



## Tofflon Life Science

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## Introduction of Shanghai Tofflon Bio-reagent Co., Ltd.

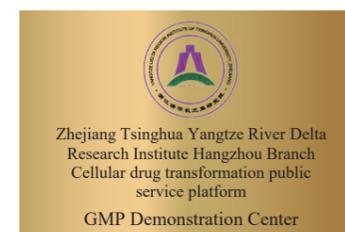
Shanghai Tofflon Bio-reagent Co., Ltd. is a wholly owned subsidiary of Tofflon Science and Technology Group Co., Ltd.

We are committed to building a comprehensive supply platform for the R&D and production of localized biological reagents that integrates R&D and innovation, application transformation and industrialized production and sales of key reagents, providing a full line of key reagents to support life science research and biotechnology development and production, and providing a total solution for the localization of key reagents. In the field of macromolecules (antibodies/proteins/vaccines), we provide a series of products related to culture media for biotechnology R&D and production. In the field of cell and gene therapy, we provide total solutions of key reagents for cell and gene therapy technologies (CAR-T/TCR-T/NK and other immune cell and stem cell therapy technologies, etc.) such as serum-free medium for culture, cytokines for induction and stimulation, and preservation solutions for freezing and storage. Bio-reagent is an important part of Tofflon's system solutions, which is combined with Tofflon's system engineering, core equipment and disposable consumables to form a systemic and holistic solution to support life science research and biotechnology industry. Shanghai Tofflon Bio-reagent Ltd. relies on Tofflon Group and the foundation of medical industry, integrates the advantages of Tofflon's systematic platform, global high-quality customer resources and professional technical support service capability, and strives to implement the localization of biological reagents to build a leading international brand of localized reagents.

## Technology Development and Support Platform

Shanghai Tofflon Bio-reagent Co., Ltd. has set up Tofflon Bio-Cell Lab as a specialized technology R&D and support platform, and the platform is designed according to the key trial.

The company is equipped with a complete functional work area, facilities and equipment, and professional technical and technological personnel (with the ability to develop and support the development of stem cell, immune cell and engineered cell culture technologies). Tofflon Bio-Cell Lab is a key reagent R&D support platform and a biotechnology development and transformation platform, supporting Tofflon's key reagents, core equipment and consumables to provide biotechnology application technology development and support, relying on Tofflon's professional technical capabilities and in-depth understanding of industry regulations, to provide products as well as application technology service support that is closest to the actual process and technical specification requirements.



## Tofflon Bio-reagent R&D Center



Molecular Testing Laboratory



Observation and Electrical Transfer Equipment



C-level Experimental Area



Whole Station System for Cell drug Preparation



CES Cell Expansion system



Flow Cytometer

## Tofflon Bioreagent Product List

Seque	Product Name	Product Model	Art. No.	Feature	Pages
1	T-lymphocyte Serum-free Medium	MCM CulLymT-SFM11(A)	CM011(A)-1-1000	Serum-free, animal origin free	01
		MCM CulLymT-SFM12/12(A)	CM012-1000/CM012(A)-1-1000		
2	NK cell Serum-free Culture Medium	MCM CulLymNK-KIT01	CM-NK KIT01	Serum-free, animal origin free	03
		MCM CulLymNK-KIT03	CM-NK KIT03		
	NK Expansion Enhancer	NK Expansion Enhancer	ML601-50	Serum-free, animal origin free	05
3	MSCs Serum-free Culture Medium	MCM CulMsc-SFM31 Pro	CM031P-500	Serum-free, animal origin free	07
		MCM CulMsc-SFM31 Pro(A)	CM031P(A)-1-500		
4	Cell Cryoprotectant series	MCP CryoSpr-MD HPC(B)	CP012-20	55% w/v DMSO (USP grade) + 5% Dextran-40 (USP grade) + water for injection	09
		MCP CryoSpr-DHQ05(B)	CP003-100	5% DMSO (USP grade), serum-free, protein-free	
		MCP CryoSpr-DHQ10(A)	CP004-100	10% DMSO, serum-free	
		MCP CryoSpr-DHQ20(A)	CP005-50		
5	Microbial chemically defined medium	Ecoli CDM01	LQM01, DPM01	Serum-free, animal origin free	12
6	PDE RecTrypsin	PDE RecTrypsin-DP01	PDE-DP-100/1000	Genetic recombination, no animal/human source ingredients	16
7	Recombinant Trypsin Solution	PDE RecTrypsin-LQ02(1x)	PDE-LQ02-100/500	Animal origin free	17
		PDE RecTrypsin-LQ03(10x)	PDE-LQ03-100/500		
8	Benzonase Nuclease	Ben Nuclease	210615TO, 5/50/500/5000KU	Genetic recombination, no animal/human source ingredients	19
9	HEK293 Medium series Products	HEK293 CDM15	LQ15, DP15	Animal origin free, protein-free, chemically defined	21
		HEK293 CDM26 / 26 Pro	LQ26/DP26, LQ26-2/DP26-2		
	Feed Medium	Tobitec FC	LQF01-C, DPF01-C		
Tobitec FedVigor02		LQ47, DP47			
10	CHO Medium series Products	CHO CDM27	LQ27, DP27	Animal origin free, protein-free, chemically defined	25
		CHO CDM34	LQ34, DP34		
		CHO CDM35	LQ35, DP35		
		CHO CDM10	LQ10, DP10		
	Feed Medium	Tobitec FA&FB	LQF01-A/B, DPF01-A/B		
		Tobitec FA Pro & FB Pro	LQF02-A/B, DPF02-A/B		
	Tobitec FedVigor01/02	LQ46, DP46/LQ47, DP47			26
11	Insect Serum-free Medium	Insect SFM01, Insect SFM01 Pro	LQ11/DP11, LQ20/DP20	Serum-free, and animal origin free	30
12	MDCK Serum-free Medium	MDCK SFM01	LQ17, DP17		33
13	VERO Serum-free Medium	VERO SFM01, VERO SFM01 Pro	LQ25/DP25, LQ22/DP22		35
14	HDC Serum-reduced Medium	HDC SR01	LQ50/DP50	Serum-reduced	37
15	BHK Serum-free Medium	BHK SFM01	LQ16, DP16	Serum-free, and animal origin free	39
16	Hepes MLS(100x)	Hepes MLS(100x)	ML201-125	—	41
17	Stable Gln MLS(100x)	Stable Gln MLS(100x)	ML101-125	—	41
18	PS MLS	PS MLS	ML301-125	—	41
19	More Products	MEM, DMEM, RPMI1640, M199, DMEM/F12, DPBS, MEMa, Ham's F-12K, IMDM, Leibovitz's L-15			42

## T-lymphocyte Serum-free Medium

MCM CulLymT is a serum-free cell culture medium specialised for human T lymphocyte culture in large scale. MCM CulLymT is component clear, animal origin-free and low protein level. It can be applied in in vitro T lymphocyte personalized or large-scale culture without serum under different kinds of culture model, including static culture, fed-batch and perfusion in SUB.



### Product Information

Product Name	Product Model	Art.No.	Specification
T Lymphocyte Serum-free Medium	MCM CulLymT-SFM11(A) (without phenol red)(GMP)	CM011(A)-1-1000	1000mL/bottle
	MCM CulLymT-SFM12 (with phenol red)	CM012-1000	1000mL/bottle
	MCM CulLymT-SFM12 (with phenol red)(GMP)	CM012-1-1000	1000mL/bottle
	MCM CulLymT-SFM12 (A) (without phenol red)(GMP)	CM012(A)-1-1000	1000mL/bottle

### Product Advantage

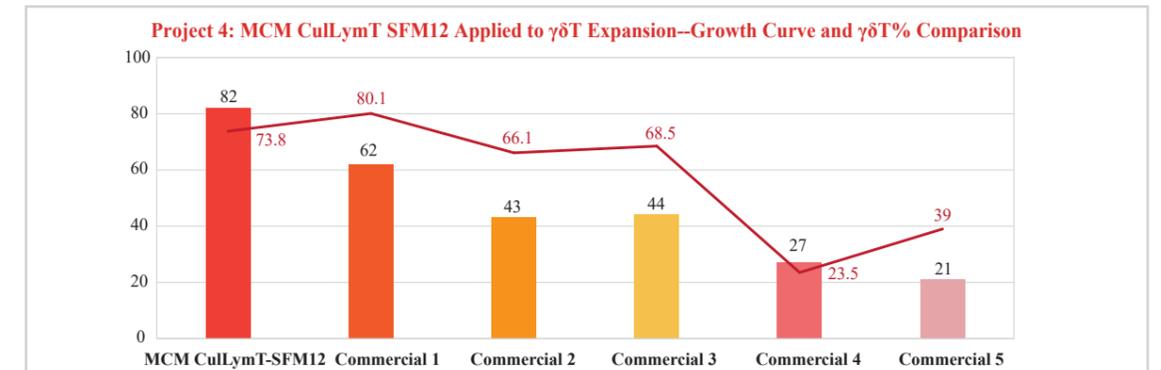
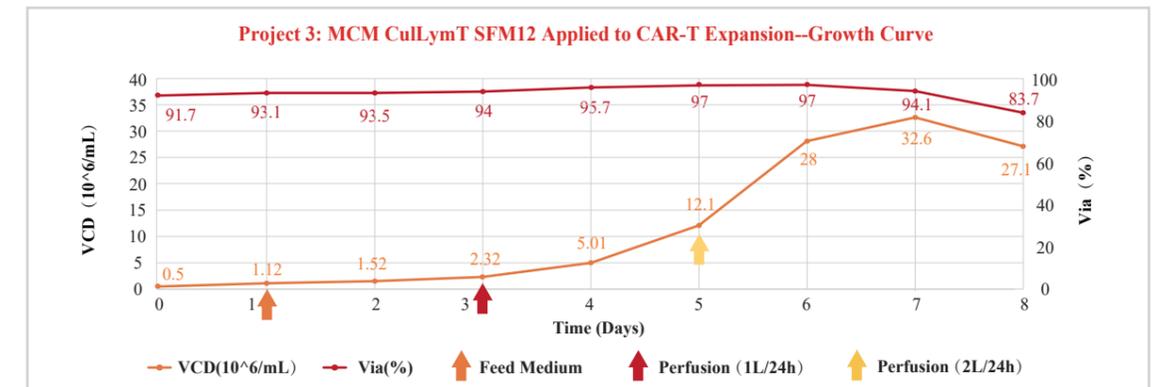
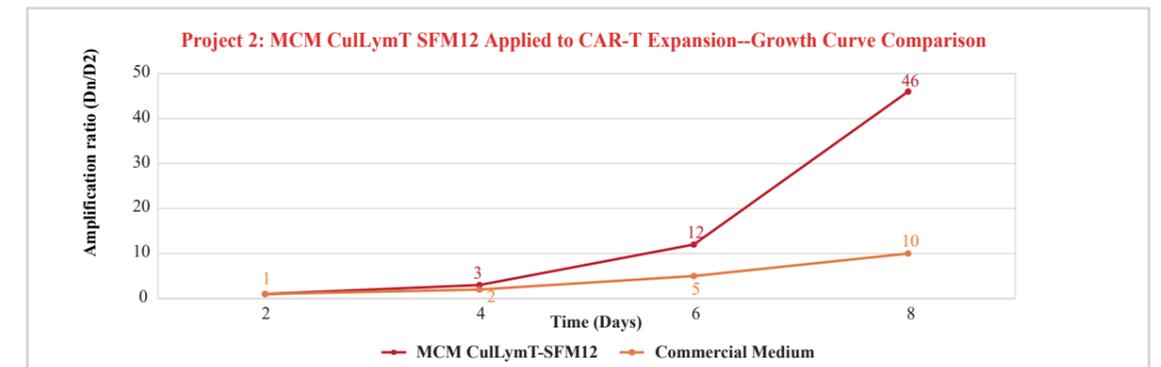
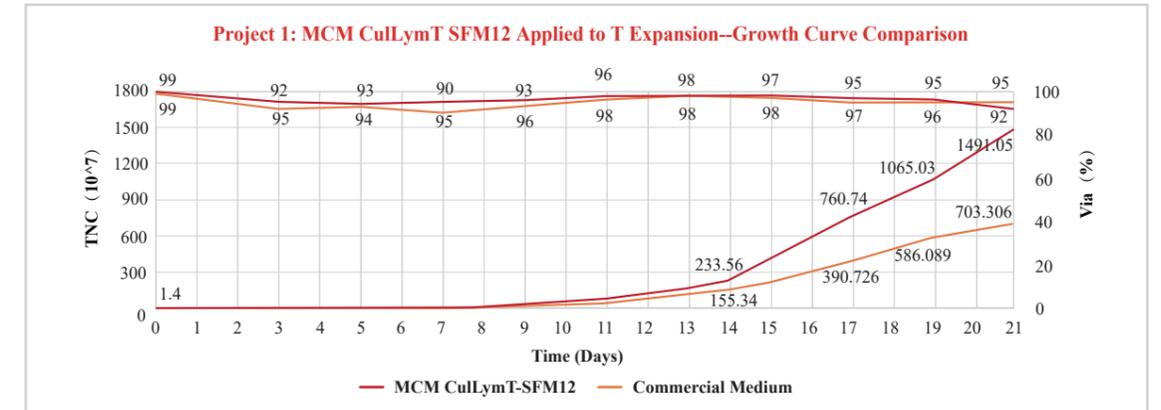
- Component clear, serum-free, animal origin-free and low protein level, FDA Master File.
- Completely support serum-free culture, no serum or serum substitute required, and suitable for bioreactor
- Excellent in cell proliferation, supporting T lymphocyte fast proliferation in vitro
- Universality, proved by multiple culture systems, such as static culture, fed-batch and perfusion culture in bioreactor
- cGMP, disposable manufacturing techniques, highly stable and consistency

### Using Method

- T cell isolation, sorting and gene modification operations;
- T cell inoculation with specific activation and stimulation factors as required by the culture process.
- Incubation at 37°C, 5% CO2 and saturated humidity, with periodic observation of count amplification.
- At the end of the culture, the medium was removed by centrifugation and the cells were collected.

## Application Case

### 1. MCM CulLymT-SFM12



## NK Serum-free Culture Medium Kit

MCM CullLymNK-KIT01/03 is developed for NK efficient expansion. KIT01 without any exogenous growth factor and no undefined components, KIT03 contains clinical level human source human albumin. The kit applies a medicine level antibody-induced T lymphocyte apoptosis and specifically activates NK cell expansion and enhances NK cell killing activity.



### Product Information

Product Name	Product Model	Art. No.	Specification
NK Cell Serum-free Culture Kit	CullLymNK-KIT01	CM-NKKIT01	2.2L/set
NK Cell Serum-free Culture Kit	CullLymNK-KIT03	CM-NKKIT03	2.2L/set
Kit component details			
NK Cell Serum-free Amplification Medium	MCM CullLymNK-SFM20(A)/SFM22(A)	CM020A/022A-1000	1000mL×2
NK Cell Serum-free Activation Medium	MCM CullLymNK-SFM20(B)/SFM22(B)	CM020B/022B-200	200mL
Coating Factor	NKMKIT03-01	NK-CF/1.5mL	Standard combination set
Activating Factor	NKMKIT03-02	NK-AF/1mL	Standard combination set
Expansion Factor	NKMKIT03-03	NK-EF/1.5mL	Standard combination set
Serum Treatment Reagent	NKMKIT03-04	NK-STR/20mL	Standard combination set

### Product Advantage

- Component clear, serum-free, animal origin-free, medical level factors and low protein level, FDA Master File.
- Adopt a pure factor activation and expansion technology, culture process without trophoblast cells.
- Universal technical, suitable for large-scale culture of NK from different sources (UC blood, Peripheral blood and iPSC-NK).
- High NK%: CD3-CD56>60%, CD56+>70%, CD16+>70% in 14 days.
- Excellent expansion ability: on the D14, the expanding folds >120; on the D21, the expanding folds >500.
- High killing efficiency: K562, when E:T=20:1, the killing efficiency can reach 95% when expanded to D14, D21.

### Using Method

- Antibody-coated culture flasks.
- Isolation of plasma and plasma heat inactivation, and isolation of peripheral blood mononuclear cells (PBMC) by density gradient centrifugation.
- Antibody-specific activation of NK cells and targeted expansion of NK cells.
- At the end of the culture, centrifuge to remove the medium and collect the cells

### Application Case

Figure I. NK cell growth curve

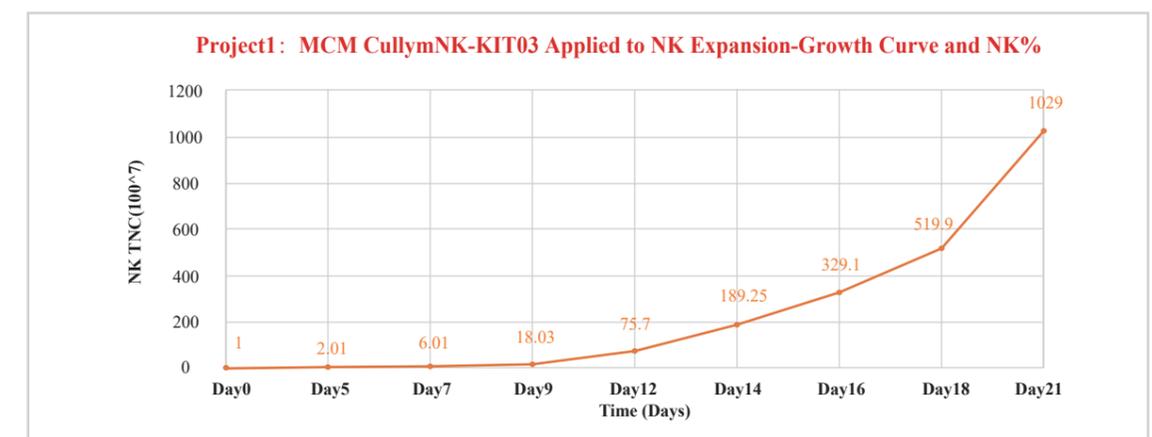
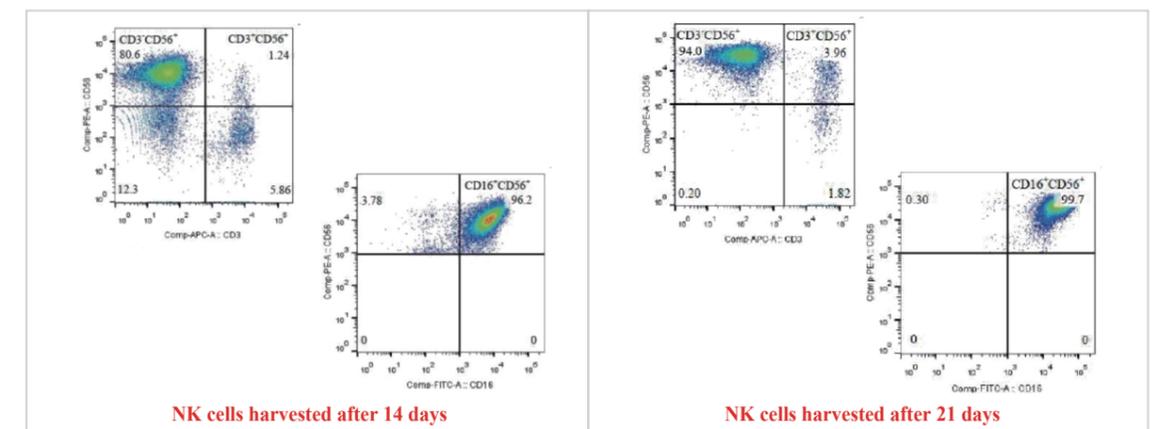


Figure II. NK cell flow assay



Culture Days	CD3 <sup>+</sup>	CD56 <sup>+</sup>	CD16 <sup>+</sup>	CD3 <sup>-</sup> CD56 <sup>+</sup>	CD56 <sup>-</sup> CD16 <sup>+</sup>	CD3 <sup>+</sup> CD56 <sup>+</sup>	Motility rate
D14	0.6%	94.3%	88%	93.1%	86%	0.4%	96%
D21	0.4%	98%	91.4%	98.4%	90%	0.2%	98%

# NK Expansion Enhancer

Specific for NK large-scale expansion in bioreactors, the first reagent for NK large-scale culture. Serum free and Animal Component Free. Adding the enhancer in the bioreactor culture mode can effectively improve the adaptation ability of NK cells in the bioreactor, and improve the growth and expansion state and stability of NK cells.



