PRIME-XV®
T CELL CDM

Chemically-defined, animal component-free medium for T cell culture

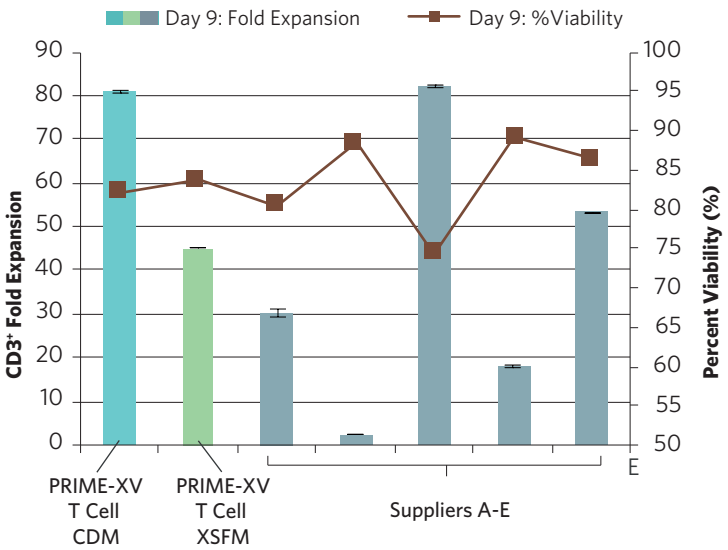
Scalable formula for use in plates, bags and bioreactors

Chemically-defined, animal component-free formula delivers optimal performance

- **Optimized to support vigorous growth while maintaining functionality**
- **Provides lot-to-lot consistency**
- **Removes the effects undefined components have on T cell phenotypes**
- **Supports polarization to targeted T cell types such as Th_1 and T regulatory cells**

PRIME-XV® T Cell CDM is the first commercially available chemically-defined, animal component-free medium for the expansion and cultivation of T cells of human origin. The formulation is optimized to deliver consistently vigorous growth while maintaining T cell functionality and potency.

High viability and expansion rates compared to non chemically-defined alternatives



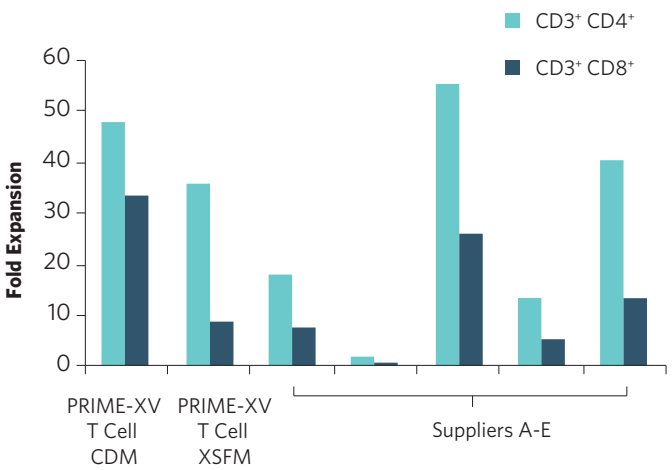


Figure 1. CD3⁺ T cells derived from human peripheral blood mononuclear cells, were activated and cultured on treated polystyrene plates in PRIME-XV T Cell CDM or commercially-available xeno-free expansion media supplemented with IL-2. After 9 days, the viability and fold expansion of CD3⁺ T cells were quantified.

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Scalable formula achieves excellent growth in multiple platforms

