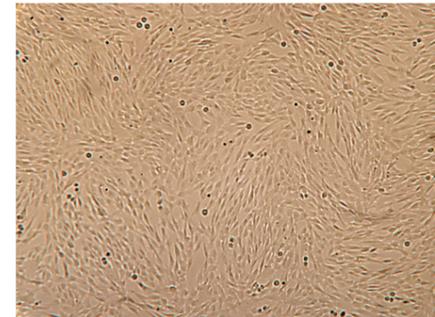
There were MSC cells crawling out after 5-9 days.



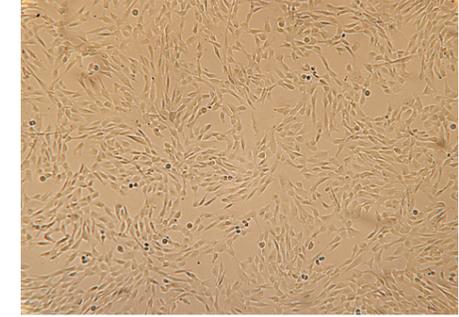
Primary cells can be harvested after 12-14 days.



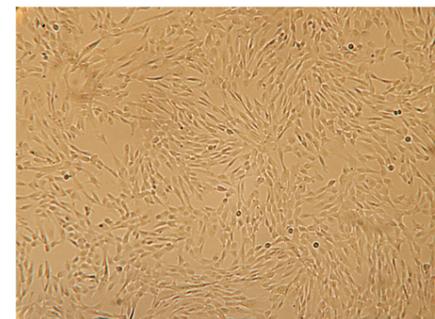
P1



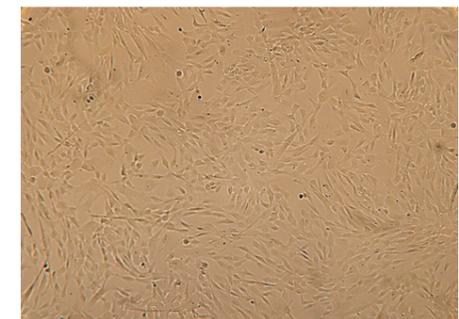
P2



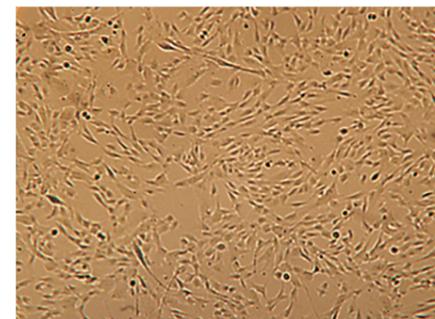
P3



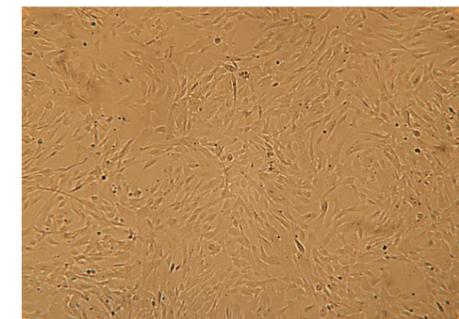
P4



P5

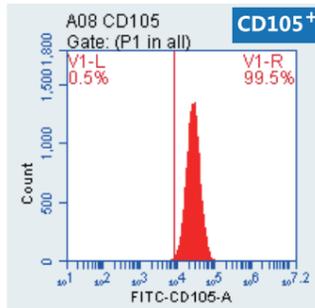
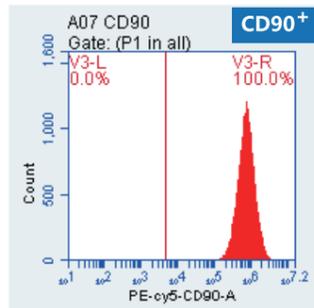
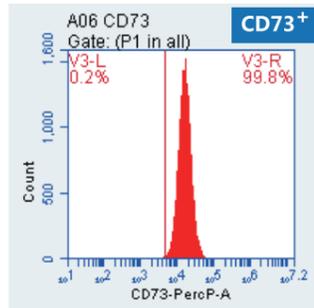
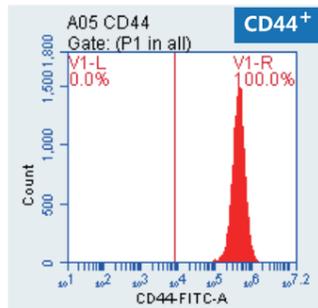
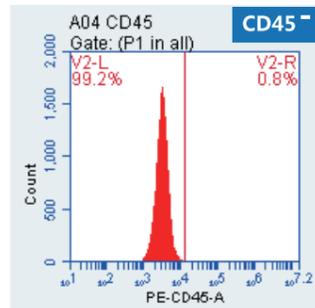
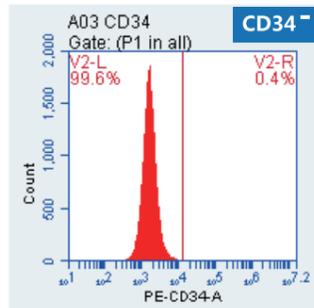
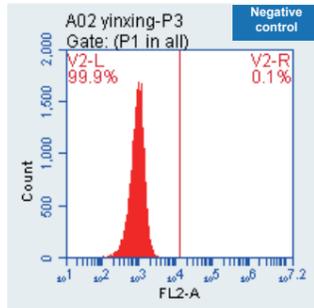


