EIV22025E

ExCell Bio

OptiVitro® CHO Serum-free Basal Medium CE02

For Research and Manufacturing Use

Not Intended for Diagnostic and Therapeutic Use

User Manual

Catalog Number	CE000-N041
	CE000-N042
	CE000-N043
	CE000-N044
	CE000-N045

PRODUCT DESCRIPTION

OptiVitro® CHO Serum-free Basal Medium CE02 is a state-of-the-art, animal component-free and chemically-defined medium that is specifically designed for the high-density culture of CHO-K1, CHOZN, and CHO-S etc. It is an ideal medium for achieving high-level expression of recombinant proteins, while eliminating concerns over potential contamination from animal-derived components.

SPECIFICATION, STORAGE AND TRANSPORTATION REQUIREMENT

Product Name	Cat.#	Specification	Storage	Transportation	Shelf Life
OptiVitro® CHO Serum-free Basal Medium CE02	CE000-N041	500 mL Liquid	2-8℃ Protect From Light.	< 25℃ Protect From Light.	12 months
	CE000-N042	1000 mL Liquid			
OptiVitro® CHO Serum-free Basal Medium CE02(Powder)	CE000-N043	1 L Powder	2-8℃ Dark and dry.	< 10℃ Protect From Light.	24 months
	CE000-N044	10 L Powder			
	CE000-N045	100 L Powder			

HANDLING RECOMMENDATIONS

1. Please make sure to store the cell culture medium in a light-protected environment, avoid fluorescent lamps or other lamplight exposure, and better to use colored packaging bags in the refrigerator or warehouse.
2. During the transportation of the product, it should be kept away from light. This is to prevent the product from being affected by the irradiation of fluorescent lamps or other light sources, which may lead to discoloration.
3. During the transportation of the product to the clean area, it is essential to carry out a cleaning process. The cleaning method may involve disinfectant wiping, and not utilize UV irradiation.

Note: *When passing through transfer windows equipped with UV lamp, remember to proactively turn off the UV lamp inside the transfer window.*

INSTRUCTION FOR USE

Medium preparation

1. Measure 80% of final required volume of WFI or cell culture grade water in a clean vessel.
2. Add 23.24g/L OptiVitro® CHO Serum-free Basal Medium CE02 powder slowly to the water, mix for 30 minutes.
3. Add 2.2g/L $NaHCO_3$ and mix for 10-15 minutes.
4. QS to final production volume and mix for 5 minutes.
5. Measure and record the final pH and osmolality. pH should be 6.90 to 7.50. Osmolality should be 280 to 310 mOsm/kg.
6. Sterilize immediately by 0.22μm membrane filtration. Store the reconstituted medium protected from light at 2°C to 8°C until use.

Culture conditions

Suggested culture condition, Temperature:37℃, RH:80%, CO_2:5%, 120 rpm.

Adaptation of cells

OptiVitro® CHO Serum-free Basal Medium CE02 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 Serum-free Basal Medium CE02, 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 Serum-free Basal Medium CE02, certain cell lines may require adaptation to ensure optimal growth and performance.

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 Serum-free Basal Medium CE02 at a seeding density of 0.3-0.8×10^6 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 rpm (15-30 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 Serum-free Basal Medium CE02 and the original medium (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.

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 92% OptiVitro® CHO Serum-free Basal Medium CE02 and 8% 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: 1.0-2.0×10^7 viable cells/mL).
5. Freeze the cells in a controlled rate freezing apparatus following standard procedures. For long-term storage, transfer the vials to a liquid nitrogen tank (vapor phase).

Note: *To achieve better cell culture performance, it is recommended to use in combination our company's OptiVitro® CHO Serum-free Feed Medium CA02α (CA000-N042) and OptiVitro® CHO Serum-free Feed Medium CA01β (CA000-N021).*

DISCLAIMER

1. Use the product according to the manual instructions. Deviations from these instructions are at the user's risk, and our company will not be responsible for any resulting product performance deviations.
2. This product is for scientific research and commercial production only and is not intended for clinical diagnosis or treatment. Users assume all risks for unauthorized use, and our company shall not be responsible for any consequences.