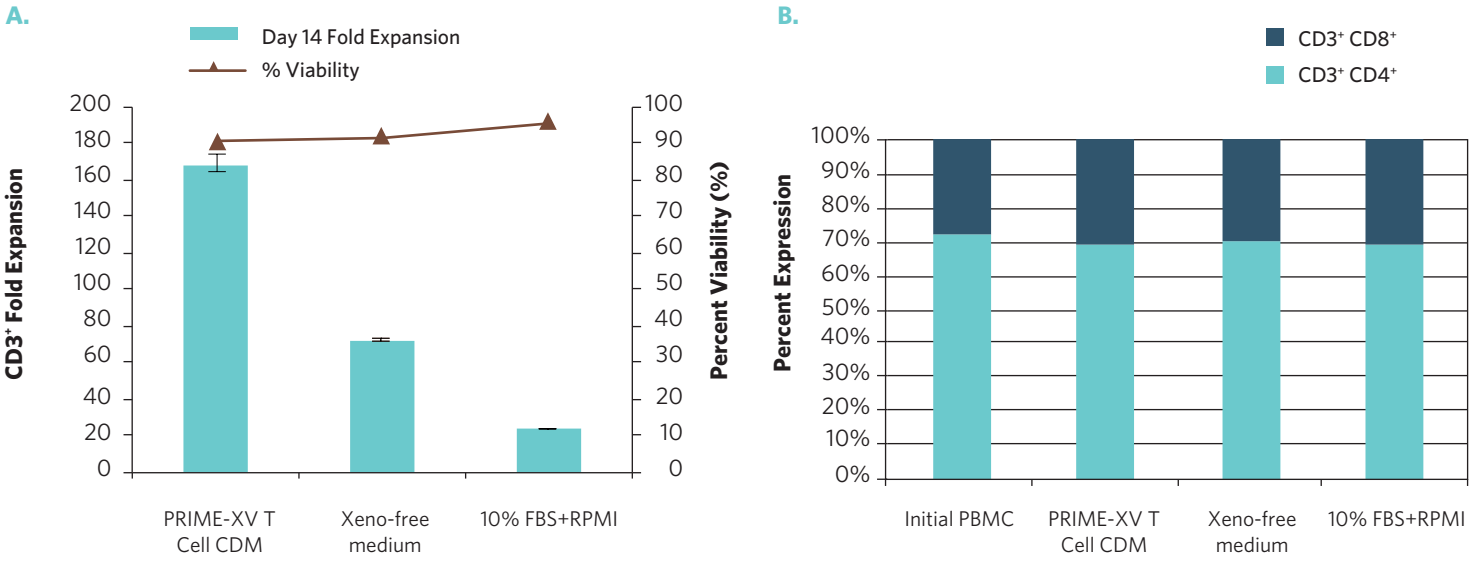

Figure 2. PRIME-XV T Cell CDM outperformed alternatives in the G-Rex® cell culture device. $CD3^+$ T cells derived from human peripheral blood mononuclear cells (PBMC), were activated with soluble anti-human CD3 and anti-human CD28 antibodies. After 14 days of culture in various media supplemented with IL-2, cells were harvested and analyzed for viability and fold expansion (A); flow cytometry analysis was performed to demonstrate the ratios of $CD3^+CD4^+$/$CD3^+CD8^+$ cells to the initial PBMC population (B).