## Product Information

Product Name	Product Model	Art. No.	Specification
NK Expansion Enhancer	NK Expansion Enhancer	ML601-50	NK cell

## Product Advantage

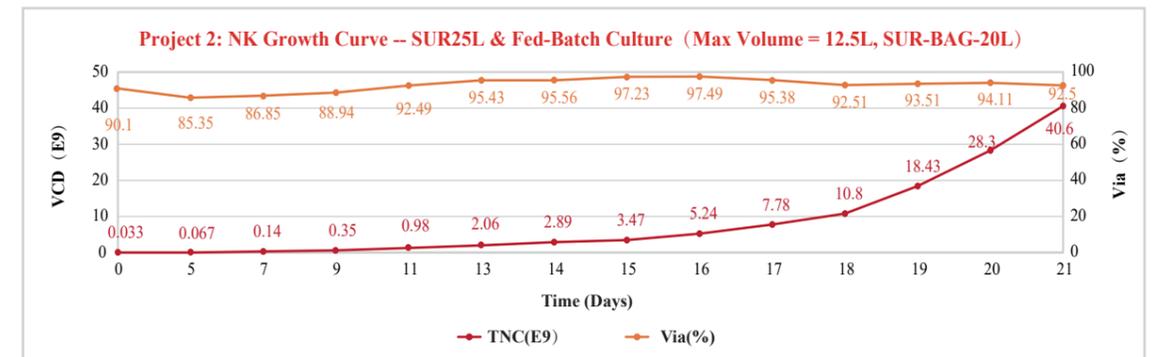
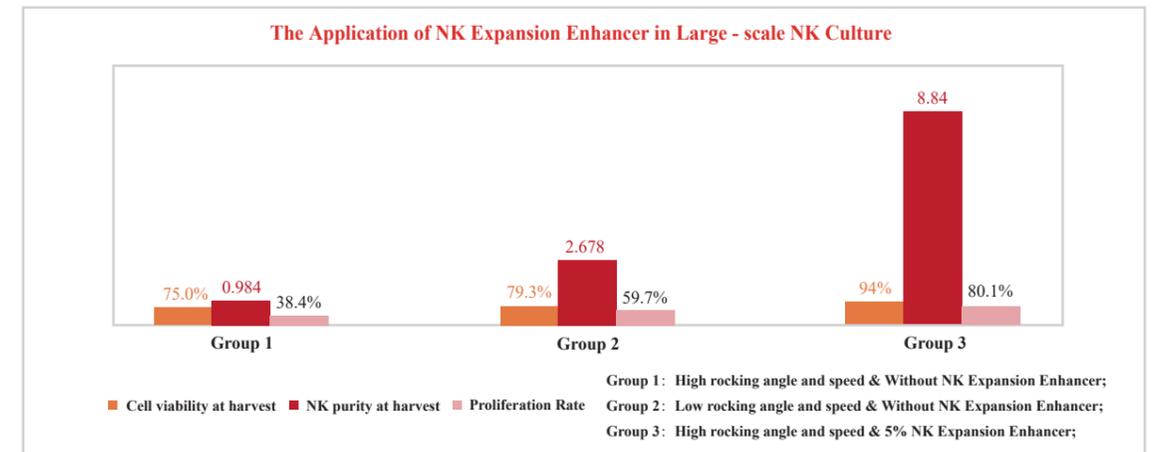
- Component clear, serum free, animal origin-free.
- Specially developed to enhance the scale expansion of NK in bioreactors.
- Effectively improve the adaptation ability of NK cell in bioreactor system and improve the success rate of large - scale NK culture.
- Significantly enhance the active proliferation of NK, increase the NK expansion folds and final NK% and activity.
- cGMP, disposable manufacturing techniques, highly stable and consistency

## Precautions

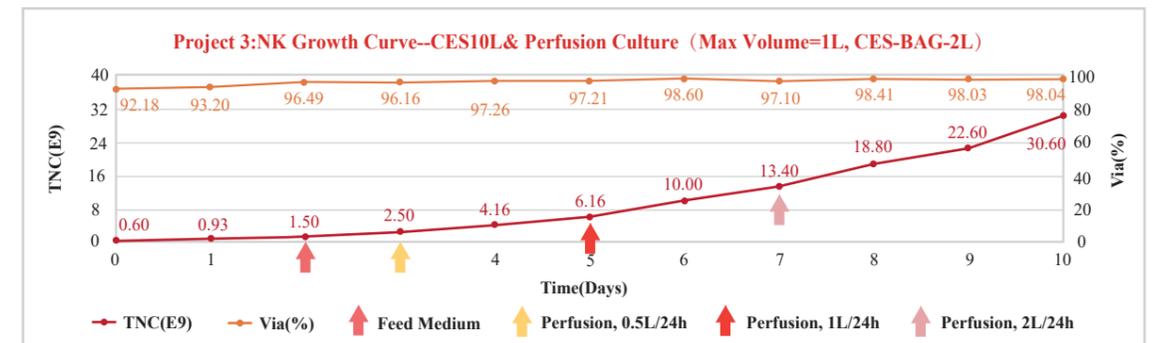
- This product is only available for scientific research and is not available for clinical treatment.
- The product shall be used or subpackaged immediately after opening, otherwise the product performance will be affected. When pre-warm the culture medium, take as much as you want. It is forbidden to pre-warm the whole bottle of culture medium and repeat pre-warm.
- Cell culture tests should be performed before use and confirm performance before use.
- The waste disposal generated after use shall comply with the relevant laws and regulations of the location of the user, and shall not be discarded at will.

## Application Case

### 1、NK Expansion Enhancer



Culture Days	CD3 <sup>+</sup>	CD56 <sup>+</sup>	CD3-CD56 <sup>+</sup>
D14	20.1%	86.8%	75%
D21	7.8%	90.8%	85%



Culture Days	CD3 <sup>+</sup>	CD56 <sup>+</sup>	CD3-CD56 <sup>+</sup>
D10	0.6%	98%	95.3%

## MSCs Serum-free Culture Medium

MCM CuLmSc-SFM31 Pro culture is developed for human umbilical derived MSCs, human placenta MSCs, and human adipose MSCs expansion. The kit is component clear, serum-free, animal origin-free and low protein level. It adapt primary MSCs separate and stable passage and maintain MSC differentiation potential (osteogenesis, adipogenesis, and chondrogenesis).



### Product Information

Product Name	Product Model	Art. No.	Specification
MSCs Serum-free Culture Medium	MCM CuLmSc-SFM31 Pro(with phenol red)	CM031P-500	500mL/bottle
	MCM CuLmSc-SFM31(GMP)	CM031P-1-500	500mL/bottle
	MCM CuLmSc-SFM31 Pro (A) (without phenol red)(GMP)	CM031P(A) -1-500	500mL/bottle

### Product Advantage

- Serum-free, animal origin-free and low protein level,FDA Master File.
- Completely support serum-free culture, no serum or serum substitute required,and suitable for bioreactor.
- Adapt primary MSCs separate (Enzyme digestion and tissue explant).
- Stable passage and maintain MSC differentiation potential.
- cGMP, disposable manufacturing techniques, highly stable and consistency.

### Using Method

- Pre-warmed MCM CuLmSc-SFM31 Pro in a 37°C incubator.
- Primary isolation culture/cell inoculation: inoculation of tissue blocks/enzyme digested or recovered MSCs on to well coated culture vectors for culture.
- Cell pass aging culture: Tryps indigestion,cell collection by centrifuga tion,and continued pass aging culture according to a certain density.
- Cell harvesting and freezing of cells: tryps indigestion,centrifuga tion to collect cells,freezing at a certain density with lyophilization solution.

## Application Case

### 1、MCM CuLmSc-SFM31 pro

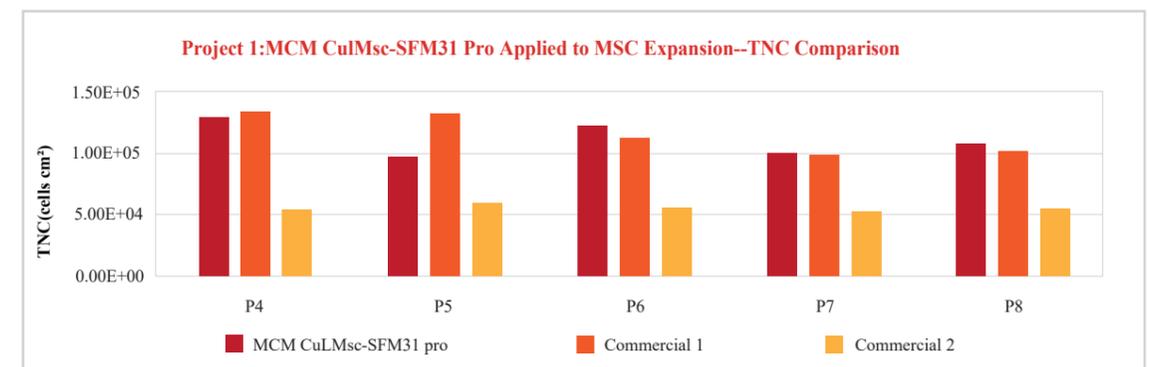
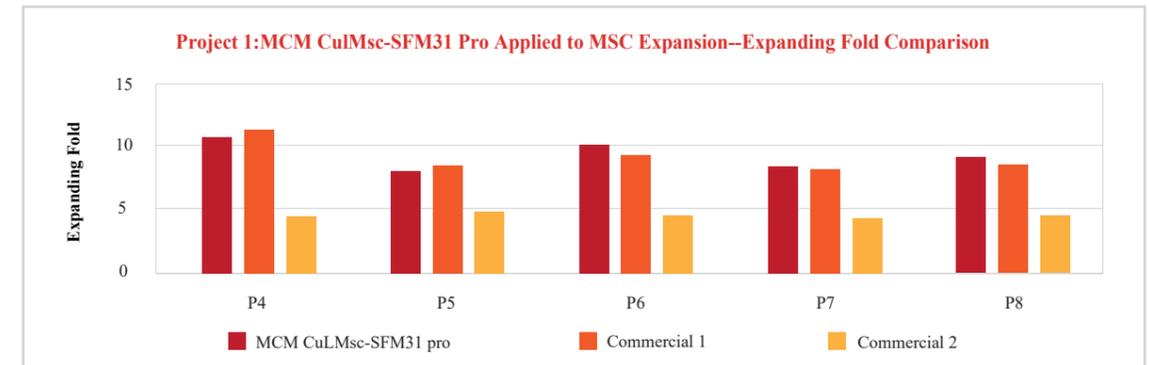


Figure I, Cell morphology

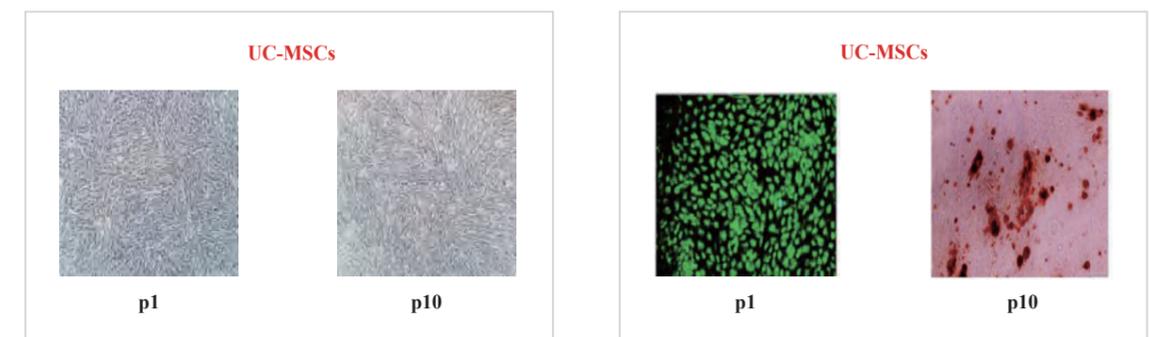


Figure II, Cell flow assay

Cell Type	CD73 <sup>+</sup>	CD90 <sup>+</sup>	CD105 <sup>+</sup>	CD34 <sup>+</sup>	CD45 <sup>+</sup>
UC-MSCs, P10	99.8%	99.5%	98.1%	<0.2%	<0.2%

## Cell Cryoprotectant series

Cryoprotectant series products are suitable for long term cryopreservation for multiple cell types.

All products are serum-free and ready-to-use, use medical level ingredients. Cell cryoprotectant series products adapt different cell lines, including PBMC, HSCs, MSCs, immune cells(T cell, NK cell, dendritic cell, etc), CHO, HEK293, 293T, Jurkat, K562 and ect.



### Product Information

Product Name	Product Model	Art. No.	Suitable Cell Line & Related Derivatives
MCP CryoSpr-MD HPC(B)	CP012-20, 20mL	55% w/v DMSO (USP grade) +5% Dextran-40 (USP grade) +water for injection	Hematopoietic stem cells
MCP CryoSpr-DHQ 05 (B)	CP003-100, 100mL	5% DMSO (USP grade), serum-free, protein-free	General Purpose
MCP CryoSpr-DHQ 10 (A)	CP004-100, 100mL	10% DMSO, serum-free	General Purpose

### Product Advantage

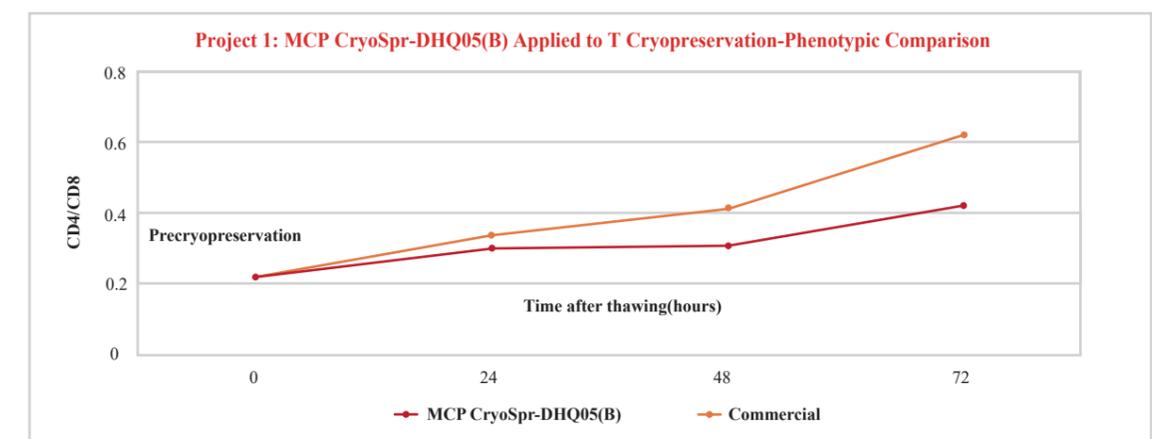
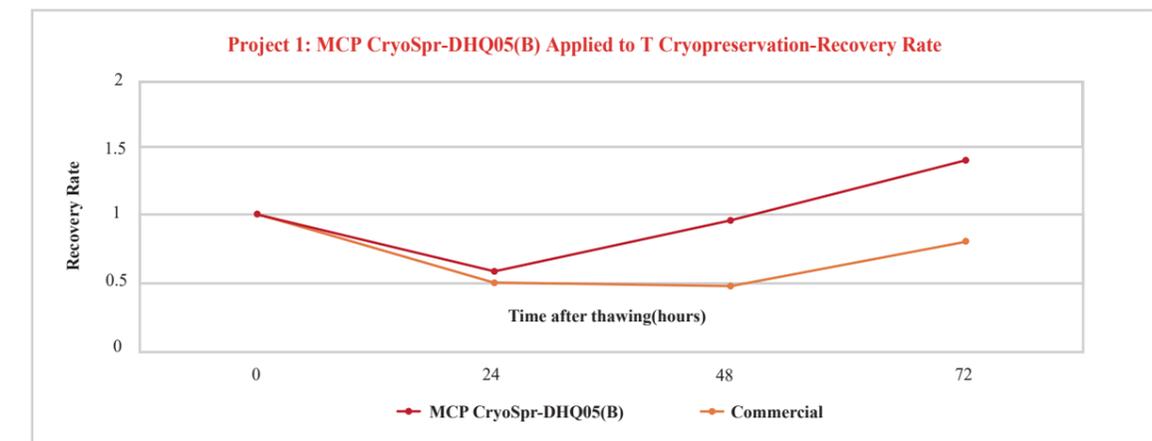
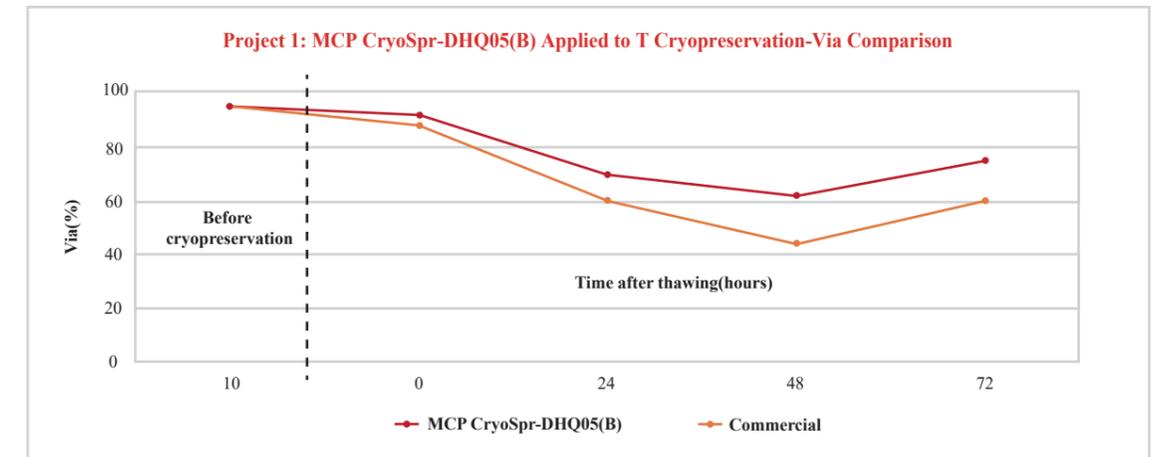
- Ready-to-use products, stable and easy to use, FDA Master File.
- Excellent formulation, serum-free, and even chemically-defined.
- Supporting long-term cell&tissue storage, stable and safe, high recovery rate.
- Multiple products, meet different clients' needs.
- cGMP, disposable manufacturing techniques, highly stable and consistency.

