Optimization
Makes Differences

OPM-CD TransCHO™

Chemically Defined Cell Culture Medium for Transient Transfection

—— For Biomanufacturing

OPM-CD TransCHO™ is an animal origin-free, chemically defined cell culture medium that contains no proteins, hydrolysates, or components of unknown composition and is developed for the growth of Chinese Hamster Ovary (CHO) cells and transfection in suspension culture. The medium is formulated without hypoxanthine and thymidine for use in dihydrofolate reductase (DHFR)-amplified systems, without L-glutamine for use in glutamine synthetase systems, and without phenol red to minimize estrogen-like effects of phenol red. In conjunction with OPM-CHO ProFeed, higher expression level of the target protein can be achieved.

Application

OPM-CD TransCHO™ is intended for large scale manufacturing of therapeutic biomolecules, as well as for research purposes, but not for human or any therapeutic use.

Storage & Transportation

Store at 2~8℃, dark and dry
Ship at Room temperature (Liquid), Blue ice (Dry powder)

Shelf Life

OPM-CD TransCHO™ Medium Liquid: 12 months

OPM-CD TransCHO™ Dry Powder: 24 months

Reconstitution Method for Dry Powder

1. Measure out 90% of final required volume of purified water intended for cell culture use, e.g. WFI. Recommended water temperature is 25~35°C (minimum final volume ≧ 1L) .

2. Slowly add dry powder medium at 19.83 g/L while stirring, and continue mixing for 10 minutes. Residual powder attached to the vessel wall zshould be taken into the solution.

3. Adjust pH to 6.0 with 5N NaOH and stir for 20 minutes.

4. Add 2.22 g/L NaHCO3 to the solution, and continue to stir for 10 minutes.

5. Adjust pH to 7.0 with 5N NaOH and stir for 20 minutes.

6. Adjust osmolality to 285±15 mOsm/kg using NaCl (Calculate osmolality： required NaCl(g)= final solution volume(L)×(285 – measured value) / 31.5).

7. Continue to stir for 10 minutes. Sterile filter using a membrane filter with a pore size of 0.22 micron.

Quality Specifications

Specifications	OPM-CD TransCHO™ Medium	OPM-CD TransCHO™ DPM
Appearance	Orange red clear liquid	Off -white or light yellow powder
pH	7.0~7.5	7.0~7.5
Osmolality (mOsm/kg)	270~300	270~300
Solubility	——	Good by following the reconstitution instructions
Endotoxin (EU/mL)	＜1.0	＜1.0
Sterility test	Negative	——

Cell Culture Conditions

37℃，80% humidity，5~8%CO_2

Shaker speed 110–150 rpm (amplitude: 50mm).

Cell Recovery

1. Incubate the original medium and OPM-CD TransCHO™ medium at 37 °C, and add 6 mM L-glutamine before use.

2. Recover cells according to the original medium method.

Cell Culture Passaging

1. Incubate the original medium and OPM-CD TransCHO™ medium at 37 °C, and add 6 mM L-glutamine before use.

2. Passage cells every 2~3 days to keep cells in the early-log phase.

3. Seed cells at a density of (0.3~0.6)×10^6 cells/ml.

4. Cells should be passaged if VCD = (3~4)×10^6/mL & viability ≥95% (2-4 days).

Note: It is critical to keep the seed cells in the log phase, and different types of CHO cells may have different log phase ranges.

5. Repeat the above steps to preserve cells or expand cells for transfection and expression.

Medium Adaptation

It is critical that cell viability be ≥95% and the growth rate be in mid-logarithmic phase prior to initiating adaptation procedures.

Direct Medium adaptation

In most cases, CHO cells in other media can directly adapt to OPM-CD TransCHO™ medium following the previous daily subculture protocol.

Sequential Medium adaptation

If suboptimal performance is achieved using the direct adaptation method, use the sequential adaptation method. Incubate the original medium and OPM-CD TransCHO™ medium at 37 °C, and add 6 mM L-glutamine before use. Some key points are recommended as followings,

1) Select the cells at lower generation and ensure the cells in the logarithmic phase.

2) Resuscitate cells using the original medium, and continue to use the original medium to subculture 2-3 generations to achieve stable cell growth.

3) When the cell density reached 3~4 x10^6 cells/ml, the cells were inoculated with 0.6 x10^6 cells/ml into the medium containing 1/3 volume of OPM-CD TransCHO™ and 2/3 volume of original medium.

4) When the cell density reached 3x10^6 cells/ml and the cell viability is greater than 95% (3-4 days), the cells were inoculated with 0.5x10^6 cells/ml into the medium containing 2/3 volume of OPM-CD TransCHO and 1/3 volume of original medium.

5) When the cell density reached 3x10^6 cells/ml and the cell viability was greater than 95% (3-4 days), the cells were inoculated into 100% OPM-CD TransCHO™ medium with 0.4x10^6 cells/ml.

6) The cells were inoculated in OPM-CD TransCHO™ medium at a density of 0.3x10^6 cells/ml, and continue to subculture 2-3 generations to achieve stable cell growth.

Recommended transfection conditions

Transfection conditions need to be optimized according to specific cell line/protein molecule. The following conditions are only for reference,

VCD	(5~ 6)x10^6 cells/ml, cell viability> 95%
DNA	(~1)mg/L
PEI	5~8mg / L

Recommended feeding strategy

Protein production may be enhanced by adding feed OPM-CHO ProFeed.
The recommended feeding strategy is as below,

Basal medium	Cell recovery after transfection	Feed strategy	
OPM-CD TransCHO™	Cells recover well (Doubling time of cells after transfection is not changed significantly, and the viability is greater than 90%)	OPM-CHO ProFeed	Add 4%, 5%, 6%, 5%, 4% and 4% of the initial culture volume of OPM-CHO ProFeed, at D1, D3, D5, D7, D9 and D11 respectively after transfection; When glucose is ≤ 3g / L, add glucose concentrate at 6g/L final concentration
	Cells recover not well (Doubling time of cells after transfection is prolonged significantly, or the viability is lower than 90%	OPM-CHO ProFeed	Observe and determine the feed starting point according to cell recovery

Order Information

Cell Culture Media

Name	Cat No.	Type	Volume
OPM-CD TransCHO™	P83059	Liquid	1000ml
OPM-CD TransCHO™ DPM	P93059	Dry powder	10L/50L/100L

High Performance Feeds

Name	Cat No.	Type	Volume
OPM-CHO ProFeed	P81279	Liquid	1000mL

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