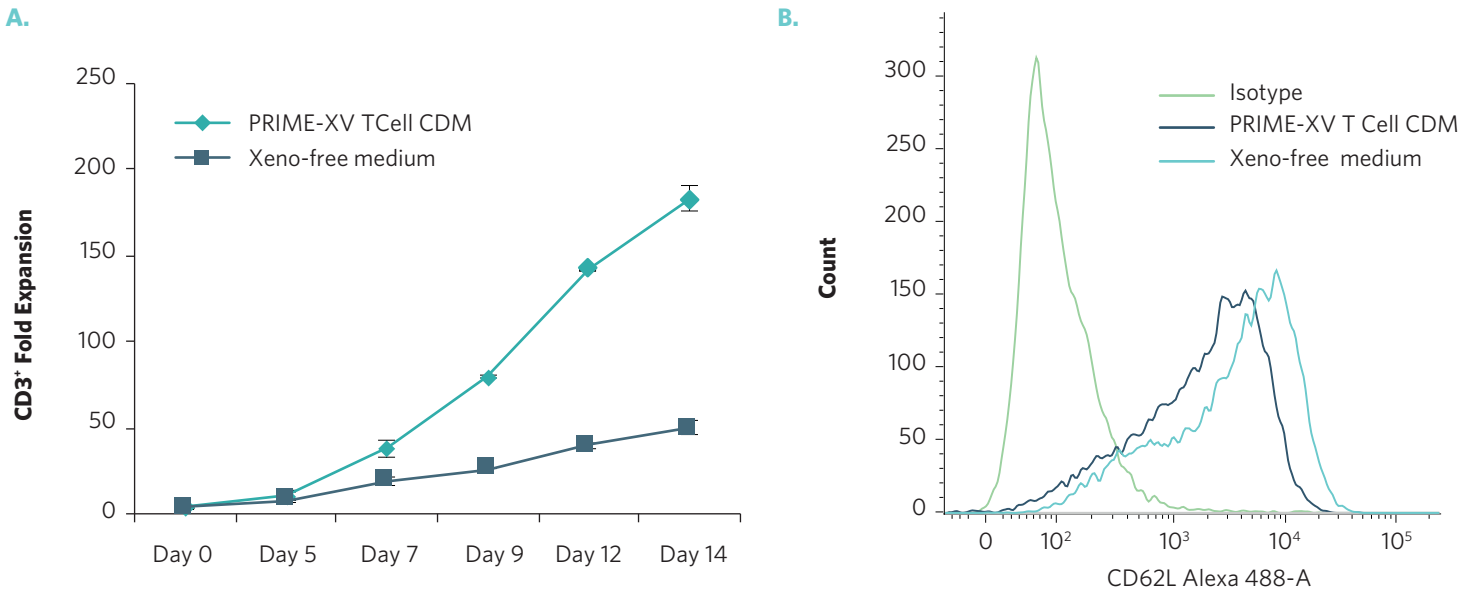

Figure 3. PRIME-XV T Cell CDM outperformed xeno-free medium in cell culture bags. Gas-permeable cell culture bags were coated with anti-human CD3 antibody at 2-8 °C overnight. Media supplemented with IL-2 at 200 IU/mL were added with human peripheral blood mononuclear cells (PBMCs) and cultured for 14 days. Fold expansion of $CD3^+$ T cells was quantified on days 5, 7, 9, 12, and 14 (A). Flow cytometry analysis was performed on day 14 to demonstrate the expression of CD62L(B).

