

The User's Manual—Tobitec FA

Basic Information Introduction

Product Introduction

Tobitec FA is chemically-defined (CD) feed media, contains amino acids, vitamins, glucose, inorganic salts and trace elements, without protein, protein hydrolysate, growth factor and any animal-derived components. Tobitec FA is an efficient feeding formula specially designed to improve the growth and product performance of CHO and HEK293 cells, which can meet the nutritional requirements of high-density cell culture and high product expression. Tobitec FA in combination with Tobitec FB or alone can achieve high density stable cell culture and high level expression of recombinant proteins/antibodies and viral products.



Application Scope

Tobitec FA can be applied to the fed batch culture of CHO and HEK293 cells, effectively improving the cell density and product expression. It can be used in the research and further manufacturing of protein/antibody and virus related products, but cannot be directly used in the human body or used as a medication.

Shipping, Storage and Validity Period

Product	Catalog No.	Storage	Shipping	Validity period
Tobitec FA	LQF01-A, Liquid	2°C ~ 8°C, Protect from light	2°C ~ 8°C, Protect from light	6 months
Tobitec FA	DPF01-A, Powder	2°C ~ 8°C, Protect from light	2°C ~ 8°C, Protect from light	24 months

Protocol for Hydration of Powder Medium

1. Fill the mixing container with purified water (20 ~ 30°C) at 70% of the final volume.
2. Slowly add 180.00 g/L of powder medium with gentle stirring. Mix for 30 minutes.
3. Adjust the pH to 6.6 ~ 6.8 using 5M NaOH solution. Mix for more than 30 minutes.
4. Adjust the solution volume to 100% with purified water. Mix for 5 ~ 10 minutes.

5. Filter immediately the media with a 0.22 µm membrane filter.

Quality Index of Powder and Liquid Media

Product Index	Tobitec FA (LQF01-A), Liquid	Tobitec FA (DPF01-A), Powder
Appearance	Red, clear liquid	Off-pink powder
pH	6.6 ~ 7.4	6.6 ~ 7.4 (pre-filter)
Osmolality (mOsmol/kg)	220 ~ 320 (5-fold dilutions)	240 ~ 320 (5-fold dilutions)
Solubility	--	Dissolve well according to the protocol for hydration of powder medium
Endotoxin (EU/mL)	< 3	< 10
Sterility	Negative	--
Bioburden	--	Aerobic bacteria: < 200CFU/g Molds and yeasts: < 50CFU/g

Reference Fed Feeding Strategy

Feeding Strategy of CHO Cell Fed Batch Culture

Application of Tobitec FA in CHO Cell Stable Expression

1. Seed cells at 0.5×10^6 cells/mL into CHO basal media.
2. Starting from day D3, fed feeding according to the following feeding strategy:

Feeds/Time	D3	D5	D7	D9	D11	D13
Tobitec FA / FB	2/0.2%	2/0.2%	2/0.2%	2/0.2%	2/0.2%	2/0.2%
Tobitec FA / FB	3/0.3%	3/0.3%	3/0.3%	3/0.3%	3/0.3%	3/0.3%
Tobitec FA / FB	4/0.4%	4/0.4%	4/0.4%	4/0.4%	4/0.4%	4/0.4%
Glucose	When the glucose concentration is below 4 g/L, glucose is added at the final concentration of 6 g/L					

Suggestions:

It is suggested that the density of viable cells in the first feeding should be $4 \sim 6 \times 10^6$ cells/mL, and the feeding can be advanced or delayed according to the growth of cells.

In order to maintain high cell density and high viability during fed batch culture, it is recommended to lower the culture temperature when the viable cell density exceed 15×10^6 cells/mL.

Application of Tobitec FA in CHO Cell Transient Expression

After CHO cell transient operation, culture cells under specified environmental conditions and fed according to the following feeding strategy:

Feeds/Time	D1	D4	D7
Tobitec FA / FB	2/0.2%	2/0.2%	2/0.2%
Tobitec FA / FB	3/0.3%	3/0.3%	3/0.3%
Tobitec FA / FB	4/0.4%	4/0.4%	4/0.4%
Glucose	When the glucose concentration is below 4 g/L, glucose is added at the final concentration of 6 g/L		
Glutamine	Control glutamine 2 ~ 6 mmol/L after transfection or add 4 mmol/L glutamine according to culture volume during feeding		