EIV12023E

ExCell Bio

OptiVitro® CHO CE01 Basal Medium SF

For Research and Manufacturing Use
Not Intended for Diagnostic and Therapeutic Use

User Manual

Catalog Number CE000-N031
CE000-N032
CE000-N033
CE000-N034
CE000-N035

Product description

OptiVitro® CHO CE01 Basal Medium SF is a state-of-the-art, animal-free, protein-free, and chemically-defined medium that is specifically designed for the high-density culture of CHO-K1, CHO-DG44, and CHO-S etc., cells. It is an ideal medium for achieving high-level expression of recombinant proteins, while eliminating concerns over potential contamination from animal-derived components.

Product	Catalog no.	Amount	Storage	Shelf life
OptiVitro® CHO CE01 Basal Medium SF	CE000-N031	500 mL Liquid	2°C to 8°C; Store dark	12 months
	CE000-N032	1 L Liquid		
	CE000-N033	1 L Powder	2°C to 8°C; Store dark and dry	24 months
	CE000-N034	10 L Powder		
	CE000-N035	100 L Powder		

Culture conditions

Suggested culture condition, Temperature:37°C, RH:80%, CO2:5%, 120-150rpm.

Medium preparation

1. Measure 80% of the final volume WFI or distilled water in a clean vessel.
2. Add 22.15g/L OptiVitro® CHO CE01 Basal Medium SF powder slowly to the water, mix for 30 minutes.
3. Adjust the pH to 8.5 with 5 N NaOH solution. After adjusting, continue stirring for an additional 10 minutes.
4. Adjust the pH to 7.0 with 6 N HCl solution. After adjusting, continue stirring for an additional 5 minutes.
5. Add 2.317g/L $NaHCO_3$ and mix for 10 minutes.
6. QS to final production volume and mix for 5 minutes.
7. Measure and record the pH and osmolality.
8. Sterilize immediately by membrane filtration (< 0.22 microns), and store at 2 to 8°C in the dark until use.

Adaptation of cells

OptiVitro® CHO CE01 Basal Medium SF is a highly versatile medium that can be seamlessly integrated into most stable cell lines. We recommend direct adaptation of CHO cells to OptiVitro® CHO CE01 Basal Medium SF, as this can often be achieved without the need for a stepwise adaptation process. In cases where direct adaptation is unsuccessful, sequential adaptation is suggested.

It's important to note that some serum-free media (SFM) may contain hydrolysates or growth factors, which can cause cells cultured in such media to become dependent on these additives. Therefore, when transitioning from SFM to a chemically-defined (CD) culture medium like OptiVitro® CHO CE01 Basal Medium SF, certain cell

lines may require adaptation to ensure optimal growth and performance. Our technical experts are available to provide guidance on the adaptation process for your specific cell line..

Direct adaptation

1. Recover cells: Recover cells using the original medium (15-30 mL culture volume in a 125 mL shake flask). Subculture cells until consistent growth is achieved (approximately 3 passages). It is crucial that cell viability is at least 90% throughout the process.
2. Replacement medium: Transfer cells into 100% OptiVitro® CHO CE01 Basal Medium SF at a seeding density of $0.3 \times 10^6 – 0.8 \times 10^6$ viable cells/mL. Incubate at 37°C in a humidified atmosphere of 5% CO_2 in air on an orbital shaker platform rotating at 120–140 rpm (30-40 mL culture volume in a 125 mL shake flask). Adjust according to your existing culture method.

Sequential adaptation

1. Recover cells: Recover cells using the original medium (15-30 mL culture volume in a 125 mL shake flask). Subculture cells until consistent growth is achieved (approximately 3 passages). It is crucial that cell viability is at least 90% throughout the process.
2. Replacement medium: At each subsequent passage, dilute cells with stepwise increasing ratios of OptiVitro® CHO CE01 Basal Medium SF and the original medium (e.g. 50:50, 75:25, 90:10, 95:5, 100:0). At least 2 passages at each step are recommended to ensure that cells appropriately adjust to the new medium.
3. Culture optimization: Monitor cell growth and viability throughout the adaptation process. Adjust the ratios of the old and new media as needed to optimize cell growth and viability.

Please note that the proportion of new and old culture medium should be adjusted appropriately based on your specific cell line and culture conditions. Sequential adaptation may require more time and effort than direct adaptation, but it can be an effective method for ensuring successful transition to OptiVitro® CHO CE01 Basal Medium SF. Our technical experts are available to provide guidance on the adaptation process for your specific cell line.

Cryopreservation

1. Prepare the desired quantity of cells, harvesting them in mid-log phase of growth with >90% viability.
2. Prepare the required volume of cryopreservation medium consisting of 90% OptiVitro® CHO CE01 Basal Medium SF and 10% dimethyl sulfoxide (DMSO) freshly prepared.
3. Harvest cells by centrifugation at 1,200 rpm for 5 minutes.
4. Resuspend the pellet in the pre-determined volume of cold cryopreservation medium (suggested cell density: $1\text{-}2\times10^7$ viable cells/mL).
5. Freeze the cells in a controlled rate freezing apparatus following standard procedures.
6. For long-term storage, transfer the vials to a liquid nitrogen tank (vapor phase).