Formulated to support polarization to targeted T cell subsets

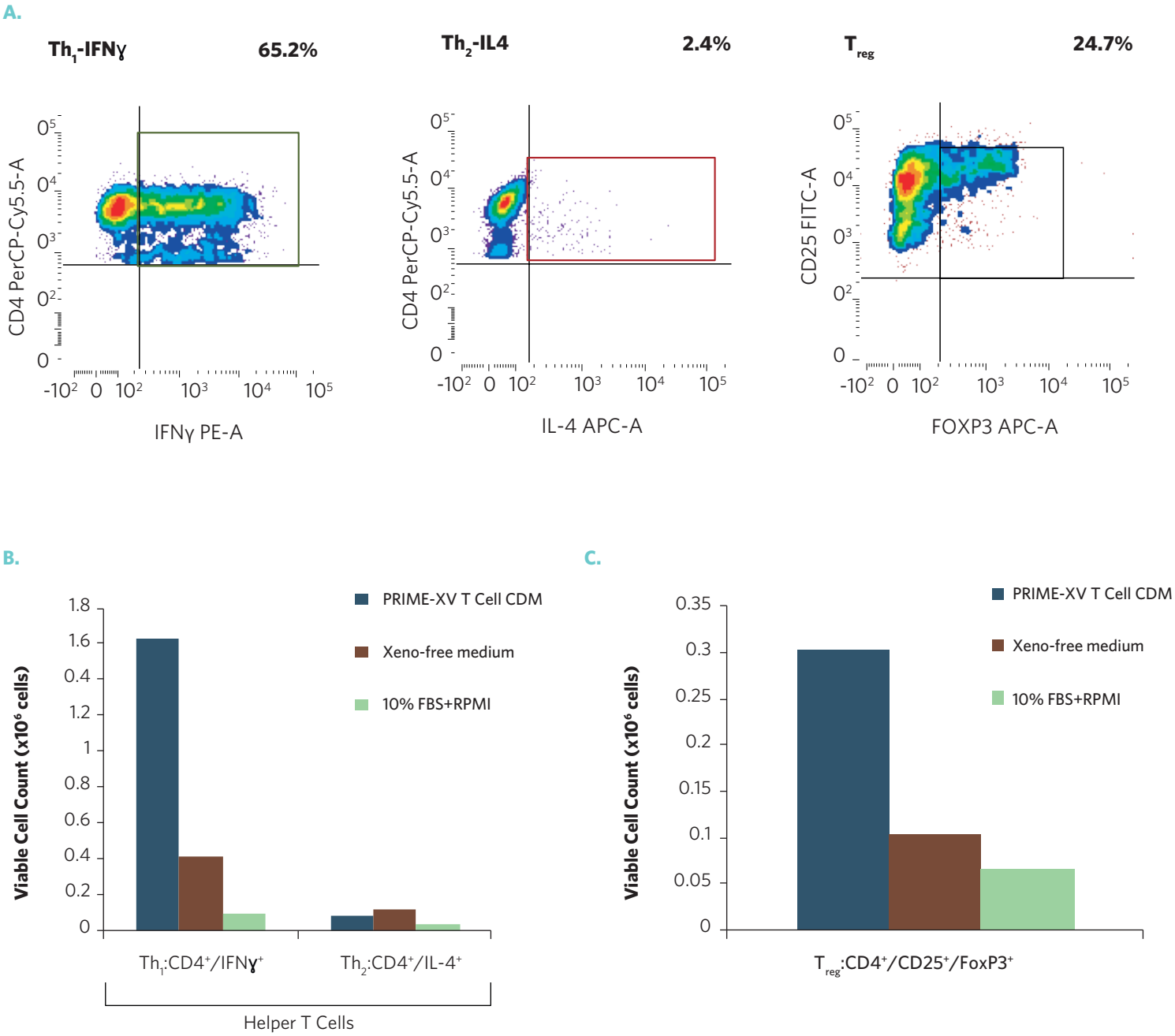

Figure 4. Purified CD3⁺ T cells were activated using anti-human CD3 and anti-human CD28 antibodies and cultured for 2 days in media supplemented with IL-2. For the polarization of Th_1 cells, T cells were cultured for another 72 hours in media containing 5 ng/mL of recombinant human IL-12 and 10 µg/mL of anti-human IL-4 antibodies. For T regulatory (T_{reg}) cell polarization, T cells were cultured for another 72 hours in media containing 50 ng/mL of recombinant TGF-β1 and 6 ng/mL of retinoic acid. Flow cytometry analysis was performed to show the representative populations of Th_1, Th_2, and T_{reg} cells cultured in PRIME-XV T Cell CDM (A); total number of viable polarized CD4⁺ cells expressing IFNγ or IL-4 (B); and total number of viable polarized CD4+ cells expressing CD25⁺ and FoxP3⁺ (C).