### Precautions

- This product is only for scientific research, not for clinical treatment.
- The product should be used immediately after opening or stored in separate packages, otherwise the product performance and cell freezing effect will be affected.
- Before cryopreservation of cell samples, the experimental cell cryopreservation test should be conducted to confirm the performance before use.
- The waste generated after use shall be treated in accordance with the relevant laws and regulations of the user's location, and shall not be discarded at will.

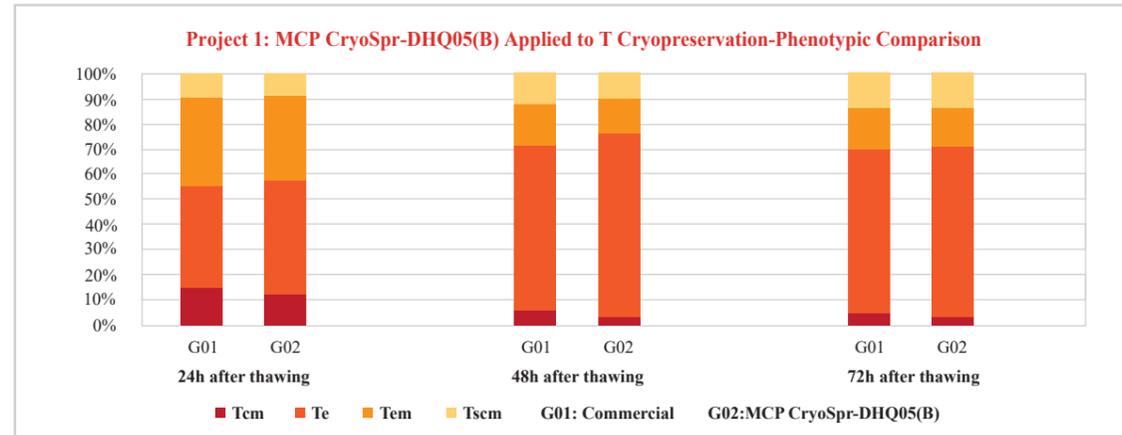
## Application Case

### 1. MCP CryoSpr-DHQ05(B)

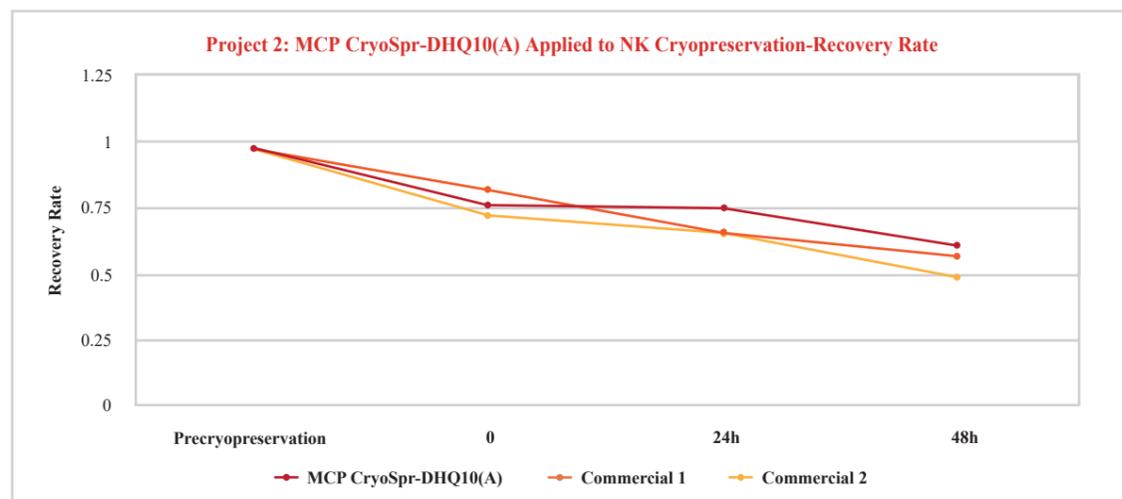
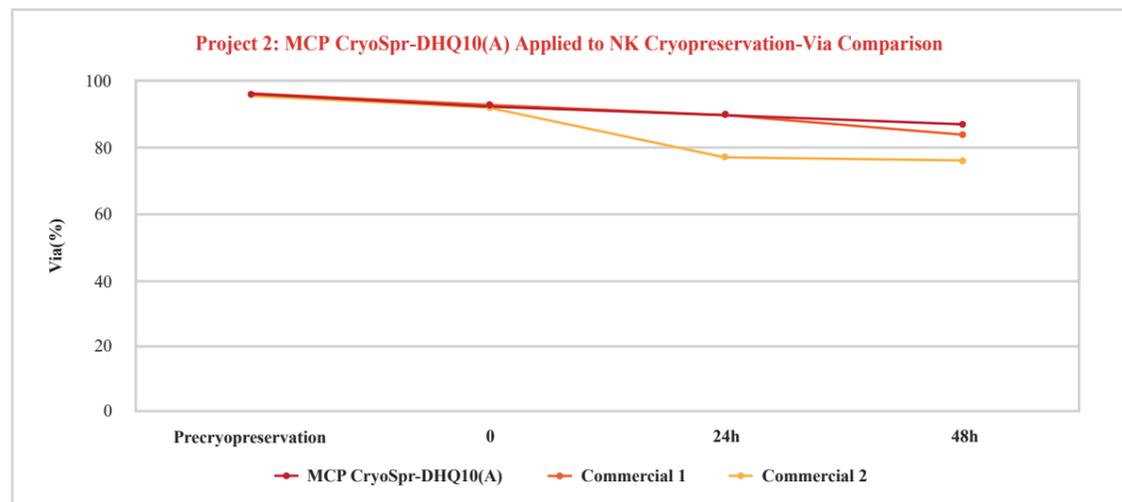


## Application Case

### 1- MCP CryoSpr-DHQ05(B)



### 2- MCP CryoSpr-DHQ10(A)



## Ecoli Series Medium Products

Ecoli CDM01 is chemically-defined (CD) basal medium, without protein, hydrolysate, growth factor and any animal-derived components, it is suitable for high-concentration suspension culture of E.coli and can achieve efficient production of high-quality plasmids. Ecoli CDM01 can be applied to the growth of various E. coli strains.



### Product Information

Product Name	Product Model	Art. No.	Suitable Cell Line & Related Derivatives
Ecoli CDM01 (Dry Powder)	DPM01-50L/100L	Serum-free, animal origin free	DH10B、BL21(DE3)、DH5α
Ecoli CDM01 (Liquid)	LQM01-500/1000		DH1、Stbl2、Stbl3 One Shot TOP10

### Product Advantage

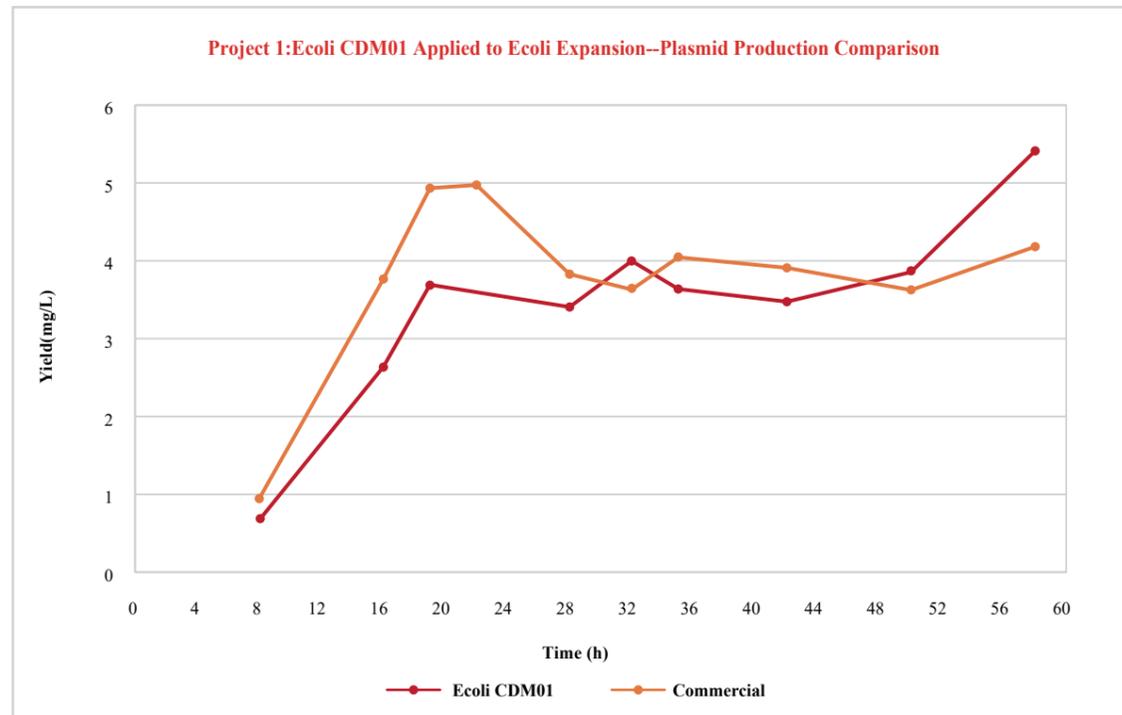
- Chemically defined, animal-free, protein-free.
- Suitable for high density suspension culture of E.coil, with strong adaptability and rich nutrients.
- Suitable for bioreactor large-scale scale-up culture processes, supporting batch, fermenter batch.
- Effectively support infection and subsequent product expression to ensure stable and high titer.
- cGMP production conditions, continuous needle milling production to ensure stable consistency of different batches.

### Precautions

- Fill the mixing container with purified water (20 ~ 30°C) at 80% of the final volume.
- Slowly add 41.53 g/L of powder medium with gentle stirring. Mix for 30 minutes.
- Adjust the pH to 7.0 using 5M NaOH or 1M HCl solution.
- Adjust the solution volume to 100% with purified water, mix for 5 minutes.
- Filter immediately the media with a 0.22 μm membrane filter.

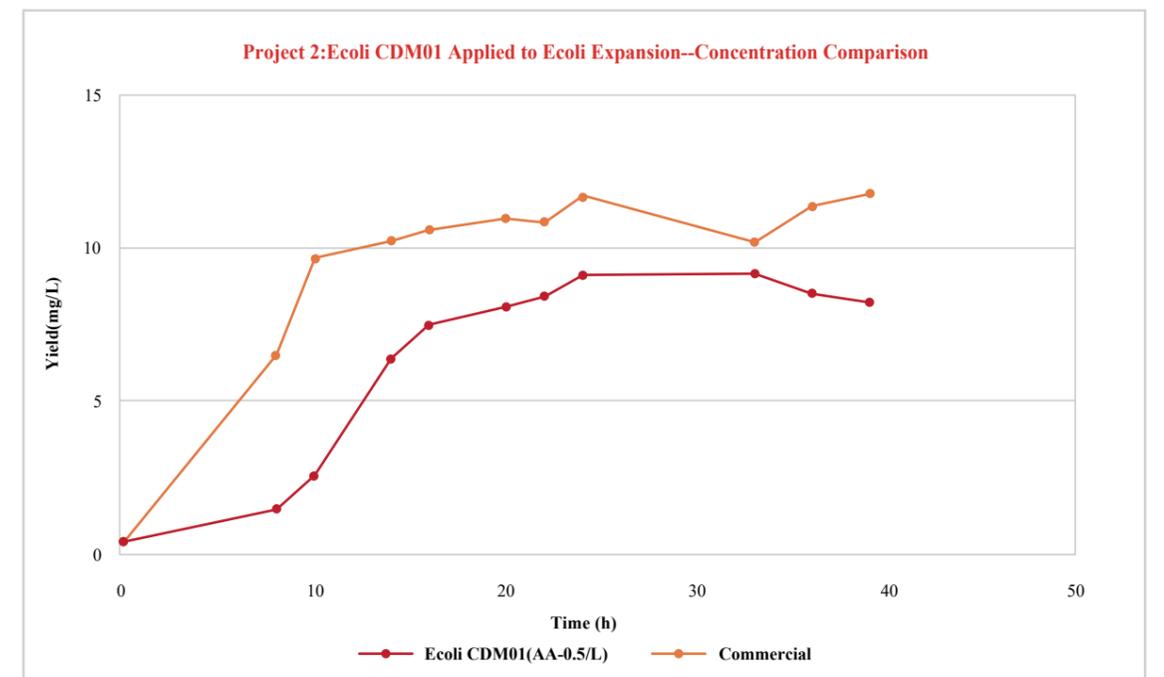
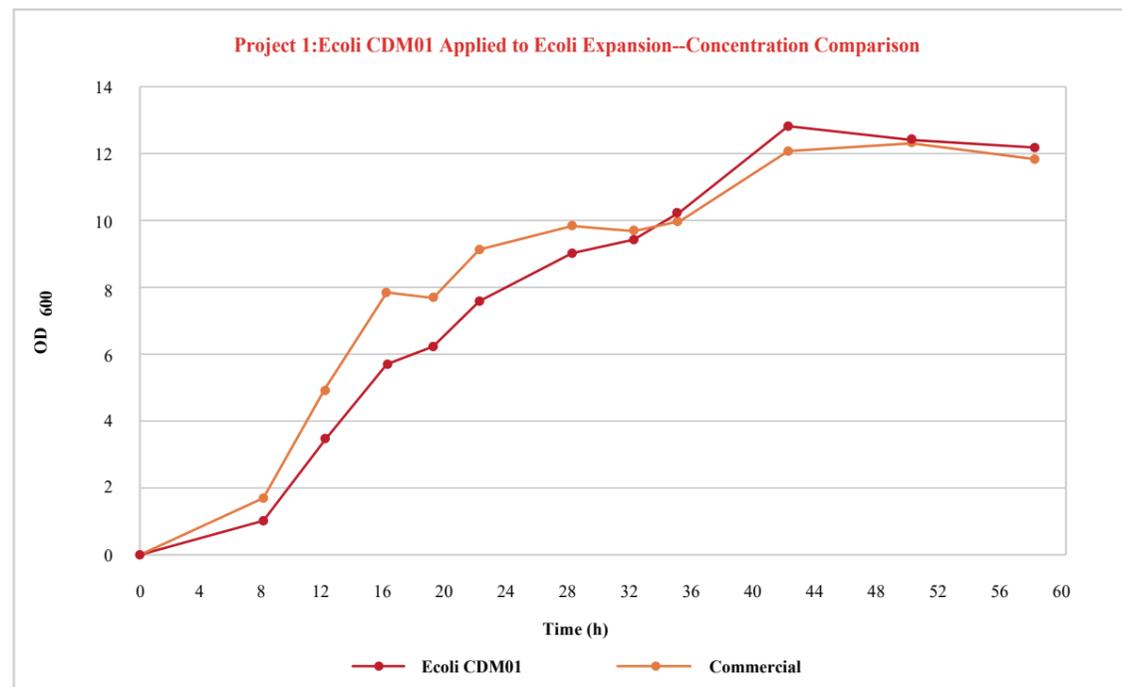
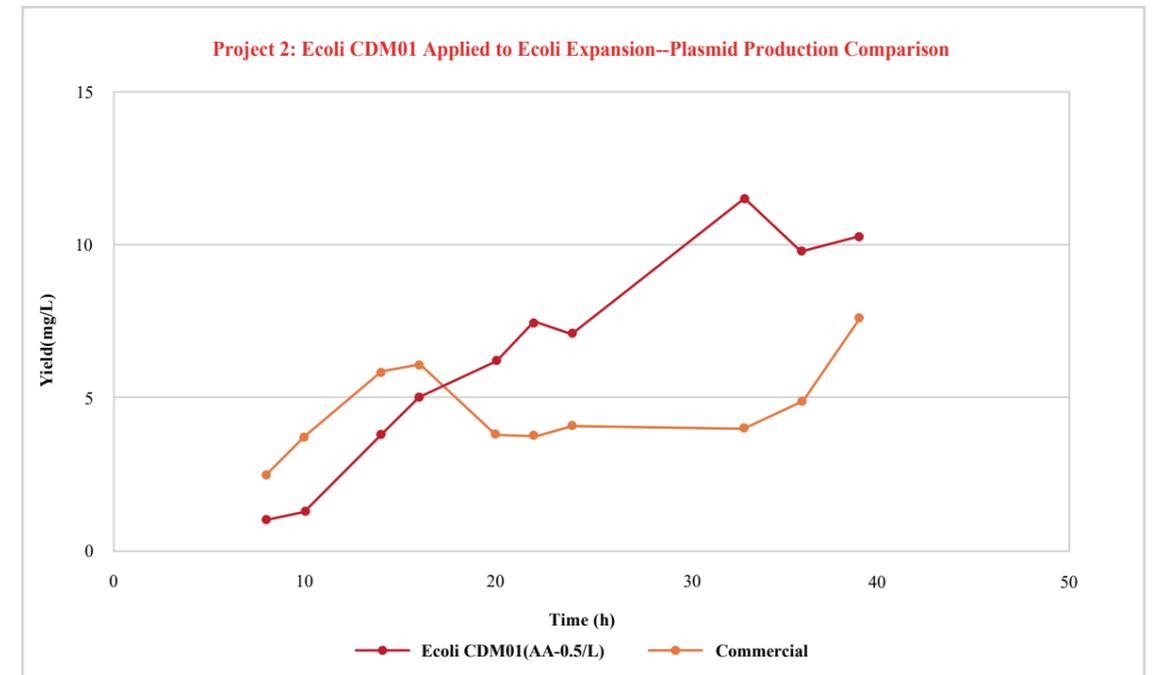
## Application Case

