ExCell

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ExCell Bio

OptiVitro® T Cell Serum-free Medium

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

User Manual

Catalog Number TE000-N022
TE000-N021
TE000-N021S

Product description

OptiVitro® T Cell Serum-free Medium is a serum-free, xeno-free medium that has been specifically designed to expand human T lymphocytes *in vitro*. The medium consists of two components: OptiVitro® T Cell Basal SF Medium and OptiVitro® T Cell SF Medium Supplement, both of which are sterile and manufactured in compliance with GMP regulations. The product is free of cytokines and antibiotics.

Contents and storage

Catalog No.	Product name	Amount	Storage	Shelf life[1]
TE000-N022	**OptiVitro® T Cell Serum-free Medium**	**1 kit**	-	-
BA0032	OptiVitro® T Cell Basal SF Medium	1000 mL	2-8 ℃ Protect from light	12 months
BA0052	OptiVitro® T Cell SF Medium Supplement	8 mL	2-8 ℃ Protect from light	18 months
TE000-N021	**OptiVitro® T Cell Serum-free Medium**	**1 kit**	-	-
BA0031	OptiVitro® T Cell Basal SF Medium	500 mL	2-8 ℃ Protect from light	12 months
BA0051	OptiVitro® T Cell SF Medium Supplement	4 mL	2-8 ℃ Protect from light	18 months
TE000-N021S	**OptiVitro® T Cell Serum-free Medium (Sample)**	**1 kit**	-	-
BA0031S	OptiVitro® T Cell Basal SF Medium (Sample)	100 mL	2-8 ℃ Protect from light	12 months
BA0051S	OptiVitro® T Cell SF Medium Supplement (Sample)	0.8 mL	2-8 ℃ Protect from light	18 months

[1] The Shelf-Life may be extended after strict validation by QC.

Instructions for use

Prepare media

1. Place OptiVitro® T Cell Basal SF Medium and OptiVitro® T Cell SF Medium Supplement in a sterile laminar flow hood.
2. Add 4 mL of OptiVitro® T Cell SF Medium Supplement to 500 mL of OptiVitro® T Cell Basal SF Medium, or 8 mL of OptiVitro® T Cell SF Medium Supplement to 1000 mL of OptiVitro® T Cell Basal SF Medium.
3. Tighten the cap and mix the OptiVitro® T Cell Basal SF Medium thoroughly.
4. The complete OptiVitro® T Cell Basal SF Medium can be supplemented with cytokines like IL-2, IL-7, or IL-15 to support T-cell expansion.

Note： It is recommended to use complete OptiVitro® T Cell Serum-free Medium within four weeks after mixed.

Culture T-cells from PBMCs

1. Prepare fresh peripheral blood mononuclear cells (PBMCs) according to standard separation protocols, or rapidly thaw (<1 minute) frozen vials of PBMC cells in a 37°C water bath.
2. If using freshly prepared PBMCs, they can be directly used after washing with sterile DPBS. For frozen cells, it is recommended to thaw them one day prior to T-cell activation, and incubate them in complete OptiVitro® T Cell Serum-free Medium without extra cytokines at a concentration of approximately 2×10^6 cells/mL, in a humidified 37℃ incubator with an atmosphere of 5% CO_2 for 16-24 hours.
3. Centrifuge the cells at 400×g for 10 minutes and remove the supernatant.
4. Before use, equilibrate complete OptiVitro® T Cell Serum-free Medium to room temperature. Resuspend PBMCs at a concentration of 0.5-1×10^6 cells/mL in complete OptiVitro® T Cell Serum-free Medium supplemented with cytokines such as IL-2, IL-7, or IL-15.
5. Transfer the cells to culture plates that are pre-coated with anti-human CD3/CD28 antibodies for activating T-cells to initiate the culture, or use commercially available beads according to the manufacturer's protocol.
6. Incubate the cells in a humidified 37℃ incubator with an atmosphere of 5% CO_2.
7. Feed and adjust the cell concentration to 0.5-1×10^6 cells/mL with complete OptiVitro® T Cell Serum-free Medium supplemented with cytokines every 2-3 days. The cells can be transferred to bioreactors for further expansion at around Day 7 after T-cell activation.