P6

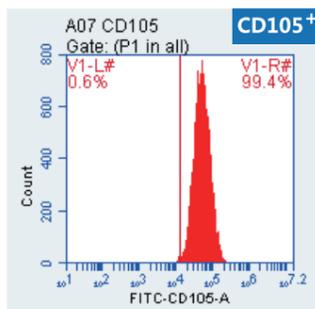
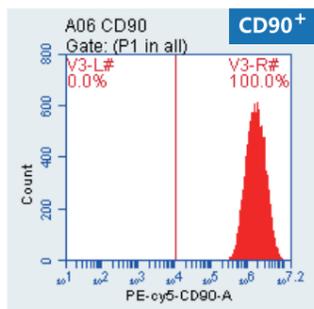
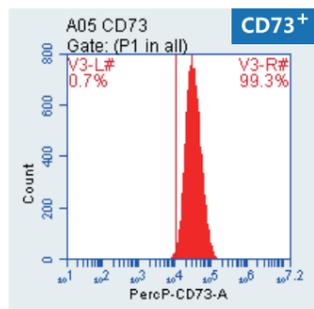
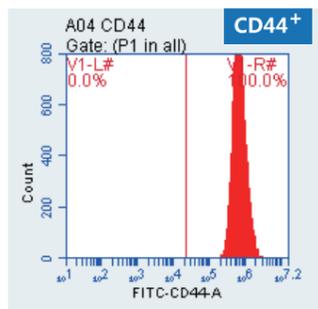
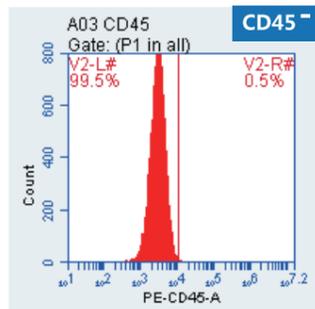
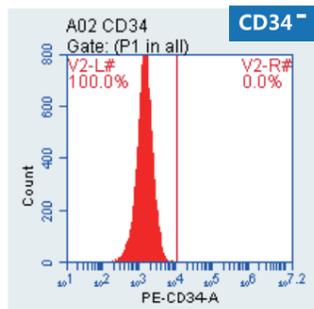
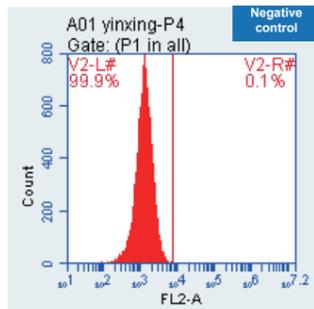