### 1- Ecoli CDM01



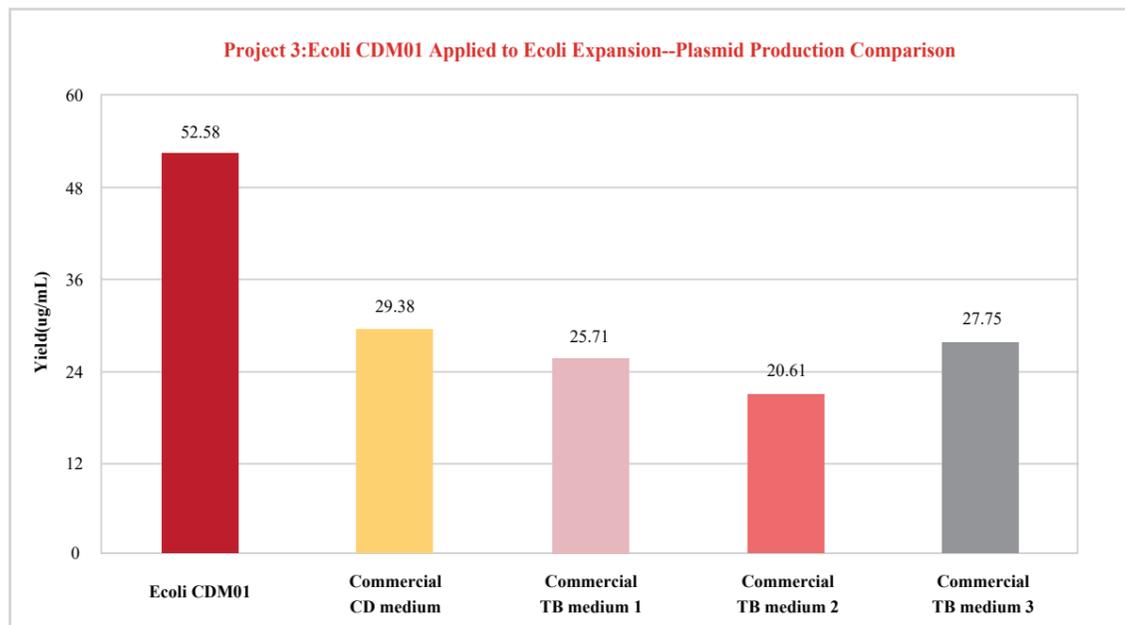
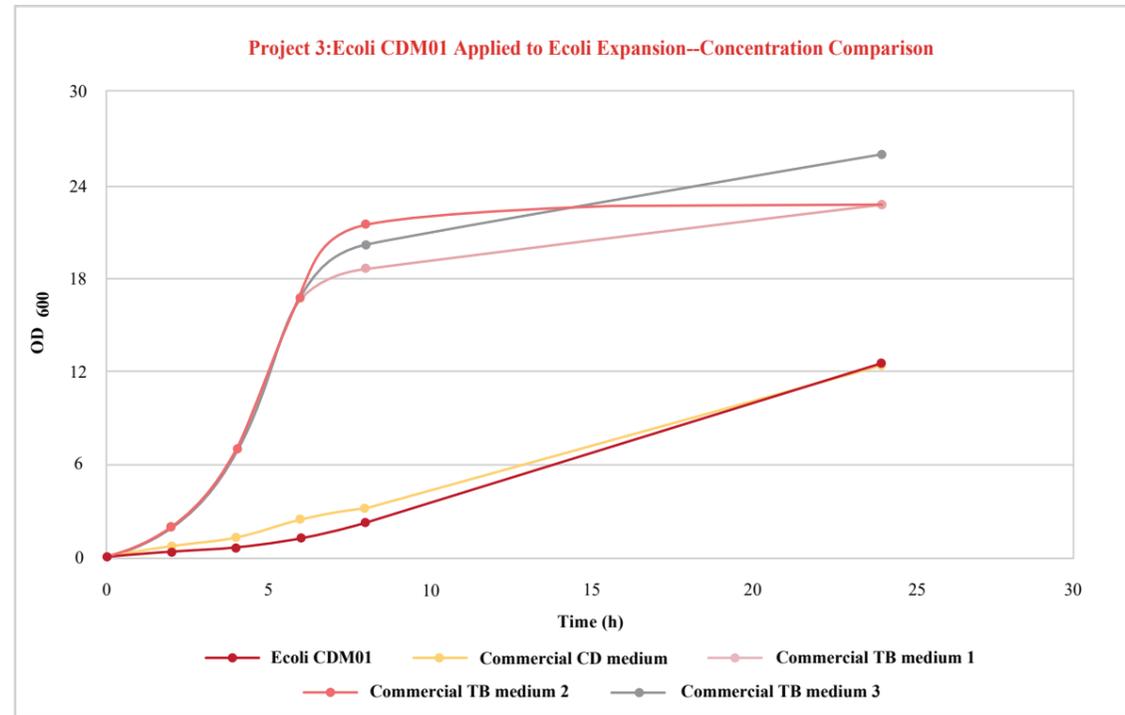
## Application Case

### 2- Ecoli CDM01



## Application Case

### 3、Ecoli CDM01



## PDE RecTrypsin

PDE RecTrypsin is a serine protease that selectively hydrolyzes a peptide chain composed of the carboxy terminus of lysine or arginine in a protein. This product is a Recombinant Trypsin powder which is isolated and purified from Recombinant *Pichia pastoris* and then freeze-dried. The product is a biochemical grade genetically engineered enzyme, does not contain excipients and enzyme inhibitors such as DFP, PMSF and TLCK, and has the same activity and specificity as native Trypsin. The activity of this product is inhibited by serine protease inhibitors such as PMSF and TLCK, metal ion chelation.



### Product Information

Product Name	Product Model	Item No.	Specification
Recombinant Trypsin	PDE RecTrypsin-DP01	PDE-DP01-100/1000	100/1000mg

### Product Advantage

- Meet Chinese Pharmacopoeia standards.
- High safety: recombinant product, animal origin free.
- High purity: recombinant product, no other enzymes, host protein and DNA level meet Chinese Pharmacopoeia standards.
- Excellent cell digestion ability: high purity, avoid affecting cell growth from impurities.
- High S.O.D, same level of digestion with reduced level of added trypsin.

### Using Method

- Digestion solution preparation: take appropriate amount of recombinant trypsin and add DPBS or other balanced salt solution (if EDTA needs to be added, the final concentration is recommended 0-1 mM, preferably no more than 2 mM) to a concentration of 0.1 - 0.3 mg/mL of recombinant trypsin (adjustable as required) and mix gently.
- Filtration and decontamination: the trypsin solution was filtered using a 0.22 μm filter membrane and transferred to a sterile container.
- The filtered trypsin solution can be used directly and the finished product can be stored at 2-8°C for a short period of 2 weeks. -Storage at 20°C for 12 months.

# Recombinant Trypsin Solution

Recombinant trypsin solution is a high purity recombinant enzyme produced by microbial fermentation. It can be used for the dissociation of a variety of attached mammalian cells, including human diploid cells, VERO, MDCK, 293, CHO-K1 and primary chicken embryo cells, and can be used in a wide range of cell culture applications.



## Product Information

Product Name	Product Model	Art. No.	Specification
Recombinant Trypsin Solution	PDE RecTrypsin-LQ02(1×)	PDE-LQ02-100	100mL
		PDE-LQ02-500	500mL
	PDE RecTrypsin-LQ03(10×)	PDE-LQ03-100	100mL
		PDE-LQ03-500	500mL

## Product Advantage

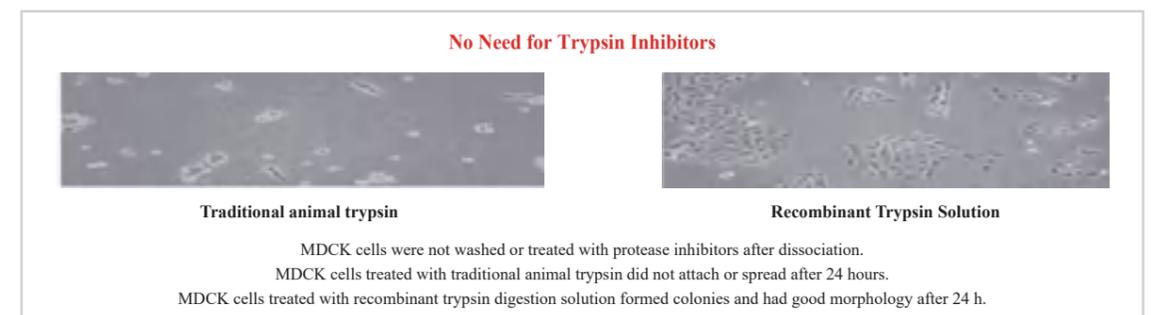
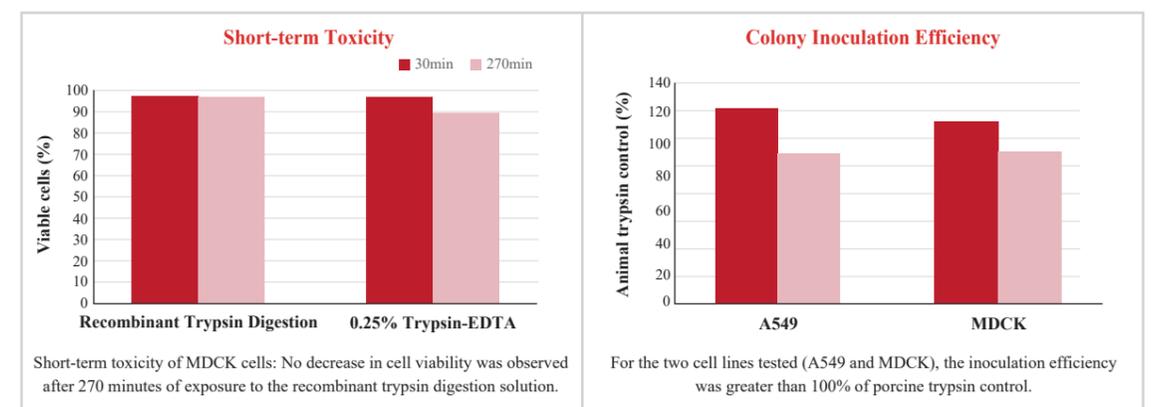
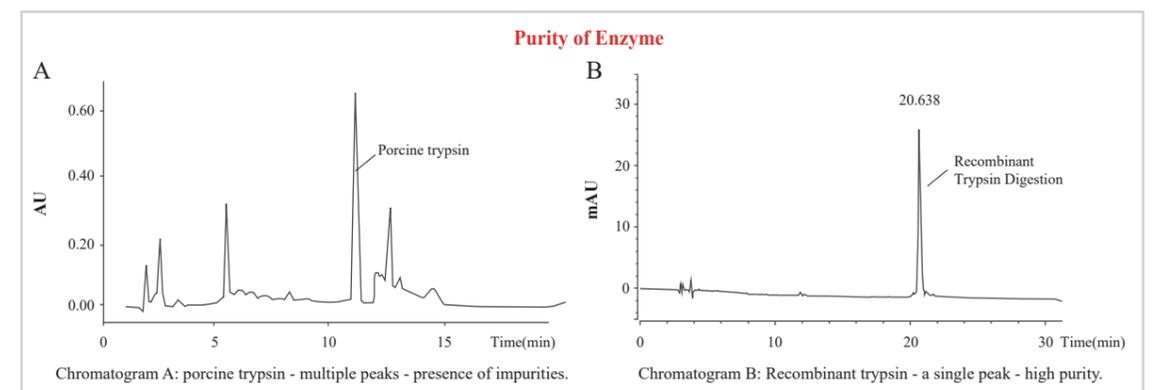
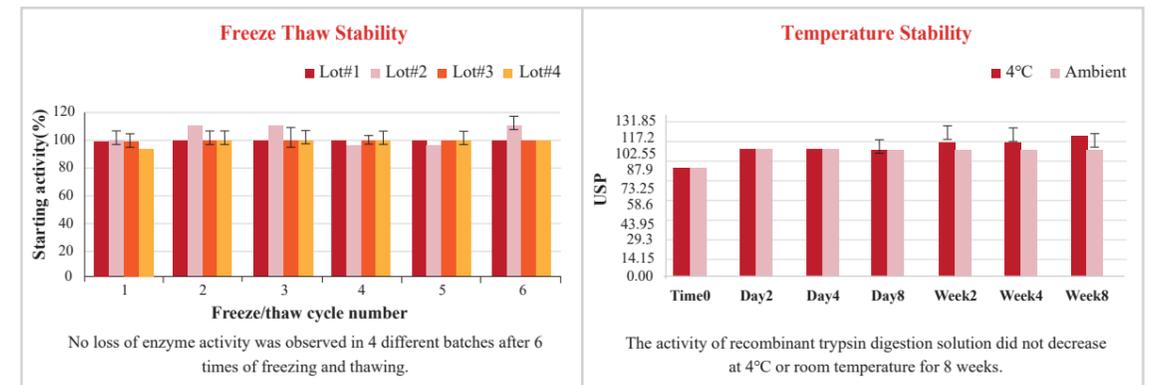
- High-purity recombinant enzyme produced by microbial fermentation, mild effect, high dissociation specificity.
- Suitable for the dissociation of a variety of attached mammalian cells, widely used in cell culture, lower toxicity, little cell damage.
- No need to terminate by trypsin inhibitor: the activity can be reduced/stopped only by dilution.
- Stable activity: can be stored and transported at 2-8 °C, withstand freezing and thawing cycles, free from pollution and safe to use.

## Using method

- Pre-warm the PDE RecTrypsin-LQ02 (1×) and culture medium to 37°C before use.
- Aspirate spent medium and discard.
- Wash the cells with 5mL of DPBS without calcium and magnesium. Aspirate and discard.
- Add an appropriate volume of recombinant trypsin solution to ensure complete coverage of cell monolayer.
- Incubate the cells at 37°C and observe them using a microscope during incubation, until the cells are visibly shrunken and the bottom of the culture vessel shows a visible change in cell morphology or the cells are free by gently tapping the culture flask.
- Add 5 ~ 10 mL of pre-warmed complete medium to flask and terminate the digestion. Transfer the cell suspension to a 15 mL conical tube.
- Centrifuge at 300 g ~ 500 g for 5 ~ 10 minutes. Discard the supernatant and resuspend cell pellet with 2 ~ 5 mL of pre-warmed medium and count to determine the viable cell density and viability.
- Seed, incubate, and subculture according to normal protocols depending on your cell type.

## Application Case

### 1. Recombinant Trypsin Solution



# Benzonase Nuclease Pro

Benzonase Nuclease, also known as unrestricted endonuclease and broad-spectrum nuclease, is a nuclease derived from *Serratia Marcescens* and modified by genetic engineering. It can degrade all forms of DNA and RNA, including double-helical, single-stranded, double-stranded, linear, circular, natural and denatured nucleic acids, into 5' -monophosphate oligonucleotide fragment 3-5 bases long, and it is effective under a variety of operating conditions.



## Product Information

Product Name	Product Model	Art. No.	Specification
Benzonase Nuclease Pro	Ben Nuclease Pro	210615TO-2,5/50/500/5000KU	5KU/50KU/500KU/5000KU

## Product Advantage

- Conform pharmacopoeia standards: conform relevant standards of pharmacopoeia omnipotent nuclease.
- High safety : non-animal recombinant enzyme. No exogenous virus pollution, safe to use.
- Mild to cell - maintains cell health for repeatable results.
- Stable at room temperature - easy to use, easy to use, can directly replace the existing program, without inactivation
- cGMP produced under standard conditions and prepared with high quality raw materials

## Using method

- Sample Collection: Adherent cells: remove the medium, wash the cells with PBS, and remove the supernatant. Suspension cells: collect the cells by centrifugation, wash the cells with PBS, centrifuge at 6,000 rpm for 10 min, and collect the pellet. *Escherichia coli*: collect the bacteria by centrifugation, wash once with PBS, centrifuge at 8,000 rpm for 5 min, and collect the pellet.
- Sample Treatment: Treat the collected cell pellets with lysis buffer at the ratio of mass (g) to volume (mL) 1: (10 ~ 20), or by mechanical or chemical methods on ice or at room temperature (1 g of cell pellet contains about 10<sup>9</sup> cells).
- Enzyme Treatment: Please refer to the User's Manual.
- Supernatant Collection: Centrifuge at 12,000 rpm for 30 minutes and collect the supernatant.

## Application Case

### 1. Benzonase Nuclease Pro

#### High thermal stability

Accelerated test: Residual activity after incubation for 1 hour (%)			
Brand	70°C	75°C	80°C
Tofflon	87.5	79.6	70.8
Sample A	87.2	77.1	66.9
Sample B	84.3	76.2	69.1
Sample C	43.1	27.6	6.0
Sample D	69.4	64.1	53.8
	55°C	60°C	65°C
Sample E	0.82%(Protein precipitation occurs)	0.82%(Protein precipitation occurs)	0(Protein precipitation occurs)

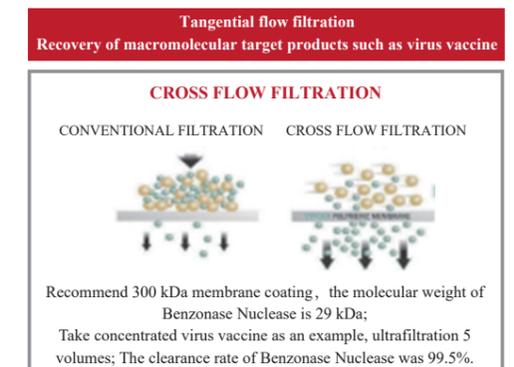
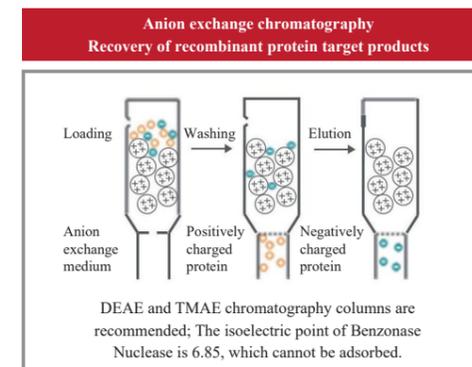
#### The application effect is clearly visible



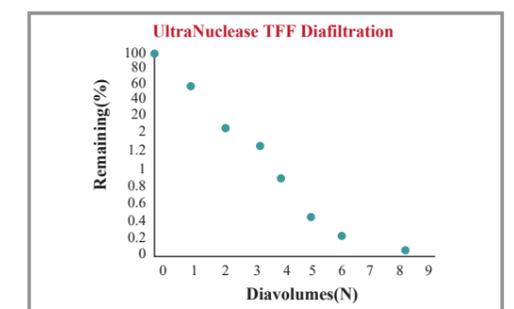
After the 2μgλDNA was degraded for 10min by Benzonase Nuclease with different enzyme amounts, agarose electrophoresis was performed

The bacterial suspension on the left has not been treated by Benzonase Nuclease. The bacterial suspension on the right is treated by Benzonase Nuclease

#### Clearance of Benzonase Nuclease



Anionic Resins	PH	Equilibration Solution	Component
DEAE	7.0	50 mM Tris/50-200mM NaCl	Flow-through
DEAE	8.0	50 mM Tris/50-200mM NaCl	Flow-through
TMAE	7.0	50 mM Tris/50-200mM NaCl	Flow-through
TMAE	8.0	50 mM Tris/50-200mM NaCl	Flow-through



## HEK293 Series Medium Products

They can be used for the growth of HEK293 suspension cells high-density culture, adenovirus, AAV expression, and also lentivirus, proteins and other related products development and production process, can support high density cell expansion and stable product expression, suitable for large-scale manufacturing applications. Using appropriate feeding strategy based on cell strain traits can significantly improve cell growth and expression level and quality of antibody.