PRIME-XV T Cell CDM supports T cell reactivation

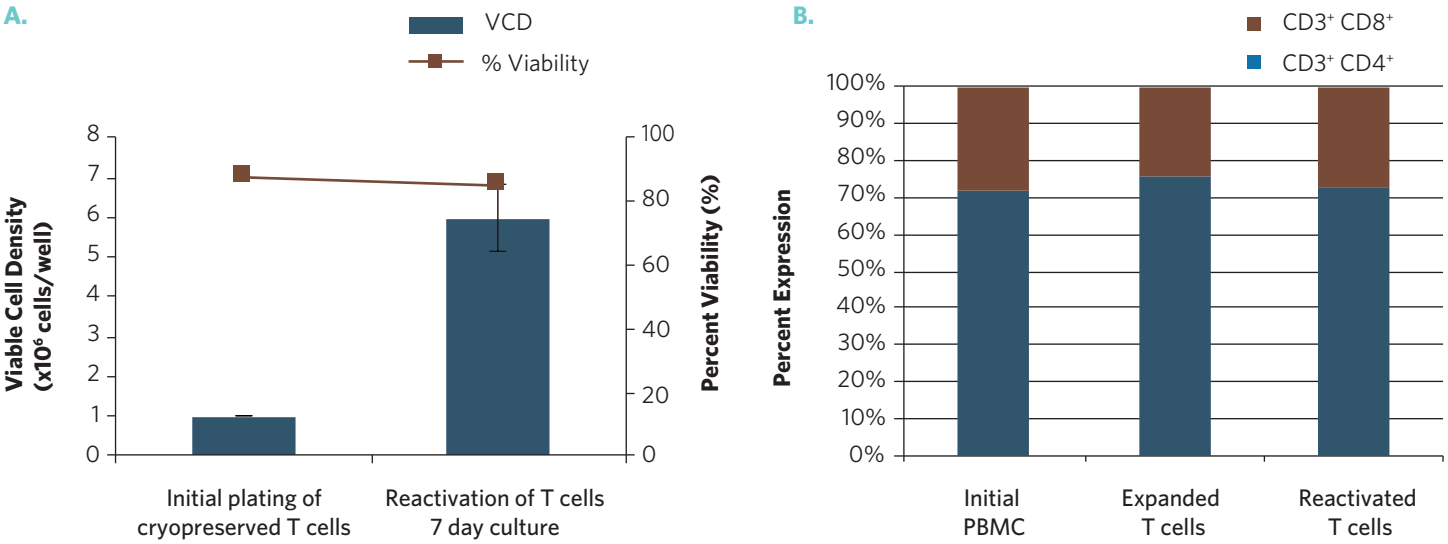

Figure 5. Peripheral blood mononuclear cells were previously activated, expanded for 14 days in PRIME-XV T Cell CDM supplemented with IL-2, and cryopreserved using PRIME-XV FreezIS. After one week in liquid nitrogen, cells were thawed, reactivated for expansion and cultured in PRIME-XV T Cell CDM supplemented with IL-2. After 7 days culture, the growth and viability of the reactivated cells were quantified (A). Flow cytometry analysis was performed to demonstrate the ratios of $CD3^+CD4^+$ /$CD3^+CD8^+$ cells of the reactivated cells compared to the initial PBMC population (B) and for the expression of CD62L (C).

PRIME-XV T Cell CDM - Manufactured to facilitate transfer from research to clinic

- Chemically-defined, animal component-free formula minimizes risks from adventitious agents
- Traceability documentation provided including Certificates of Analysis, Certificates of Origin, and a Drug Master File (DMF) filed with the US FDA
- Extensive QA testing including functionality, sterility, and endotoxin
- Custom sizes and packaging available on request
- Manufactured in compliance with cGMP regulations

A PRIME-XV SOLUTION FOR ANY CELL TYPE AT ANY SCALE

Routine production of homogeneous cells with the desired functionality and in sufficient quantity is key for high quality research and a smooth transition from development to commercial-scale manufacture.

PRIME-XV media consistently equal or outperform leading commercially-available alternatives and serum-based media. Each PRIME-XV medium is developed and verified using functional assays most relevant to the specific cell type, thereby providing an optimal *ex-vivo* environment during manipulations such as expansion and differentiation.

Transfer smoothly to larger-scale production and fulfill regulatory demands

As potential therapies move toward clinical trials, the need to grow sufficient numbers of cells for effective therapeutic doses using a safe, well-controlled, optimized process becomes paramount. PRIME-XV media are verified beyond the laboratory, often in bioreactor culture systems, to assist in a smooth transfer to clinical production while adhering to global and regional regulatory standards.

Cell-specific media development, optimization and manufacture

Since 1970, Irvine Scientific has been meeting the demand for proprietary and customized media solutions for an increasing diversity of cell types. Clients benefit from well-established, proven services, supported by years of knowledge and experience.

Our specialists will be happy to discuss the development of a new customized medium for your specific cell type or to assist with the optimization of your current PRIME-XV medium for scale-up and manufacture.

To discuss your requirements, contact us at ***getinfo@irvinesci.com***
or visit our website at ***www.irvinesci.com/contact-us***

FDA-regulated
cGMP compliant manufacture
ISO13485, EN 13485:2012 certified
Drug Master Files
FDA registered

Ordering information

MEDIA	CATALOG #	SIZE*	ADDITONAL INFORMATION
PRIME-XV T Cell CDM	91154	1 L	Chemically-defined, animal component-free formula Does not contain antibiotics or phenol red

*Custom sizes and packaging available on request.

Ancillary products

	CATALOG #	SIZE*	ADDITONAL INFORMATION
Recombinant IL-2 ACF	95118	10 µg	Animal component-free. Accession Number: P60568
Recombinant IL-3 ACF	95113	10 µg	Animal component-free. Accession Number: P08700
Recombinant IL-4 ACF	95114	20 µg	Animal component-free. Accession Number: P05112
PRIME-XV FreezIS	91139	100 mL 10 mL	Chemically-defined, free from animal components and proteins. Contains 10% DMSO

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