

AIM-V[®] Medium CTS[™]

Therapeutic Grade serum free cell expansion medium

GIBCO[®] AIM-V Medium CTS[™] (Therapeutic Grade) is the first commercially available defined, serum-free formulation for proliferation and/or manipulation of T-cells and dendritic cells and manufactured in compliance with cGMP. AIM-V Medium CTS[™] is an FDA 510(k) cleared device which is intended for human ex-vivo tissue & cell culture processing applications.

Description	Cat. No.	Size
AIM-V [®] Medium CTS [™] , Liquid	0870112DK	1000mL
AIM-V [®] Medium CTS [™] , Liquid	0870112BK	10L (Bag)

Intended Use

For human ex-vivo tissue & cell culture processing applications.
CAUTION: When used as a medical device, Federal Law restricts this device to sale by or on the order of a physician.

Storage

Store medium at 2 to 8°C. Protect from light.

Shelf Life

14 months

Culture Procedure:

The procedure below serves as a general guideline for static T-cell and dendritic cell culture, regardless of vessel. For high-density culture in bioreactors, optimal procedures should be determined empirically by the investigator.

T Cells Culture:

1. Prepare fresh peripheral blood mononuclear cells (PBMCs) or rapidly thaw (< 1 minute) frozen vials of PBMCs cells in a 37°C water bath according to standard PBMC thawing protocols.
2. Wash cells with DPBS CTS[™] without calcium and magnesium (Cat. No A12856), with 2-5% heat-inactivated human pooled Type AB serum according to the applications, if desired or required.
3. Count cells using either electronic (i.e. Coulter Counter, Vi-Cell) or manual (i.e. hemocytometer) methods.
4. Centrifuge cells and remove wash buffer.
5. Resuspend PBMC at roughly 0.5-1x10⁶ CD3+ T cells/mL in medium supplemented with cytokines (e.g. IL-2), if used at culture initiation. Transfer the desired number of cells to the desired tissue culture vessel. A variety of protocols may be used for activating T-cells for subsequent expansion, including adding stimulatory antibodies or antigen presenting cells. Similarly, for either small or the large scale T-cell expansion, cells can be isolated, activated and expanded with Dynabeads[®] ClinExVivo[™] CD3/CD28 or Dynabeads[®] CD3/CD28 CTS[™] (Cat. No. 402-03D) according to instructions in the product insert.

6. Incubate the culture vessel at 37°C in a humidified atmosphere with 5% CO₂. Feed and maintain cells at desired concentrations while cells are in log phase growth. To maintain log phase growth, it may be preferable to split cells to achieve a density of 0.5-1x10⁶ cells/mL whenever cell density gets above 1x10⁶ cells/mL (e.g. 2x10⁶ cells/mL, split 1:4 to continue culture at 0.5x10⁶ cells/mL). For optimal gas exchange in static plate cultures it is recommended that medium depth not exceed 1 to 1.2cm.

Monocyte Derived Dendritic Cell Culture:

1. Prepare fresh peripheral blood mononuclear cells (PBMCs).
2. Plate PBMC in culture flask with 25 mL RPMI 1640 (Cat. No 72400) or AIM-V[®] Medium CTS[™] (Therapeutic Grade).
3. Incubate for 2 to 3 hours at 36 to 38°C in a humidified atmosphere of 5% CO₂ in air.
4. Discard medium containing non-adherent cells.
5. Wash the adherent cells (mainly CD14+ monocytes) three times with DPBS without calcium and magnesium (Cat. No A12856).
6. Add medium containing 50 to 100 ng/mL recombinant human IL-4 (Cat. No. CTP0043 1mg or Cat. No. CTP0041 100ug) and 50 ng/mL recombinant human GM-CSF (Cat. No. CTP2011 100ug or Cat. No. CTP2013 1mg). Cell density should be between 1 to 3x10⁵ cells/mL.
7. Incubate cells at 36 to 38°C in a humidified atmosphere of 5% CO₂ in air for 5 days. It is recommended to replace medium once after 3 days with fresh medium containing IL-4 and GM-CSF. Save all non-adherent or loosely adherent cells by centrifuging the removed culture medium 10 minutes at 200xg and adding the pellet to the fresh culture medium.
8. After 6 days, the loosely adherent or non-adherent cells should display typical dendritic cell morphology and surface markers (CD1a, CD80, CD86, and HLA-DR).
9. The maturation of dendritic cells is induced by the addition of either 1 µg/mL LPS or 50µl/mL TNF-α (cat. No. CTP3013 1mg or Cat. No. CTP3011 100ug) to the medium.

Note: Alternatively to plastic adherence, monocytes can also be isolated by magnetic separation.

Related Products

Dulbecco's Phosphate Buffered Saline CTS™ (DPBS) without calcium, magnesium (1X), liquid (A12856)

L-Glutamine-200mM (100X), liquid (25030)

Dynabeads® ClinExVivo™ CD3/CD28 or Dynabeads® CD3/CD28 CTS™ (402-03D)

DynaMag™ CTS™ (121-02)

IL-2 CTS™ REC HU (CTP0021 100ug or CTP0023 1mg)

IL-7 CTS™ REC HU (CTP0071 100ug or CTP0073 1mg)

IL-4 CTS™ REC HU (CTP0041 100ug or CTP0043 1mg)

GM-CSF CTS™ REC HU (CTP2011 100ug or CTP2013 1mg)

TNF-α CTS™ (CTP3011 100ug or CTP3013 1mg)

Technical Support

For additional product and technical information, such as Material Safety Data Sheets (MSDS), Certificate of Analysis, etc, please visit our website at <http://www.invitrogen.com/celltherapysupport/>. For further assistance, please email our Technical Support team at celltherapysupport@lifetech.com

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