### Product Information

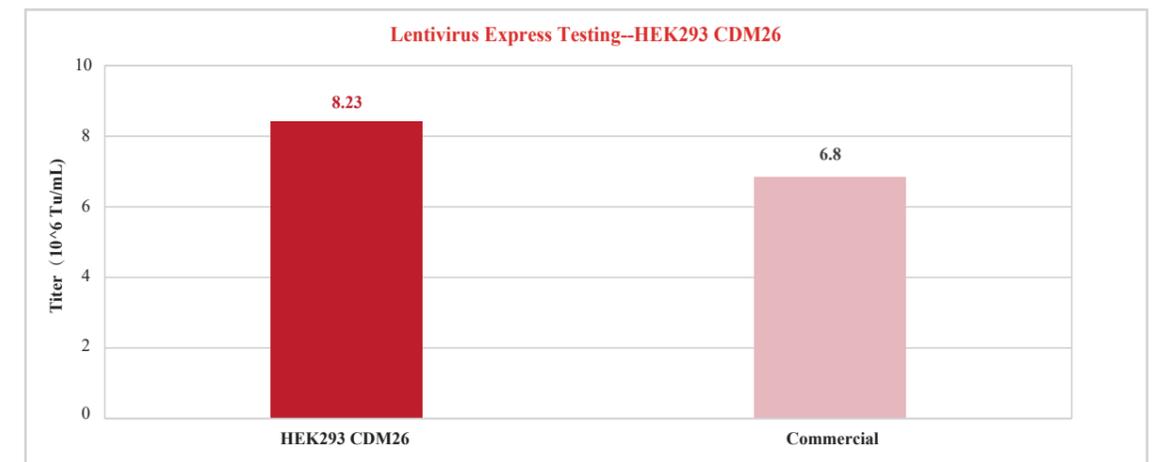
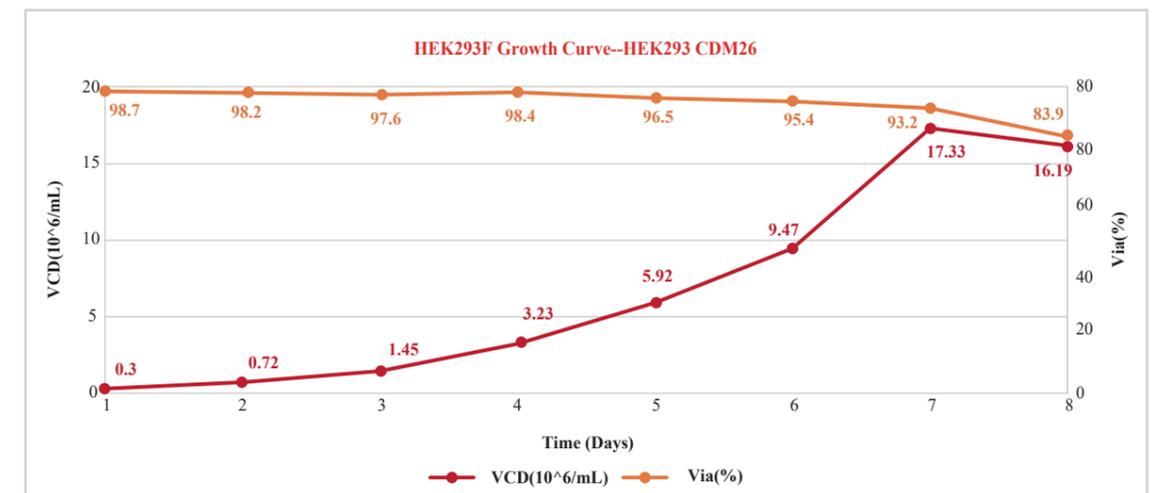
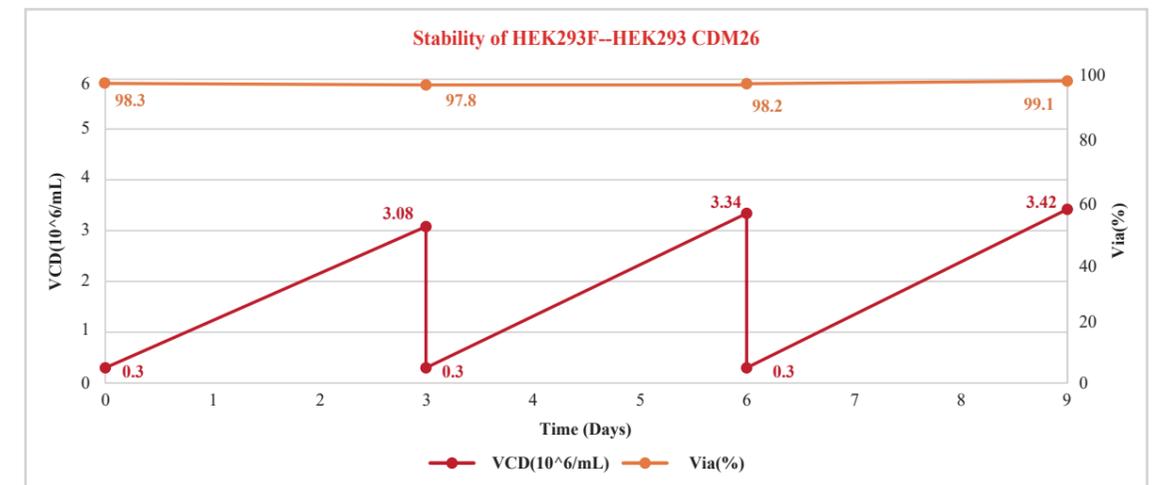
Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives	
HEK293 CDM15	LQ15-1000(Liquid) DP15,50L/100L(Dry Powder)	Animal origin free, protein-free, chemically defined	HEK293F,HEK293T HEK293H,Expi293	
HEK293 CDM26	LQ26-1000(Liquid) DP26,50L/100L(Dry Powder)			
HEK293 CDM26 Pro	LQ26-2-1000(Liquid) DP26-2,50L/100L(Dry Powder)			
Tobitec FC	LQF01-C-125/500/1000(Liquid) DPF01-C,5L/10L/50L(Dry Powder)			
Tobitec FedVigor02	LQ47-125/500/1000(Liquid)			General Purpose
	DP47,5L/10L/50L(Dry Powder)			

### Product Advantage

- Chemically-defined, animal-free, protein-free, FDA master file.
- Suitable for HEK293 high density suspension culture, adaptable and rich nutrients.
- Suitable for bioreactor large - scale culture, supporting batch, fed-batch and perfusion culture.
- Effectively support final product expression to ensure stable and high titer.
- cGMP production conditions, continuous needle milling production to ensure stable consistency of different batches.

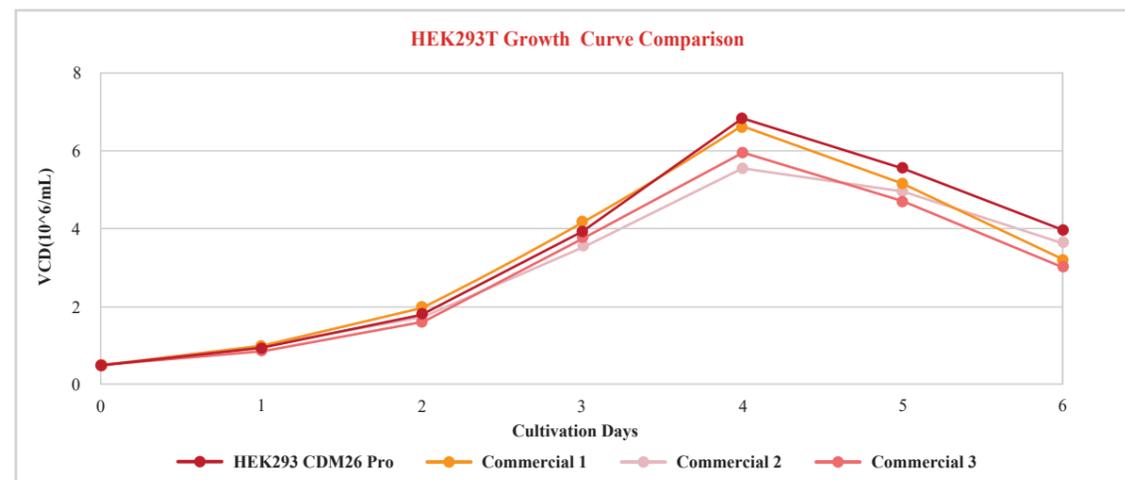
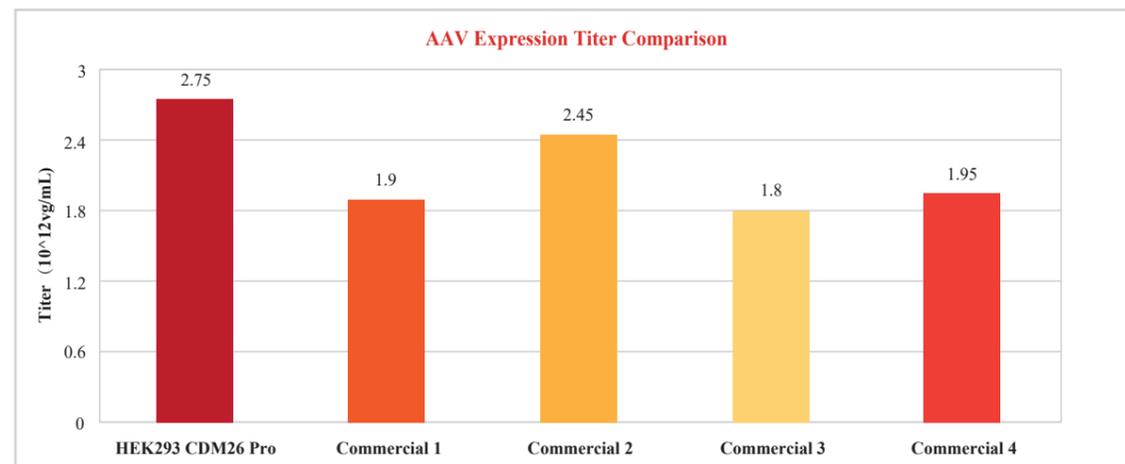
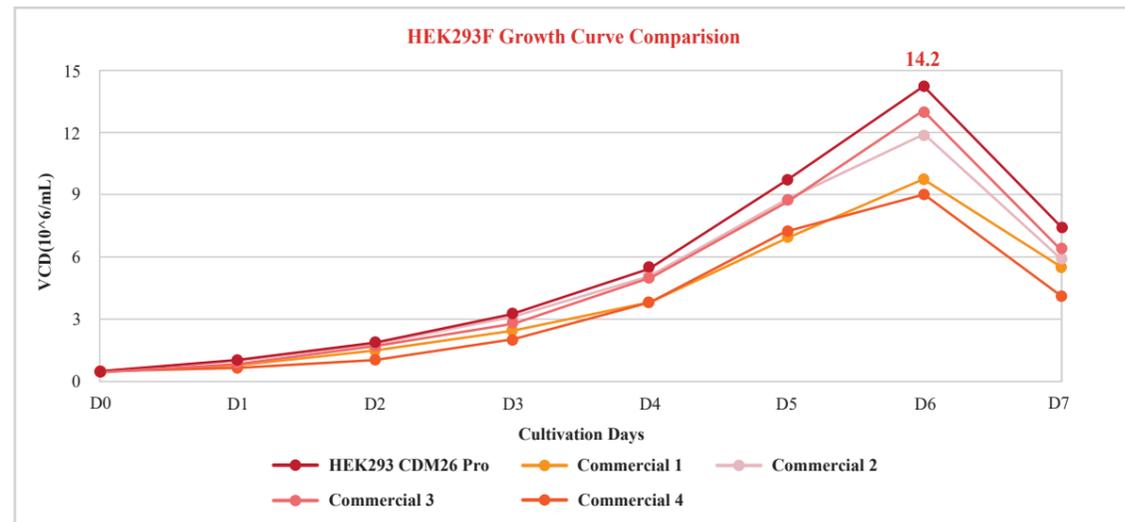
## Application Case

### 1, HEK293 CDM26



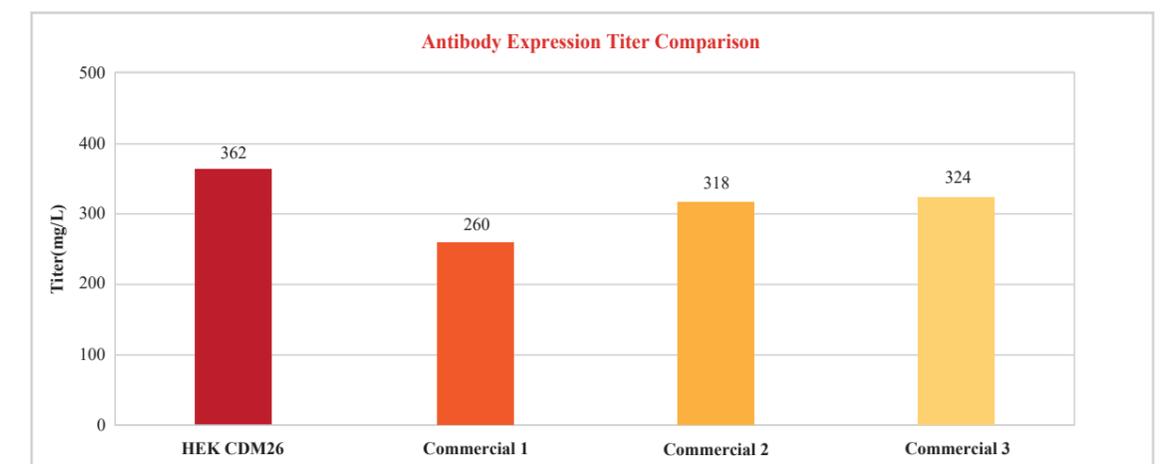
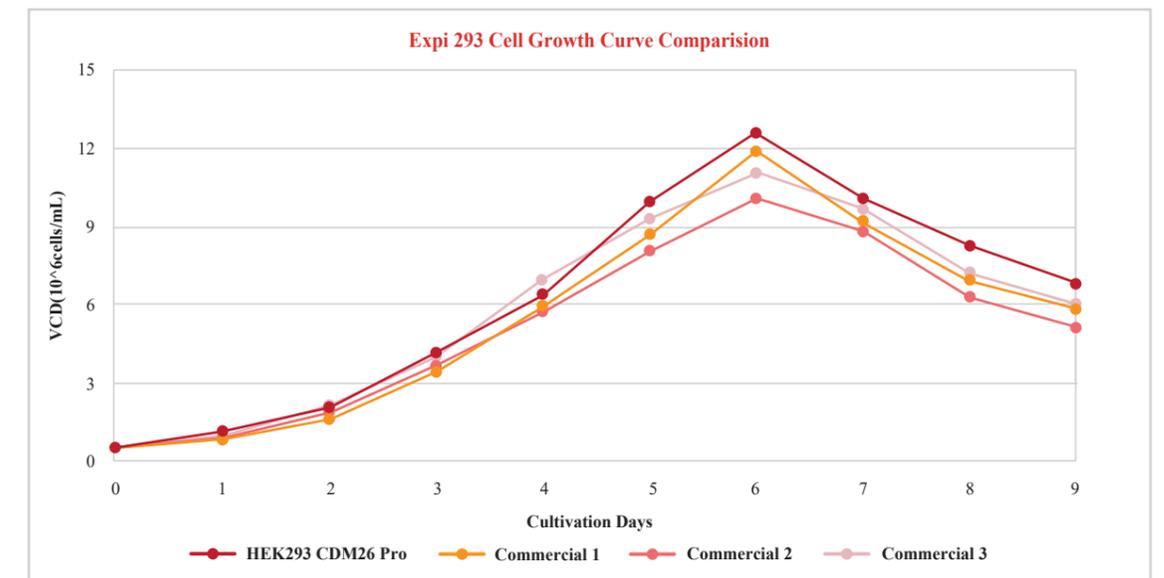
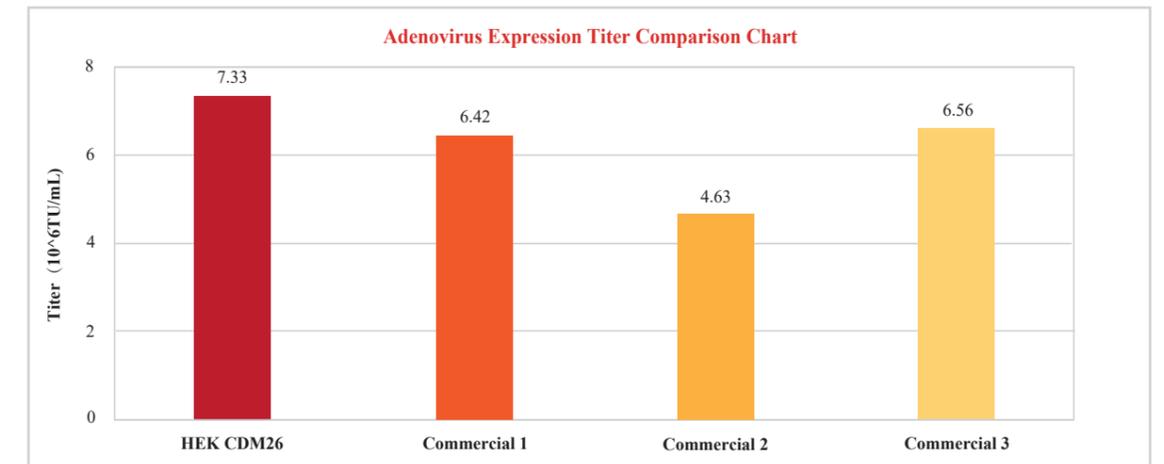
## Application Case

### 2、HEK293 CDM26 Pro



## Application Case

### 3、HEK293 CDM26 Pro



## CHO Series Medium Products

The CHO media series includes three stable transfer media: CHO CDM27, CHO CDM34, CHO CDM35, one instant transfer media CHO CDM10, and two supplementary culture media Tobitec FA and Tobitec FB, all of which are fully chemically defined, animal-derived and protein-free. They are suitable for large-scale suspension culture of CHO and product expression, can support high-density cell expansion and stable product expression. Among them, Tobitec FA & FB are highly efficient feeding mediums specially designed for improving CHO cell growth and production, which can satisfy the nutrient needs from high cell density culture and high level expression.



### Product Information

Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
CHO CDM27 (stable transfected)	LQ27-1000(Liquid)	Animal origin free, protein-free, chemically defined	CHO-k1, CHO-S, CHO-ZN and CHO-Q, etc
	DP27,50L/100L(Dry Powder)		
CHO CDM34 (stable transfected)	LQ34-1000(Liquid)		
	DP34,50L/100L(Dry Powder)		
CHO CDM35 (stable transfected)	LQ35-1000(Liquid)		
	DP35,50L/100L(Dry Powder)		
CHO CDM10 (transient transfected)	LQ10-1000(Liquid)		
	DP10,50L/100L(Dry Powder)		

### Product Advantage

- Animal origin free, protein-free, fully chemically defined culture media products, FDA master file.
- Complete product series, can adapt to a variety of different CHO cell lines, and supporting feeding;
- Suitable for high-density suspension culture of CHO cells with strong adaptability and rich nutrients.
- Suitable for bioreactor large-scale scale-up culture processes, supporting batch, fed-batch and perfusion culture modes.
- Effective support for transfection and subsequent protein expression, ensuring stable and high quality expression of antibodies and proteins.
- Highly quality imported raw materials to formulate the product with high quality and stability.
- cGMP standard production conditions, using continuous needle milling equipment for power medium production to ensure good product consistency of different batches.