# Immunophenotyping

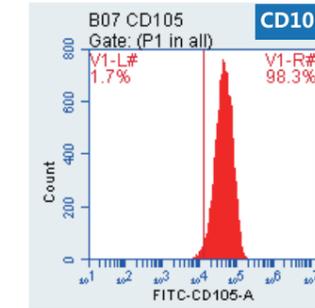
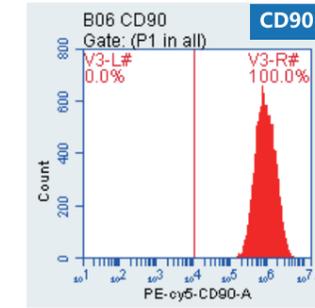
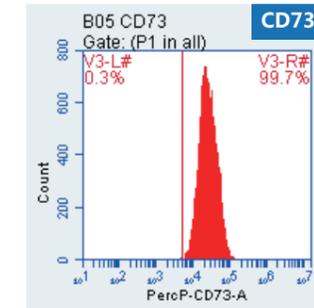
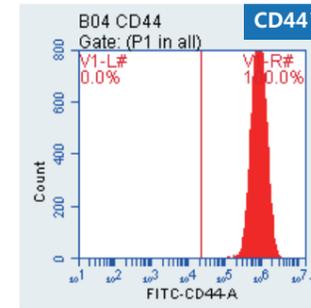
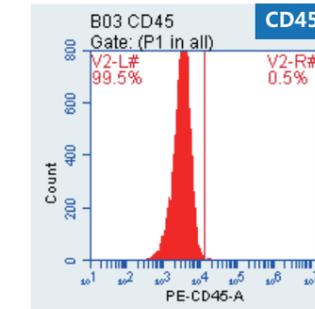
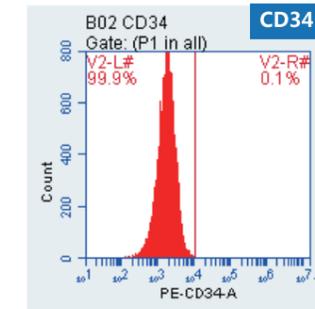
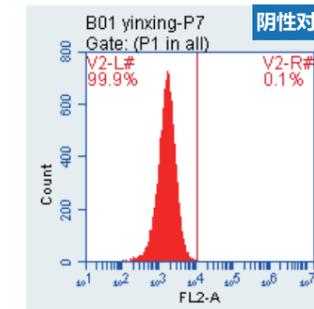
## P3 Phenotyping



