affymetrix
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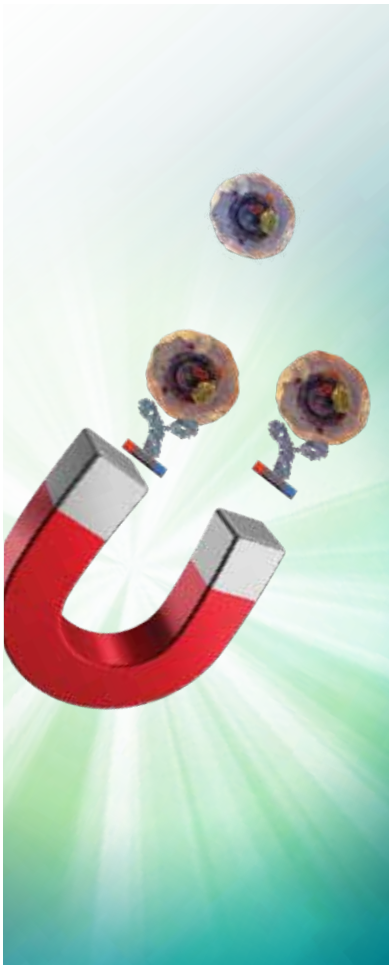


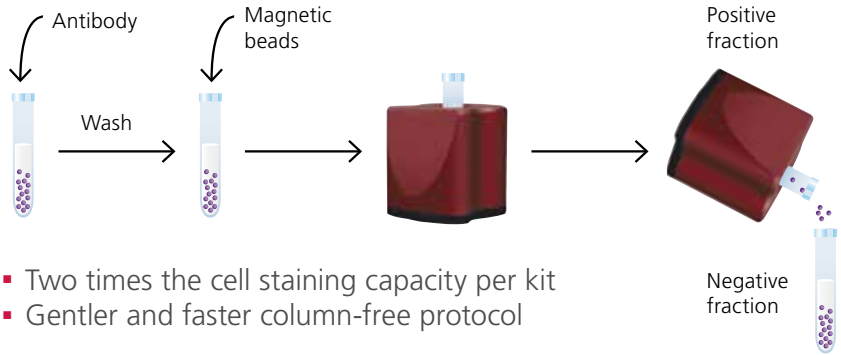
Magnetic Cell Enrichment

Purity for a cleaner workflow

Isolation and purification
MagniSort™ Magnetic Cell Separation Kits

Activation reagents
Functional grade antibodies
Recombinant cytokines and proteins

Full spectrum flow cytometry reagents
Fluorochrome-conjugated antibodies
Intracellular cytokine antibodies
Phospho-specific antibodies



- Two times the cell staining capacity per kit
- Gentler and faster column-free protocol

Whether cells are being activated *in vitro,* stained for or sorted by flow cytometry, or magnetically enriched for genetic analysis or other downstream experiments, the key to success is reliable antibody reagents. Using our broad portfolio of antibodies and strong expertise in immunology, we developed MagniSort™ technology, a column-free magnetic separation platform for T cell enrichment that is simpler, faster, and offers significant cost-savings compared to column-based separation methods. Start your experiment with T cell-specific cocktails and a system that yields less noise in your final result.