## Tobitec FA & Tobitec FB

Tobitec FA & FB and Tobitec FA Pro & FB Pro are chemically-defined feeding mediums without animal-derived components, growth factors, polypeptides, hydrolysates and phenol red, containing amino acids, vitamins, glucose, inorganic salts, and trace elements. Our products are highly efficient feeding mediums specially designed for improving CHO cell growth and production, which can satisfy the nutrient needs from high cell density culture and high level expression. Our products are also suitable for different cell lines including CHO-K1, CHO-S, DG44, CHO-ZN, etc, selected by GS system and DFHR system. Using appropriate feeding strategy based on cell strain traits can significantly improve cell growth and expression level and quality of antibody.



### Product Information

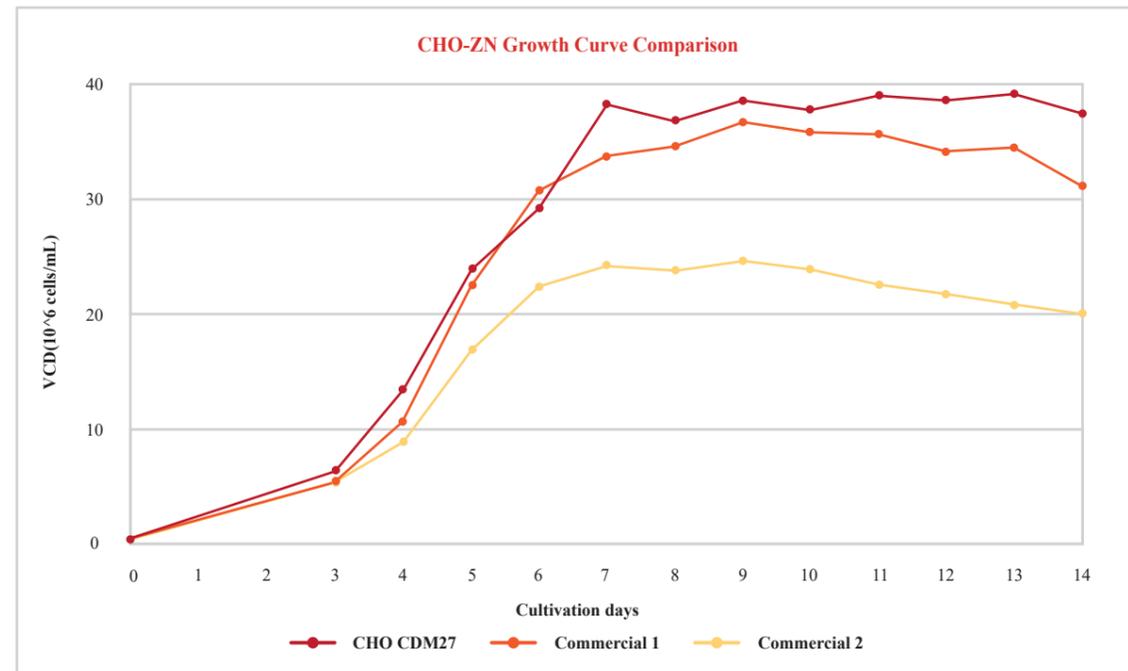
Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
Tobitec FA	LQF01-A-125/500/1000(Liquid)	Animal origin free, protein-free, chemically defined	CHO-ZN, CHO-k1, CHO-S, CHO-Q and etc.
	DPF01-A,10L/50L(Dry Powder)		
Tobitec FB	LQF01-B-125/500/1000(Liquid)		
	DPF01-B,5L/10L(Dry Powder)		
Tobitec FA Pro	LQF02-A-125/500/1000(Liquid)		
	DPF02-A,10L/50L(Dry Powder)		
Tobitec FB Pro	LQF02-B-25/500/1000(Liquid)		
	DPF02-B,5L/10L(Dry Powder)		

### Product Advantage

- Animal origin free, protein-free, fully chemically defined culture media products.
- Complete product series, can adapt to a variety of different CHO cell lines, and supporting feeding;
- Suitable for high-density suspension culture of CHO cells with strong adaptability and rich nutrients.
- Suitable for bioreactor large-scale scale-up culture processes, supporting batch, fed-batch and perfusion culture modes.
- Effective support for transfection and subsequent protein expression, ensuring stable and high quality expression of antibodies and proteins.
- Highly quality imported raw materials to formulate the product with high quality and stability.
- cGMP standard production conditions, using continuous needle milling equipment for power medium production to ensure good product consistency of different batches.

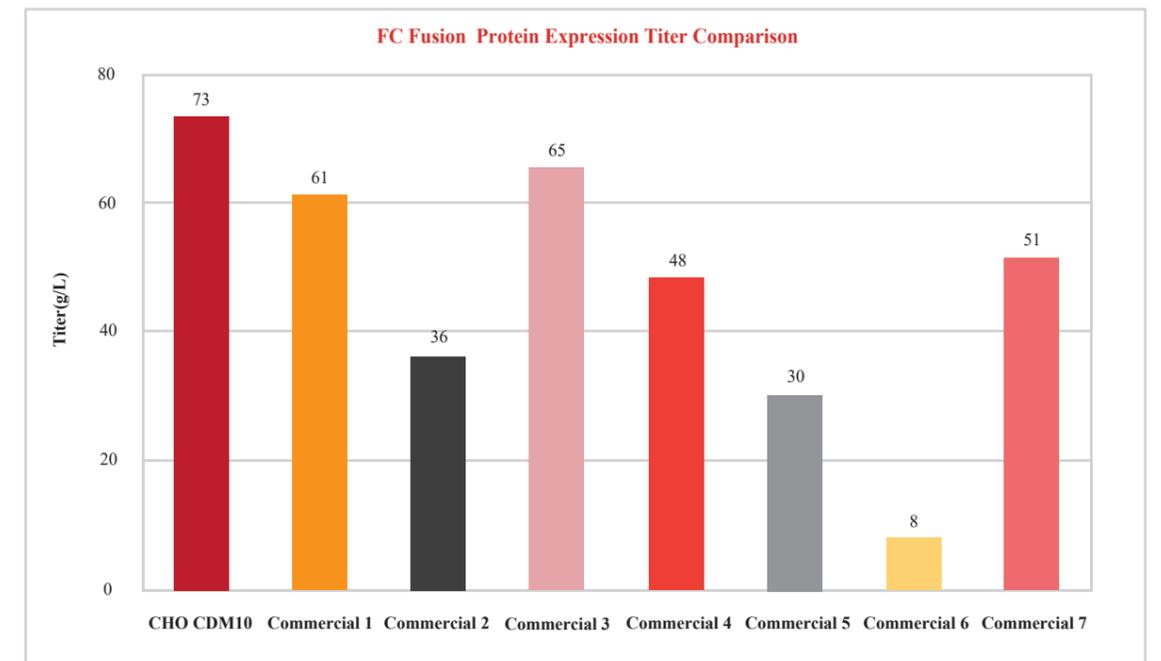
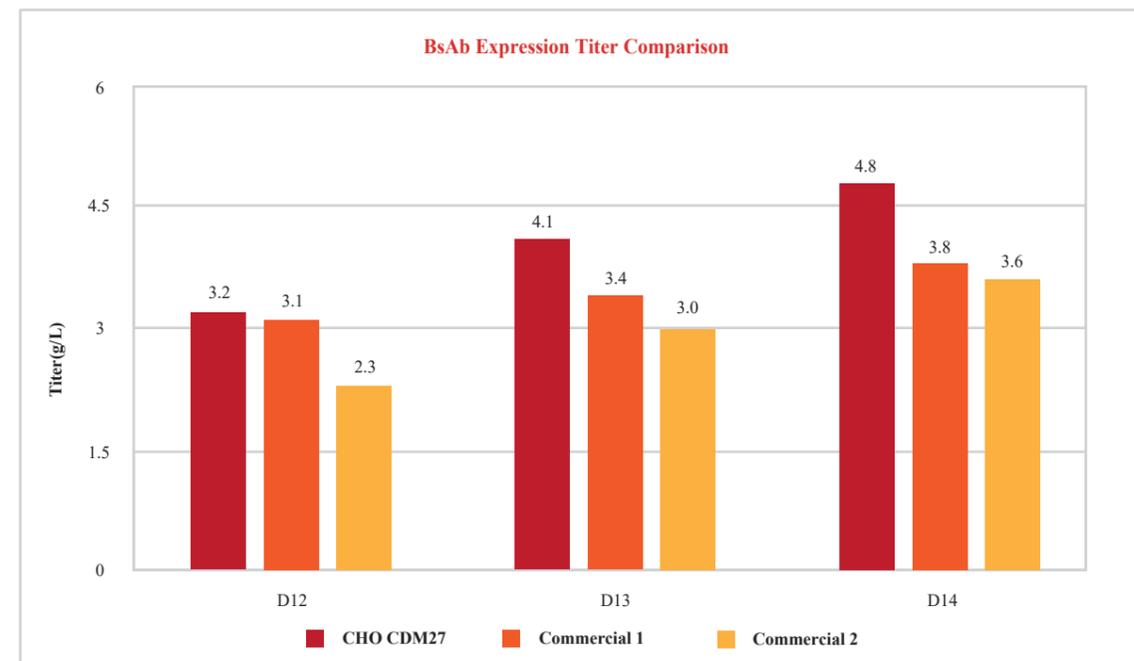
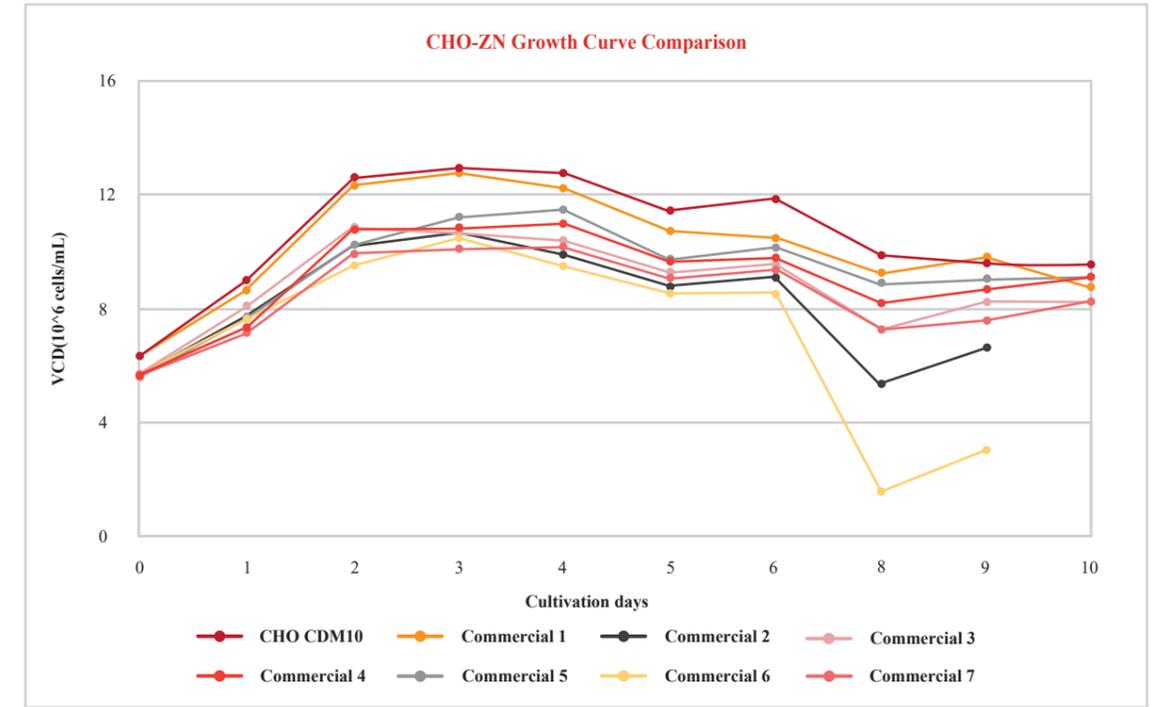
## Application Case

### 1- CHO CDM27



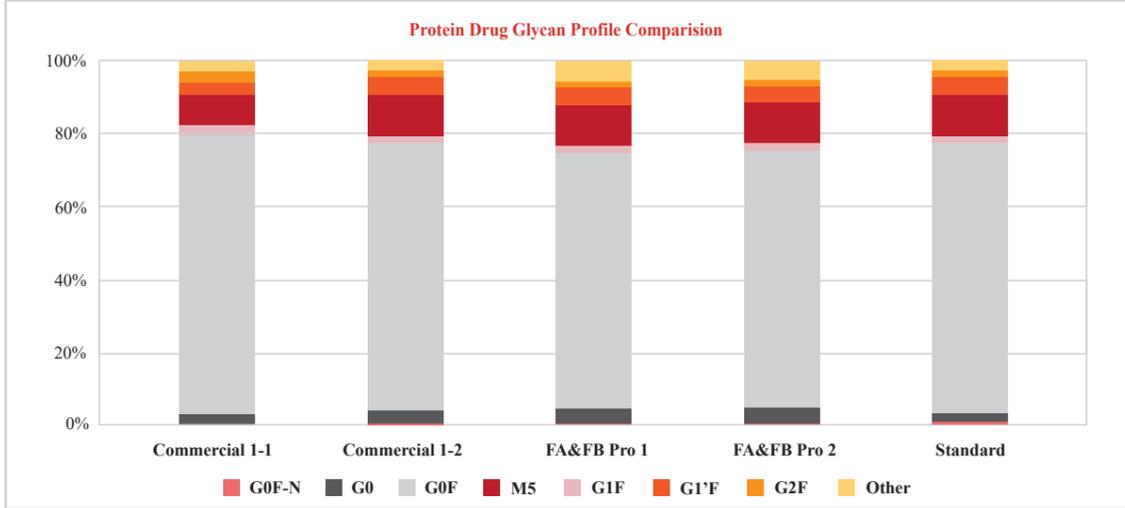
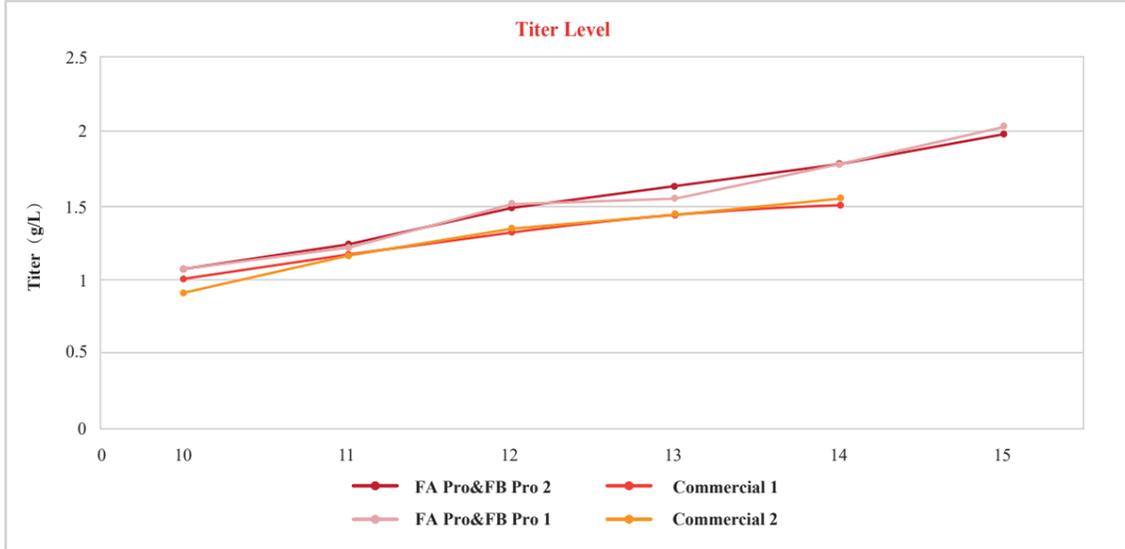
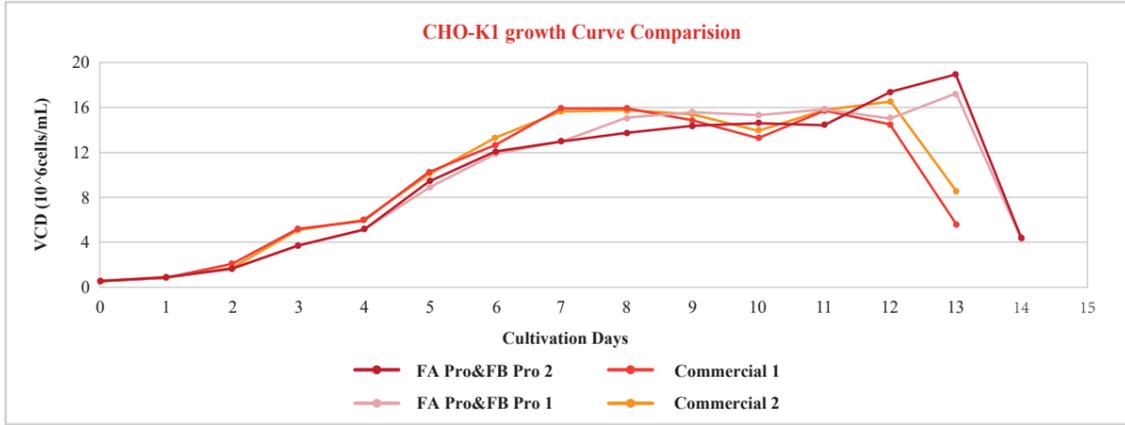
## Application Case

### 2- CHO CDM10



### Application Case

#### 3. Tobitec FA Pro&FB Pro



## Insect Serum-free Medium

Insect SFM01 and Insect SFM01 Pro mediums are serum-free and animal origin-free medium, adapted to insect cells (Sf 9, High five, etc.) suspension domestication and scale up suspension culture, supporting rapid high-density expansion of insect cells and efficient expression of protein products, can be used in the development and production process of vaccine, VLP and other products.