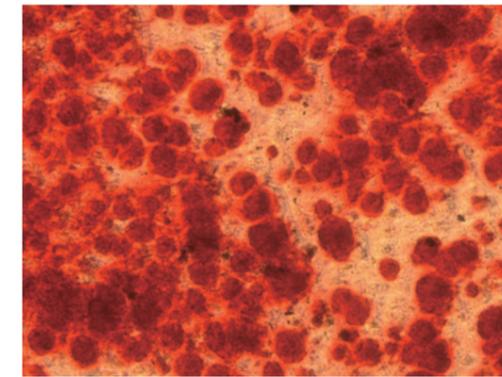
## P4 Phenotyping



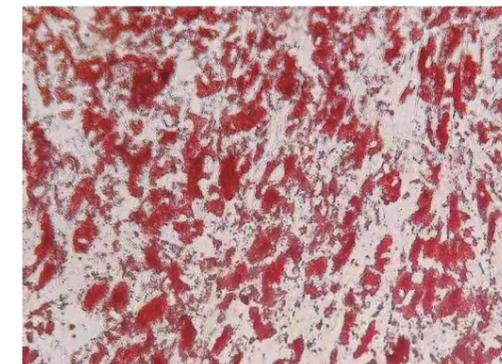
## P7 Phenotyping



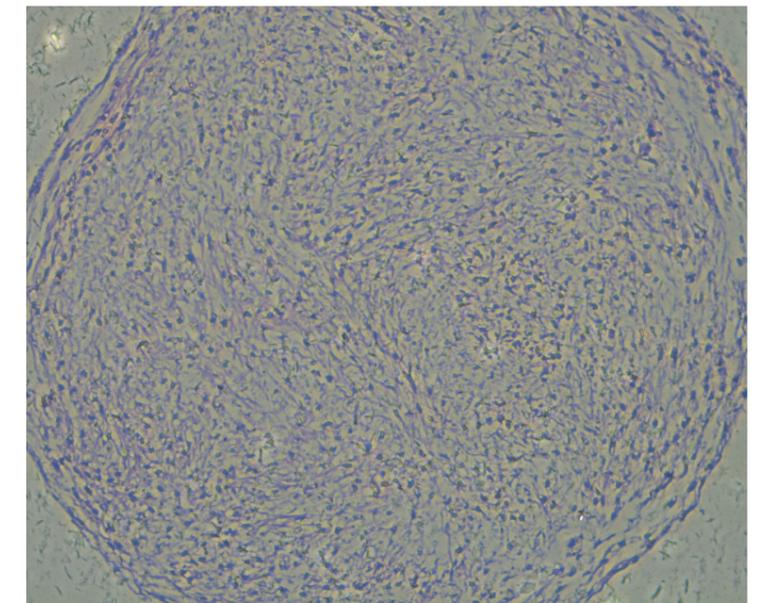
## Induced differentiation



Result of induced osteogenic differentiation

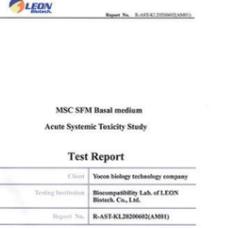
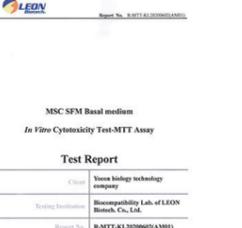


Result of induced adipogenic differentiation



Result of induced chondrogenic differentiation

## Biocompatibility and Toxicity Studies

 <p>MSC SFM Basal medium Acute Systemic Toxicity Study</p> <p><b>Test Report</b></p> <p>Client: Yoon biology technology company Testing Institution: Biocompatibility Lab. of LEON Biotech. Co., Ltd. Report No.: R-AST-KL20200602(AHMH)</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>	 <p>MSC SFM Basal medium In Vitro Cytotoxicity Test-MTT Assay</p> <p><b>Test Report</b></p> <p>Client: Yoon biology technology company Testing Institution: Biocompatibility Lab. of LEON Biotech. Co., Ltd. Report No.: R-MTT-KL20200602(AHMH)</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>	 <p>MSC SFM Basal medium Skin Sensitization Study (Maximization Test)</p> <p><b>Test Report</b></p> <p>Client: Yoon biology technology company Testing Institution: Biocompatibility Lab. of LEON Biotech. Co., Ltd. Report No.: R-GPMF-KL20200602</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>	 <p>MSC SFM Basal medium White Rabbit Intracutaneous Reactivity Test</p> <p><b>Test Report</b></p> <p>Client: Yoon biology technology company Testing Institution: Biocompatibility Lab. of LEON Biotech. Co., Ltd. Report No.: R-RB-KL20200602(AHMH)</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>
Acute systemic toxicity study	In Vitro Cytotoxicity Assay	Skin Sensitization Study	White Rabbit Intracutaneous Reactivity Trial
 <p>MSC SFM Basal medium White Rabbit Pyrogen Test</p> <p><b>Test Report</b></p> <p>Client: Yoon biology technology company Testing Institution: Biocompatibility Lab. of LEON Biotech. Co., Ltd. Report No.: R-PPY-KL20200602(AHMH)</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>	 <p>ANALYSIS OF LEACHABLES PROFILE FOR MSC SFM BASAL MEDIUM AND MSC SFM GROWTH SUPPLEMENT</p> <p><b>Validation Report</b></p> <p>Client: Yoon biology technology company Testing Institution: SGS Report No.: R-VAL-KL20200602</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>	 <p>Sterility Test Method for Yoon MSC SFM Medium</p> <p><b>Validation Report</b></p> <p>Client: Yoon biology technology company Testing Institution: SGS Report No.: R-STER-KL20200602</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>	 <p>Transport Stability Test</p> <p><b>Test Report</b></p> <p>Client: Yoon biology technology company Testing Institution: SGS Report No.: R-TRAN-KL20200602</p> <p>Note: 1. The content of this report is based on the test results and data provided by the client. 2. The test results are subject to the accuracy of the test methods and the quality of the test samples. 3. The test results are not valid if the test methods and the quality of the test samples are not guaranteed.</p>
White Rabbit Pyrogen Test	Leachable Chemical Characterization Test	Sterility Test	Transport Stability Test

## R&D Capabilities

As technological innovation is the fundamental driving force for enterprise development, YOCON always adheres to the R&D policy of being “safer, more convenient and more economical”, and has been perfecting its technology over the years. For the cell therapy product line, Yocon has successfully developed dozens of cell culture reagents such as serum-free media for MSC and NK cells, gentle digestive enzymes for stem cells, and serum-free cell freezing medium. The R&D facilities of the company cover an area of 3,000 m<sup>2</sup>, with 9 Class 10,000 clean GMP laboratories. Two physicochemical laboratories are available.



## 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



Glprmb argnl

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 m<sup>2</sup>, 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.