

ImmunoCult™-XF

cGMP, serum-free, and xeno-free medium for the expansion of human T cells

Catalog #100-0956

500 mL



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Product Description

ImmunoCult™-XF is a serum-free and xeno-free medium optimized for the in vitro culture and expansion of human T cells isolated from peripheral blood. Recombinant cytokines, required for the optimal growth and expansion of T cells, have not been added to ImmunoCult™-XF. This allows users the flexibility to prepare a medium that meets their requirements.

- No need to supplement the medium with serum
- Supports robust T cell expansion with high viability after 10 - 12 days of culture
- Expanded T cells are able to produce effector molecules including interferon-gamma (IFN- γ) and tumor necrosis factor-alpha (TNF- α) upon appropriate restimulation
- Use with ImmunoCult™ Human CD3/CD28/CD2 T Cell Activator (Catalog #100-0785) or ImmunoCult™ Human CD3/CD28 T Cell Activator (Catalog #100-0784) for bead-free activation of T cells

Properties

Storage: Store at 2 - 8°C. Do not freeze. Protect from light.

Shelf Life: Stable until expiry date (EXP) on label.

This product contains material derived from human plasma manufactured under cGMP regulations. Donors have been tested and found negative for HIV-1 and -2, hepatitis B, and hepatitis C prior to donation. However, this product should be considered potentially infectious and treated in accordance with universal handling precautions.

Directions for Use

The following protocol is for the expansion of activated human T cells using ImmunoCult™-XF. Depending on the experimental objectives, the protocol may need to be optimized (e.g. cell seeding density, culture duration, or choice of cytokine selection).

1. Isolate human T cells from fresh or frozen peripheral blood mononuclear cells, or leukapheresis samples, using one of the following EasySep™ kits:
 - EasySep™ Release Human CD3 Positive Selection Kit (Catalog #17751)
 - EasySep™ Human T Cell Enrichment Kit (Catalog #19051)
 - EasySep™ Human T Cell Isolation Kit (Catalog #17951)

NOTE: Isolated T cells can be cryopreserved using CryoStor® CS5 (Catalog #07933) or CryoStor® CS10 (Catalog #07930) and stored at -135°C.
2. Day 0:
 - a. Prepare fresh complete ImmunoCult™-XF as follows:

Add cytokines (e.g. Human Recombinant IL-2; Catalog #78036/78145) to ImmunoCult™-XF. Mix thoroughly.

NOTE: Complete ImmunoCult™-XF must be prepared fresh on each day of use.
 - b. Seed viable human T cells (prepared in step 1) in fresh complete ImmunoCult™-XF (as prepared in step 2a) at 1×10^6 cells/mL.
3. To activate T cells, add 25 μ L/mL of ImmunoCult™ Human CD3/CD28/CD2 T Cell Activator or ImmunoCult™ Human CD3/CD28 T Cell Activator to the cell suspension. Incubate cells at 37°C and 5% CO₂ for 3 days.
4. Day 3: Mix the cell suspension thoroughly and perform a viable cell count. Adjust the viable cell density to $\sim 1 - 2.5 \times 10^5$ cells/mL by adding fresh complete ImmunoCult™-XF. Incubate at 37°C and 5% CO₂ for 2 days.
5. Day 5: Mix the cell suspension thoroughly and perform a viable cell count. Adjust the viable cell density to $\sim 1 - 3 \times 10^5$ cells/mL by adding fresh complete ImmunoCult™-XF. Incubate at 37°C and 5% CO₂ for 2 days.
6. Day 7: Mix the cell suspension thoroughly and perform a viable cell count. Adjust the viable cell density to $\sim 3 - 6 \times 10^5$ cells/mL by adding fresh complete ImmunoCult™-XF. Incubate at 37°C and 5% CO₂ for 3 days.

7. Day 10: Harvest cells if the desired cell number is achieved.

OPTIONAL: Perform a viable cell count and maintain cell density at $0.5 - 1 \times 10^6$ cells/mL by adding fresh complete ImmunoCult™-XF. Incubate at 37°C and 5% CO₂ for 2 days, then harvest cells.

Notes and Tips

- ImmunoCult™-XF can also promote T cell expansion **with cell concentrations > 5×10^5 cells/mL** on days 3, 5, 7 and/or 10. Further protocol optimization may be required.
- ImmunoCult™-XF can be supplemented with human IL-7 (e.g. Catalog #78053) and/or human IL-15 (e.g. Catalog #78031).
- For longer-term expansion (> 12 days) of human T cells, we suggest:
 - a. On Day 7, harvest and resuspend the expanded T cells at 1×10^6 cells/mL in fresh complete ImmunoCult™-XF.
 - b. Restimulate by adding 25 µL/mL of ImmunoCult™ Human CD3/CD28/CD2 T Cell Activator or ImmunoCult™ Human CD3/CD28 T Cell Activator.
 - c. Incubate at 37°C and 5% CO₂. Every 2 - 3 days, adjust cell density by adding fresh complete ImmunoCult™-XF.
- To maintain a healthy culture when using conventional culture vessels, ensure that fresh complete medium is added every 2 - 3 days. Do not exceed a 3-day interval between medium additions.

Related Products

For related products, including specialized culture and storage media, supplements, antibodies, cytokines, and small molecules, visit www.stemcell.com/TCellEngineering, or contact us at techsupport@stemcell.com.

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