### Product Information

Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
Insect SFM01	LQ11-1000(liquid)	serum-free, animal origin free	Sf9, High five
	DP11,50L,100L(Dry Powder)		
Insect SFM01 Pro	LQ20, 1000mL(liquid)		
	DP20,50L,100L(Dry Powder)		

### Product Advantage

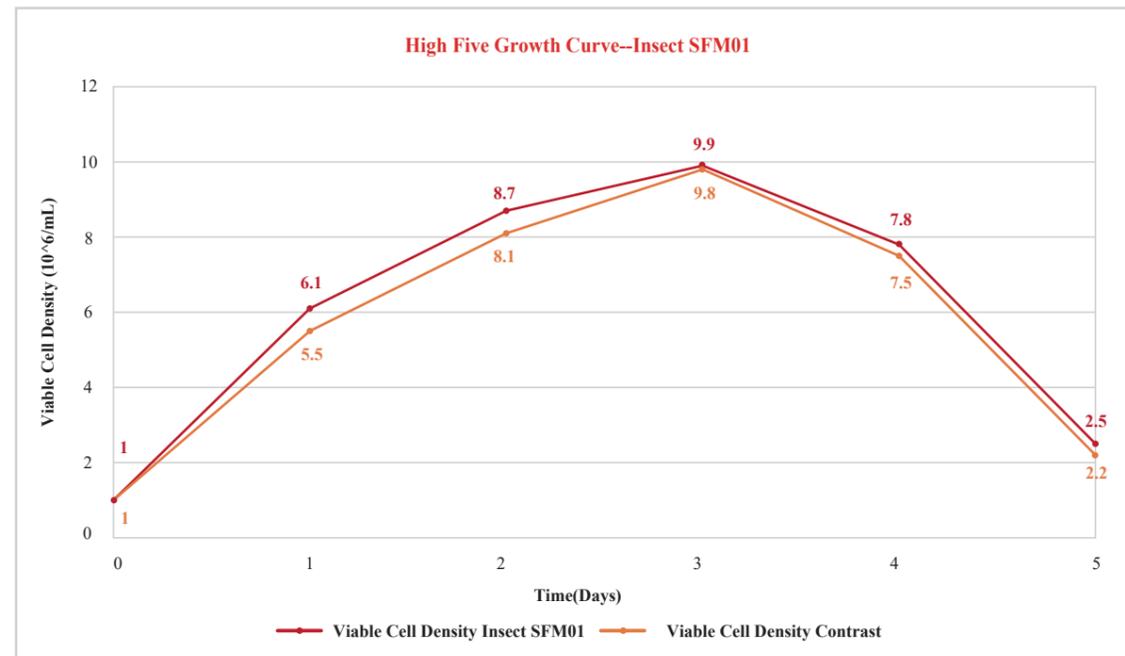
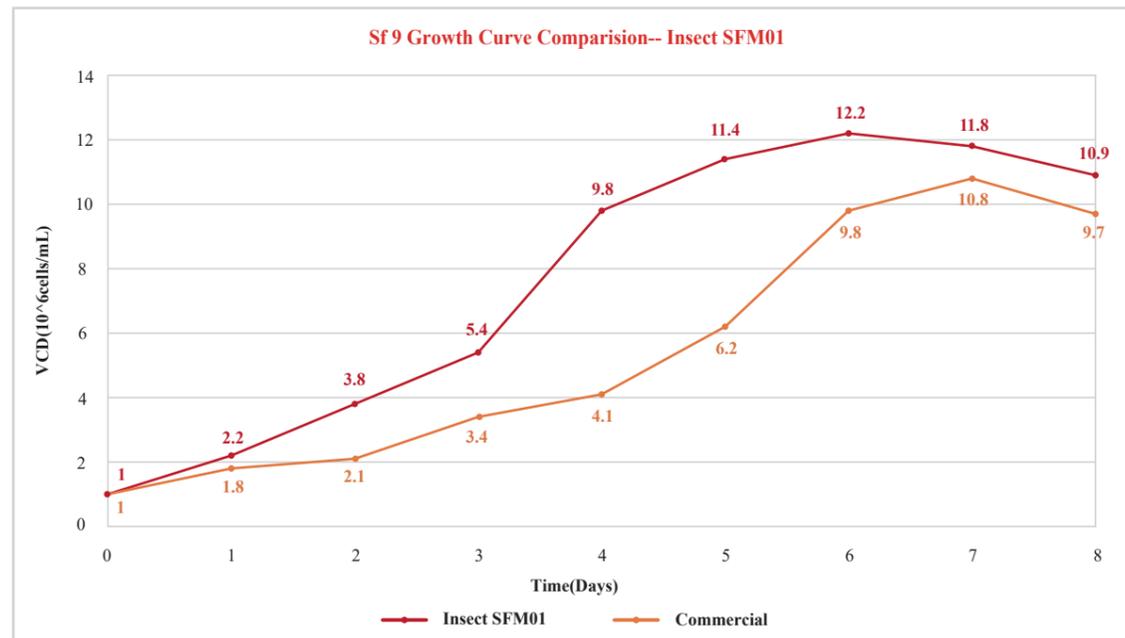
- Component clear, serum free, animal origin-free.
- Suitable for high density culture of insect cells, adaptable and rich nutrients.
- Suitable for bioreactor large - scale culture, supporting batch, fed-batch and perfusion culture.
- Effectively support final product expression to ensure stable and high titer.
- cGMP production conditions, continuous needle milling production to ensure stable consistency of different batches.

### Precaution

- Insect SFM01 combined with Insect TE01 additive.
- It can be used in the process of Insect cell thawing, cell passage, high-density cell suspension fed-batch culture expansion and baculovirus transfection expression.
- The basic medium is suitable for scientific research and the production of large-scale biological products based on cell culture.
- It cannot be directly used in the human body or used as a medication

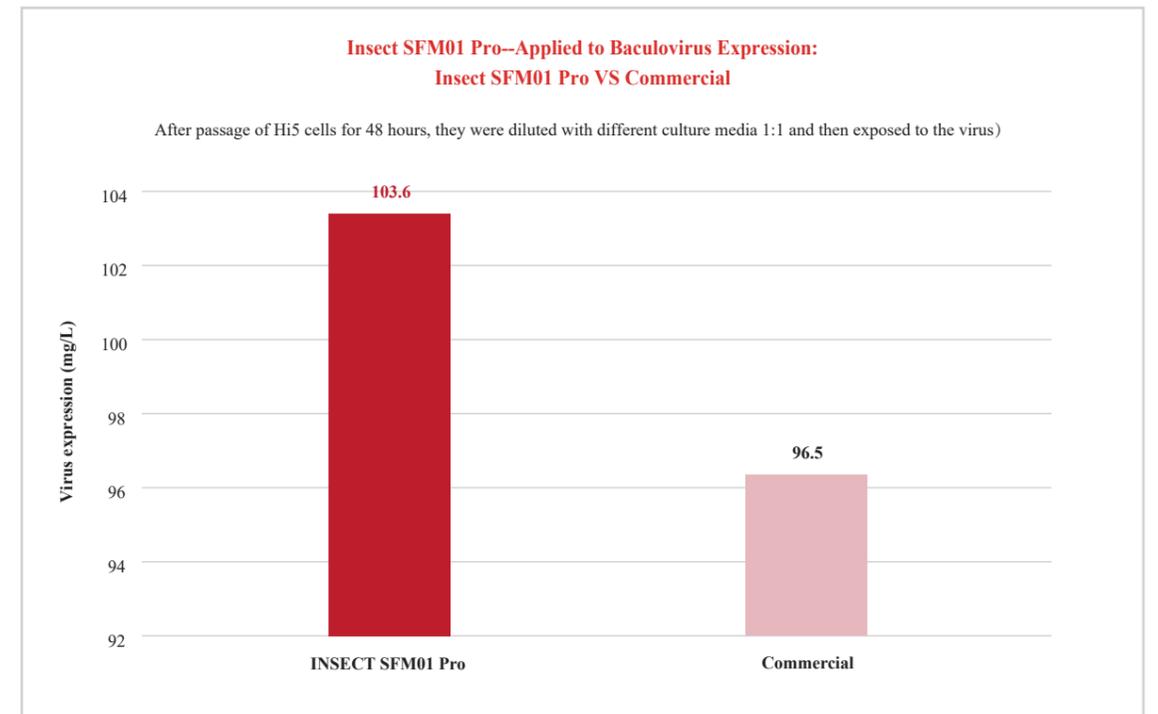
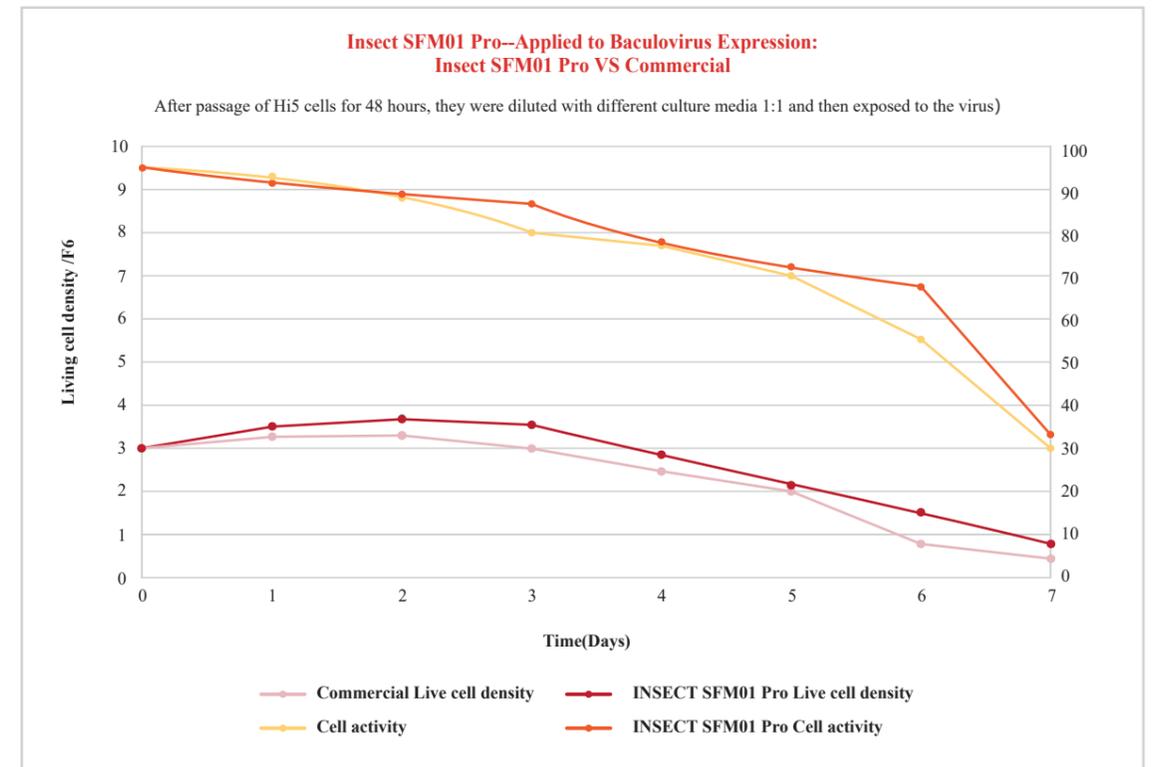
## Application Case

### 1- Insect SFM01



## Application Case

### 2- Insect SFM01 Pro



## MDCK Serum-free Medium

MDCK SFM01 medium is a serum-free medium, without any animal-derived components. It is suitable for MDCK cell suspension domestication and scale up serum-free suspension culture without the addition of serum during the culture process. Supports rapid MDCK expansion, high density culture and influenza vaccine production in a completely serum-free system. Can be used in the R&D and production process of influenza vaccine related products, and can support from R&D to scale up production.



### Product Information

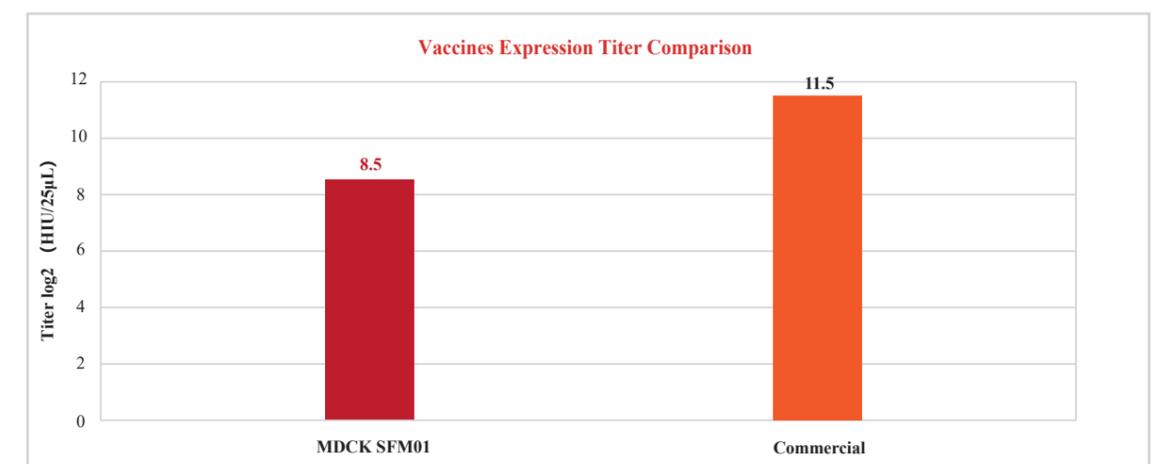
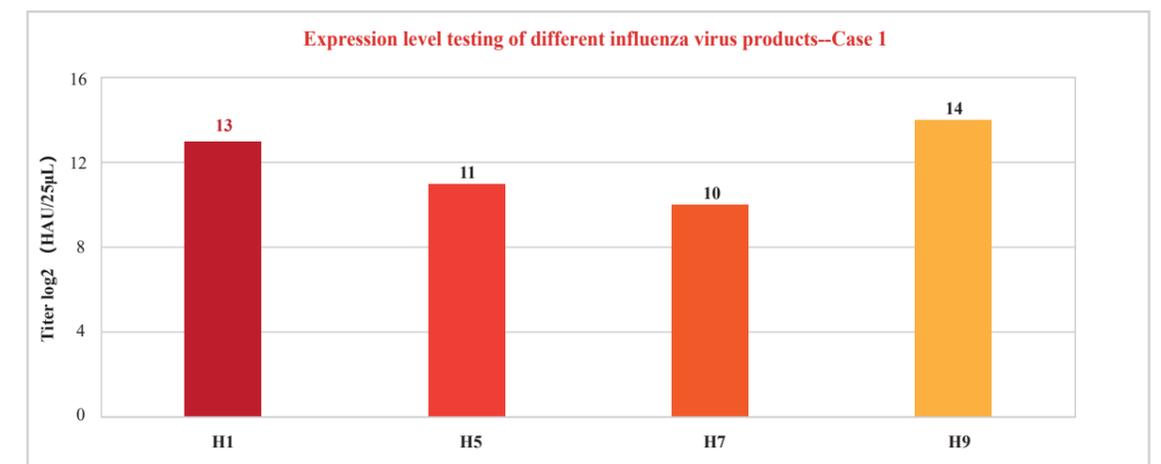
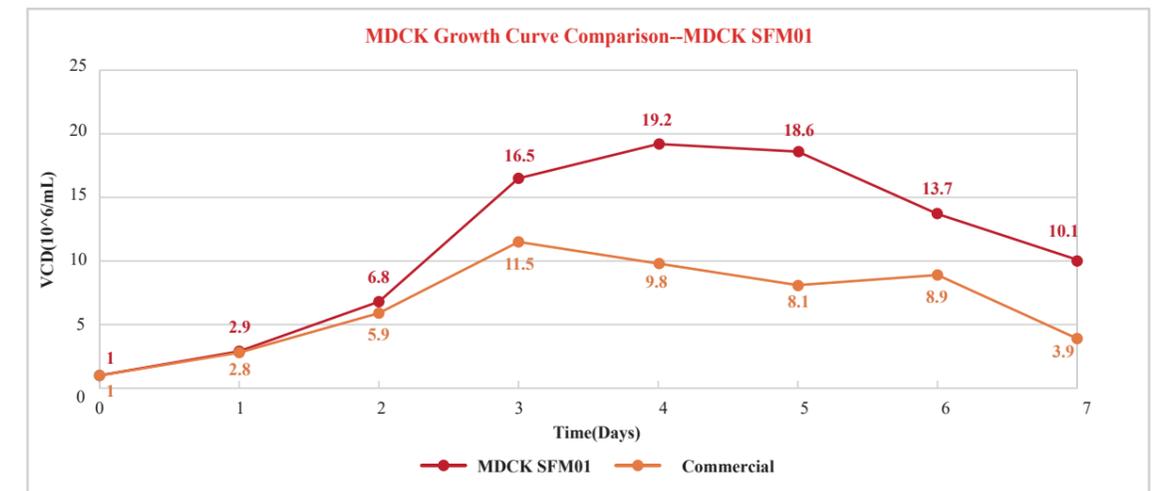
Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
MDCK SFM01	LQ17, 1000mL(Liquid)	serum-free, animal origin free	MDCK
	DP17, 50L, 100L(Dry Powder)		

### Product Advantage

- Animal-derived free and serum-free culture media products.
- Supports high density culture and efficient proliferation of MDCK cells, Supports efficient amplification of influenza viruses.
- Suitable for bioreactor large-scale scale-up culture processes, supporting batch, fed-batch and perfusion culture.
- Effectively support final product expression to ensure stable and high titer.
- cGMP production conditions, using continuous needle milling equipment for production to ensure good product consistency of different batches.

## Application Case

### 1、MDCK SFM01



## VERO Serum-free Medium

VERO SFM01 and VERO SFM01 Pro are serum-free, animal origin-free medium and hydrolysates free medium. They are suitable for the wall culture of VERO cells in serum-free culture system, and can be used for the scale up culture and product expression production of VERO cells in 2D (culture flasks, cell factories, etc.) and 3D micro-carrier reactors, without the addition of serum during the culture process. They can be used in the R&D and production process of influenza vaccine and other related products, and can support the whole process from R&D to scale up production.



### Product Information

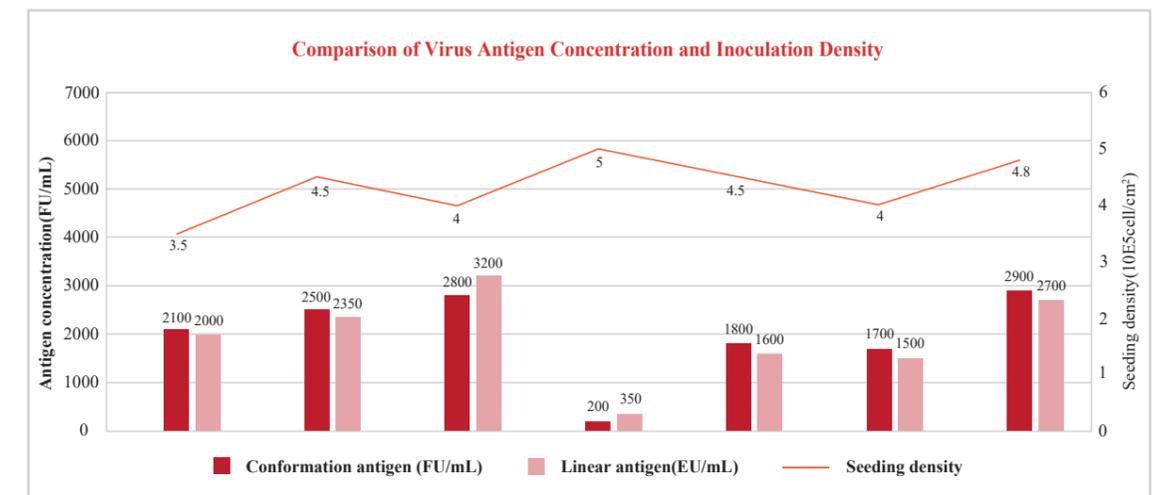
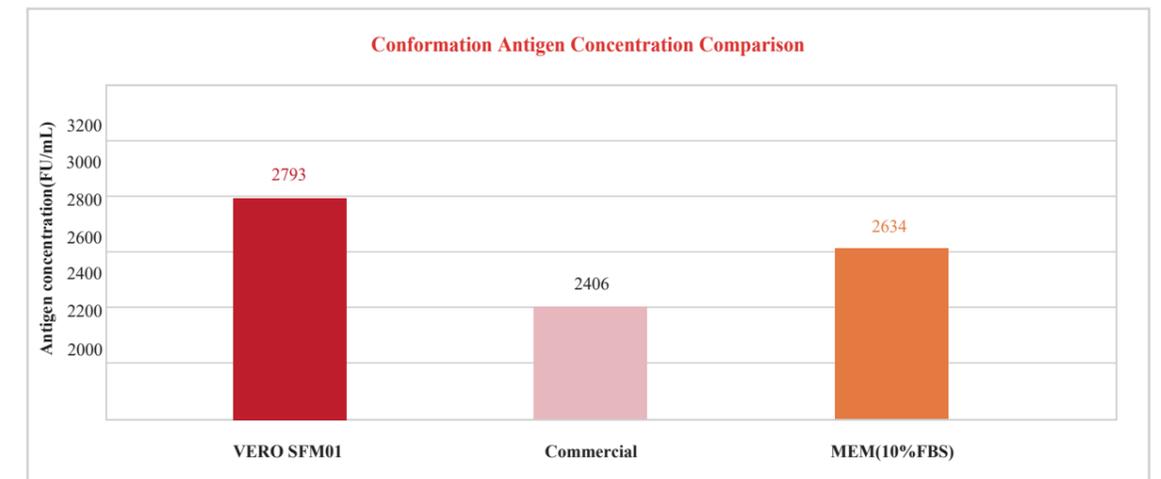
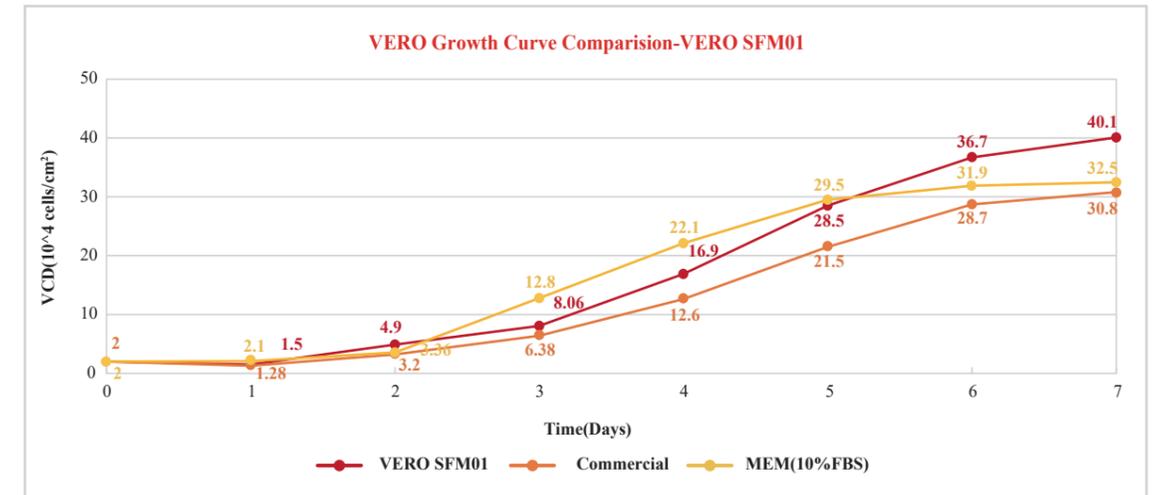
Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
VERO SFM01	LQ25, 1000mL(Liquid)	serum-free, animal origin free	VERO
	DP25, 50L/100L(Dry Powder)		
VERO SFM01 Pro	LQ22, 1000mL(Liquid)		
	DP22, 50L/100L(Dry Powder)		

### Product Advantage

- Component clear, serum free, animal origin-free, FDA master file.
- Support rapid expansion and high density culture under VERO Cell 2D and bioreactor microcarrier culture system.
- Support efficient and stable expression of target products such as viral vaccines.
- Suitable for bioreactor large-scale process, support microcarrier ball to ball continuous scale-up technology process.
- cGMP production conditions, continuous needle milling production to ensure stable consistency of different batches.

## Application Case

### 1、VERO SFM01



## HDC Serum-reduced Medium

HDC SR01 is a serum-reduced, animal origin-free, and hydrolysates free medium. It is suitable for the adherent culture of HDC cells, a diploid cell line, and can be used for the scale-up culture and product expression production of HDC(MRC-5, WI38, 2BS, etc) cells in 2D (culture flasks, cell factories, etc.) and 3D microcarrier reactors. The medium requires only 2% serum supplementation exclusively during the HDC cell expansion phase to support optimal cell growth, with no serum required during the virus production phase. It can be used in the R&D and production process of rabies vaccine and other related products, and can support the whole process from R&D to scale up production.



### Product Information

Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
HDC SR01	LQ50, 1000mL(Liquid)	serum-reduced	HDC cells
	DP50, 50L/100L(Dry Powder)		
Tobitec HDC01	LQ52, 1000mL(Liquid)		
	DP52, 50L/100L(Dry Powder)		

### Product Advantage

- Component clear, serum-reduced, animal origin-free.
- Support rapid expansion and high density culture under HDC Cell 2D and bioreactor microcarrier culture system.
- Support efficient and stable expression of target products such as viral vaccines.
- Suitable for bioreactor large-scale process, support microcarrier ball to ball continuous scale-up technology process
- cGMP production conditions, continuous needle milling production to ensure stable consistency of different batches.

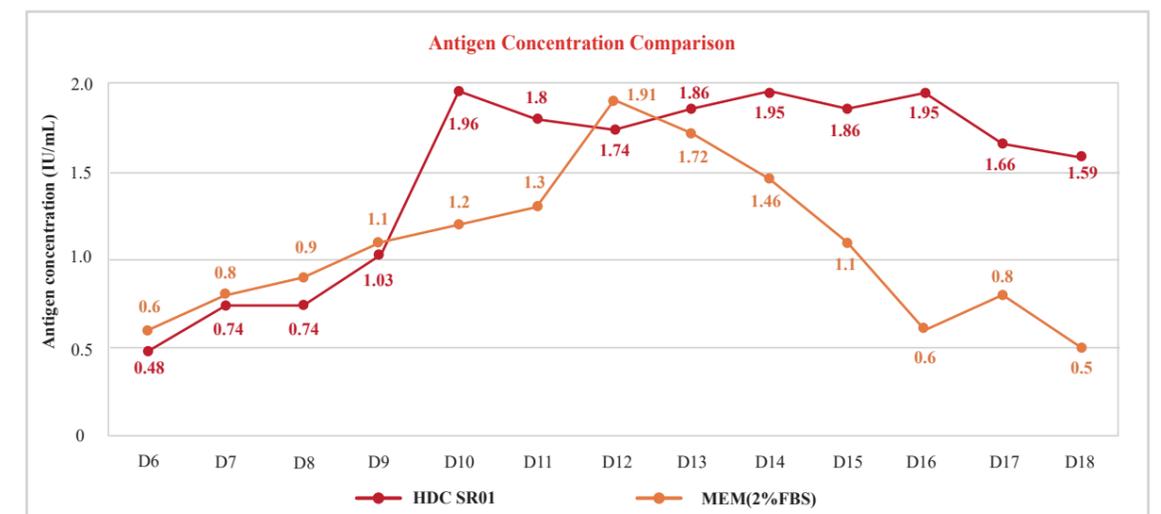
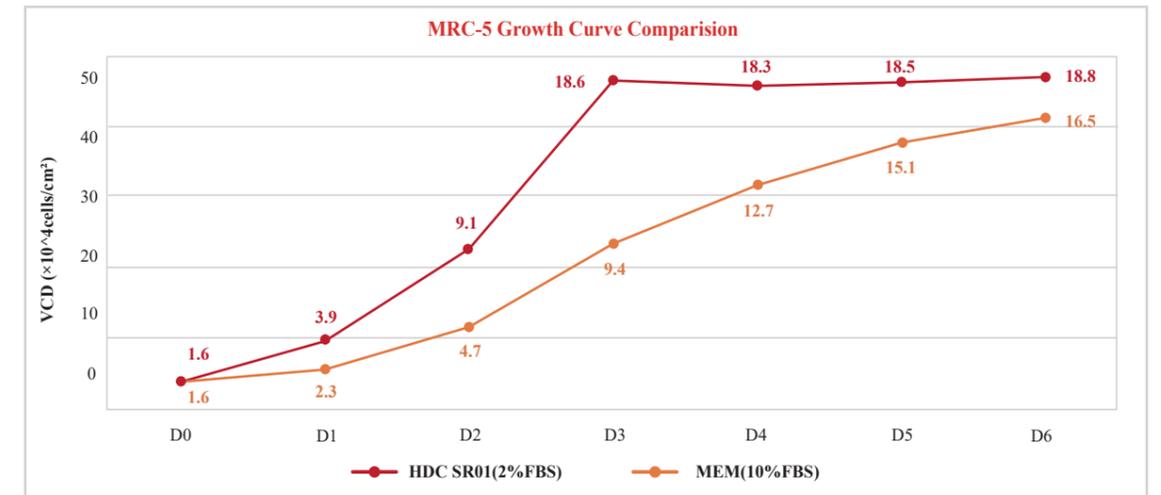
## Application Case

### 1、HDC SR01

Basic medium:HDC SR01    Cell:MRC-5    Sheet-shaped carrier:24g/L    Product type:Human rabies vaccine

Culture model:3D, Bioreactor, 10L(7L Working Volume)

Virus Production Period:18 days



## BHK Serum-free Medium

BHK SFM01 is serum-free, animal origin-free medium. It is suitable for BHK cell suspension domestication and scale up serum-free suspension culture without the addition of serum during culture. Supports rapid BHK expansion, high density culture and virus vaccine production in a completely serum-free system. It can be used in the R&D and production process of pseudorabies virus, etc., and can support from R&D to scale up production.



### Product Information

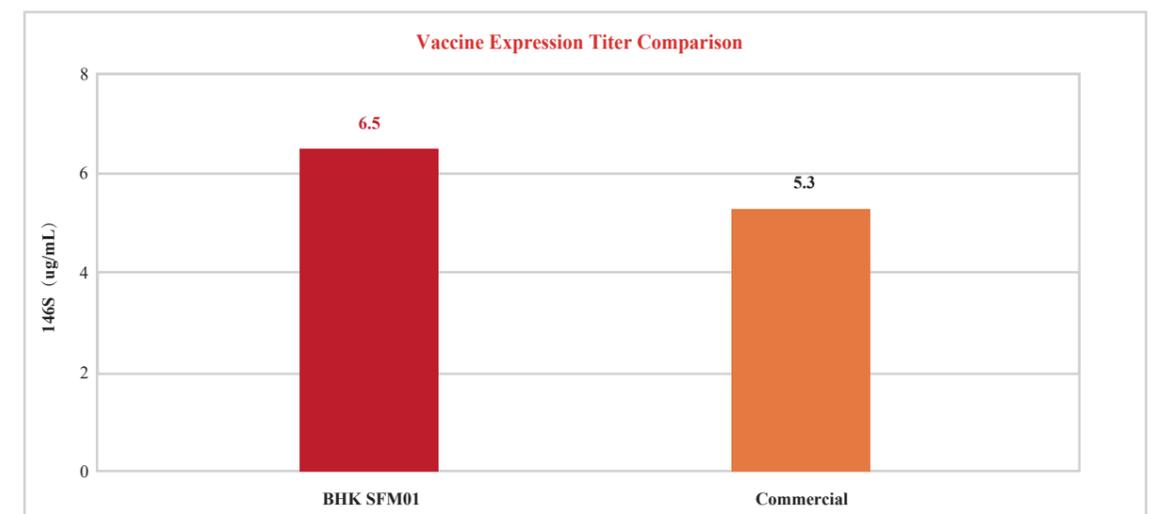
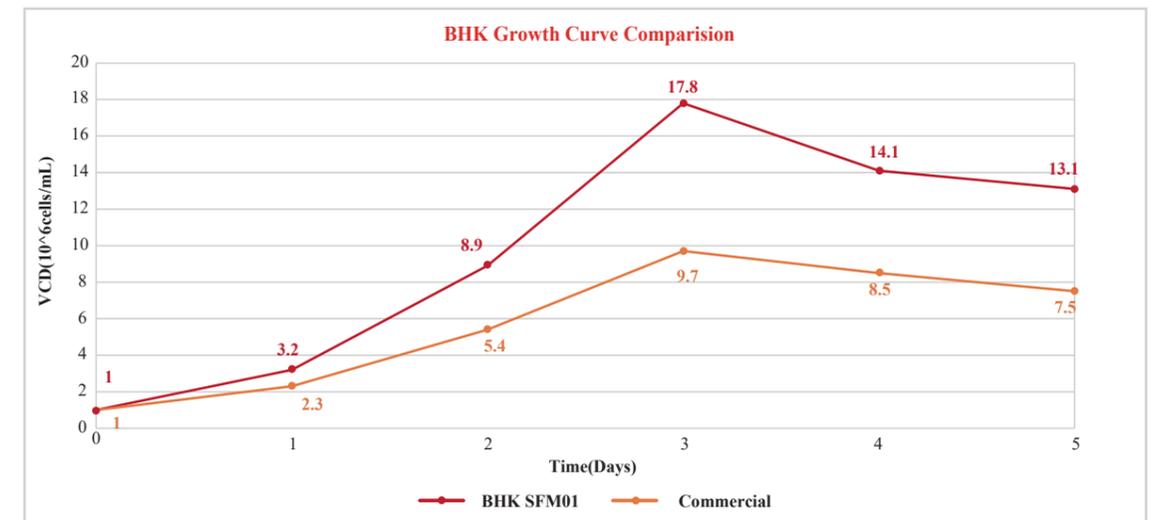
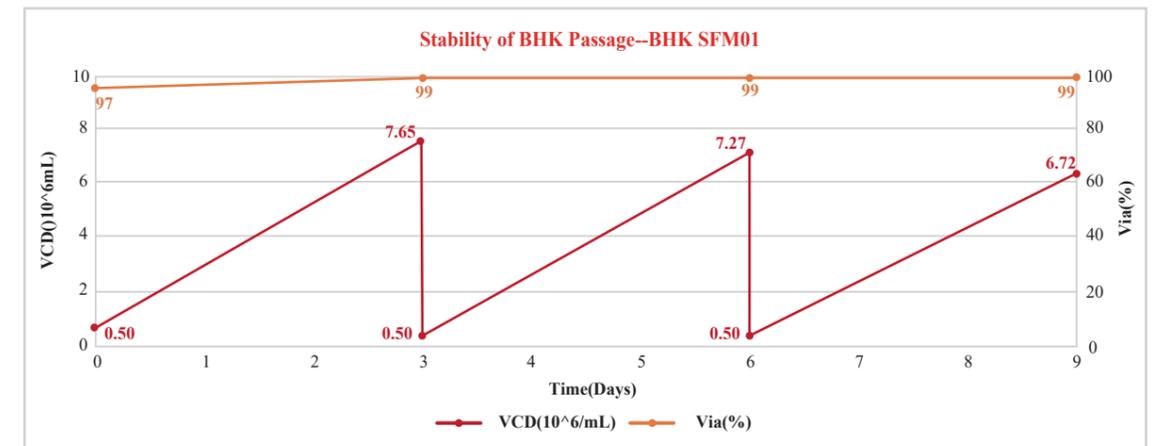
Product Name	Product Model	Feature	Suitable Cell Line & Related Derivatives
BHK SFM01	LQ16, 1000mL(Liquid)	serum-free, animal origin free	BHK, BHK21
	DP16,50L,100L(Dry Powder)		

### Product Advantage

- Component clear, serum free, animal origin-free.
- Suitable for high density culture of BHK cells, adaptable and rich nutrients.
- Suitable for bioreactor large - scale culture, supporting batch, fed-batch and perfusion culture.
- Effectively support final product expression to ensure stable and high titer.
- cGMP production conditions, continuous needle milling production to ensure stable consistency of different batches.

## Application Case

### 1、BHK SFM01



## Hepes MLS(100×)&Stable Gln MLS(100×)

Tofflon Hepes MLS(100×) (N-2-hydroxyethylpiperazine-N-2-ethane sulfonic acid) is a zwitterionic organic chemical buffering agent commonly used in cell culture media. The addition of 10-25 mM Hepes MLS(100×) provides extra buffering capacity when cell culture requires extended periods of manipulation outside of a CO2 incubator. Hepes MLS(100×) is a good buffering choice for many cell culture systems because it is membrane impermeable, has limited effect on biochemical reactions, is chemically and enzymatically stable, and has very low visible and UV light absorbance.

Product Name	Art. No.	Specification
Hepes MLS(100×)	ML201-125	125mL



Tofflon Stable Gln MLS(100×) Supplement is an alternative to L-glutamine, with increased stability that improves cell health. Stable Gln MLS(100×) Supplement is suitable for both adherent and suspension culture of mammalian cells, with no adaptation required. Stable Gln MLS(100×) Supplement is offered as a 200 mM L-alanyl-L-glutamine dipeptide in 0.85% NaCl. Stable Gln MLS(100×) Supplement is also included in a variety of media formulations.

Product Name	Art. No.	Specification
Stable Gln MLS(100×)	ML101-125	125mL



## Hepes MLS(100×)&Stable Gln MLS(100×)

The antibiotics penicillin and streptomycin have effective combined antibacterial effects against gram-positive and gram-negative bacteria and can be used to prevent bacterial contamination of cell cultures. Penicillin was originally purified from the fungus *Penicillium*, and its mechanism of action is to directly interfere with the transformation of bacterial cell walls and indirectly by triggering the release of enzymes that further alter the cell wall. Streptomycin was originally purified from *Streptomyces griseus*. The mechanism of action is that it binds to the 30S subunit of the bacterial ribosome, thus inhibiting protein synthesis and causing the death of sensitive bacteria.

Product Name	Art. No.	Specification
PS MLS	ML301-125	125mL



## Basal Medium



Product Name	Product Model	Feature
MEM	DP01(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ01(Liquid),500mL/1000mL	
DMEM(High Glucose)	DP02(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ02(Liquid),500mL/1000mL	
DMEM(Low Glucose)	DP23(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ23(Liquid),500mL/1000mL	
RPMI1640	DP03(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ03(Liquid),500mL/1000mL	
M199	DP05(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ05(Liquid),500mL/1000mL	
DMEM/F12	DP04(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ04(Liquid),500mL/1000mL	
MEM $\alpha$ , nucleosides	DP36(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ36(Liquid),500mL/1000mL	
Ham' s F-12K	DP38(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ38(Liquid),500mL/1000mL	
IMDM	DP06(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ06(Liquid),500mL/1000mL	
Leibovitz's L-15	DP07(Dry Powder),50L/100L	Supports the growth of a wide range of mammalian cell lines
	LQ07(Liquid),500mL/1000mL	
DPBS	DP12(Dry Powder),50L/100L	N/A
	LQ12(Liquid),500mL/1000mL	