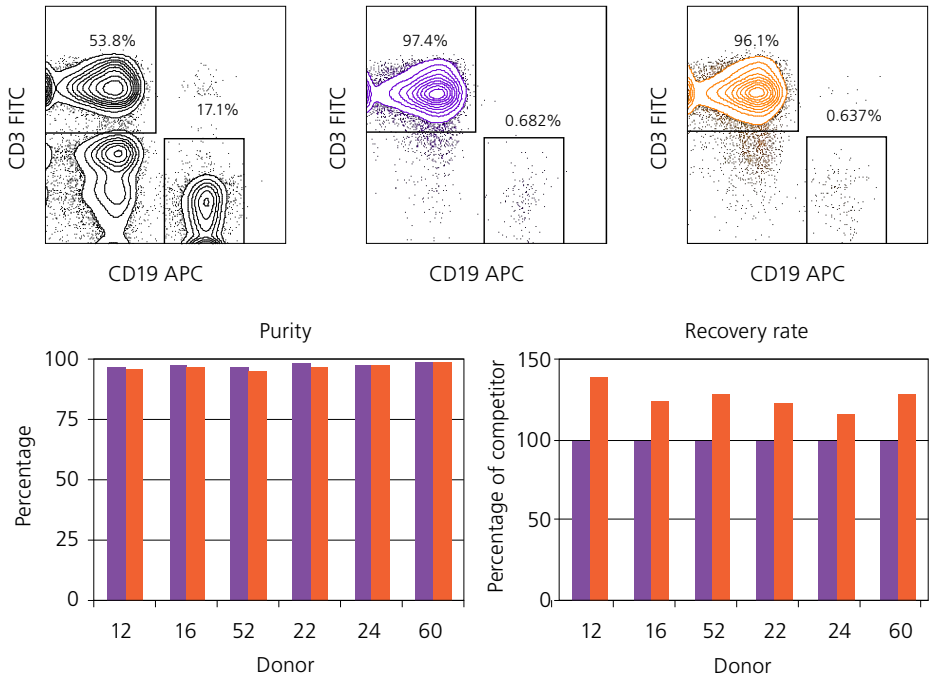
Enriching biology

There is no need to worry about the effect of large particles bound to your cells when using MagniSort™ Magnetic Cell Separation Kits. In addition to ensuring clean and consistent purification of the cells of interest, we confirmed that MagniSort™ kits would neither artificially activate nor hinder subsequent differentiation studies.

Advantages of MagniSort™ kits over column-based kits

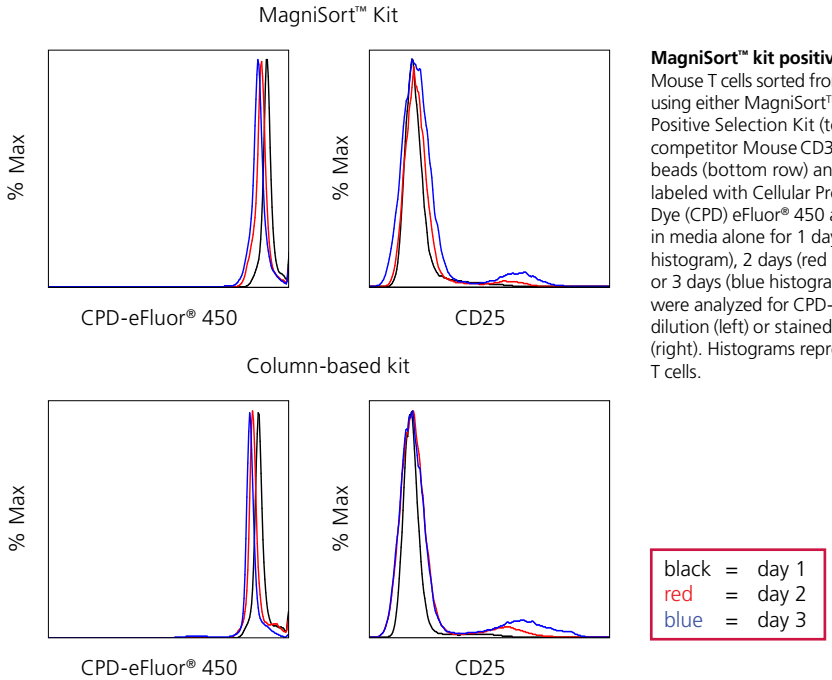
- Save time and effort
- Treat cells gently without passage through a column
- Eliminate cost and waste of disposable columns
- 2 x 10^9 cells can be processed per kit

MagniSort™ enrichment versus column-based separation

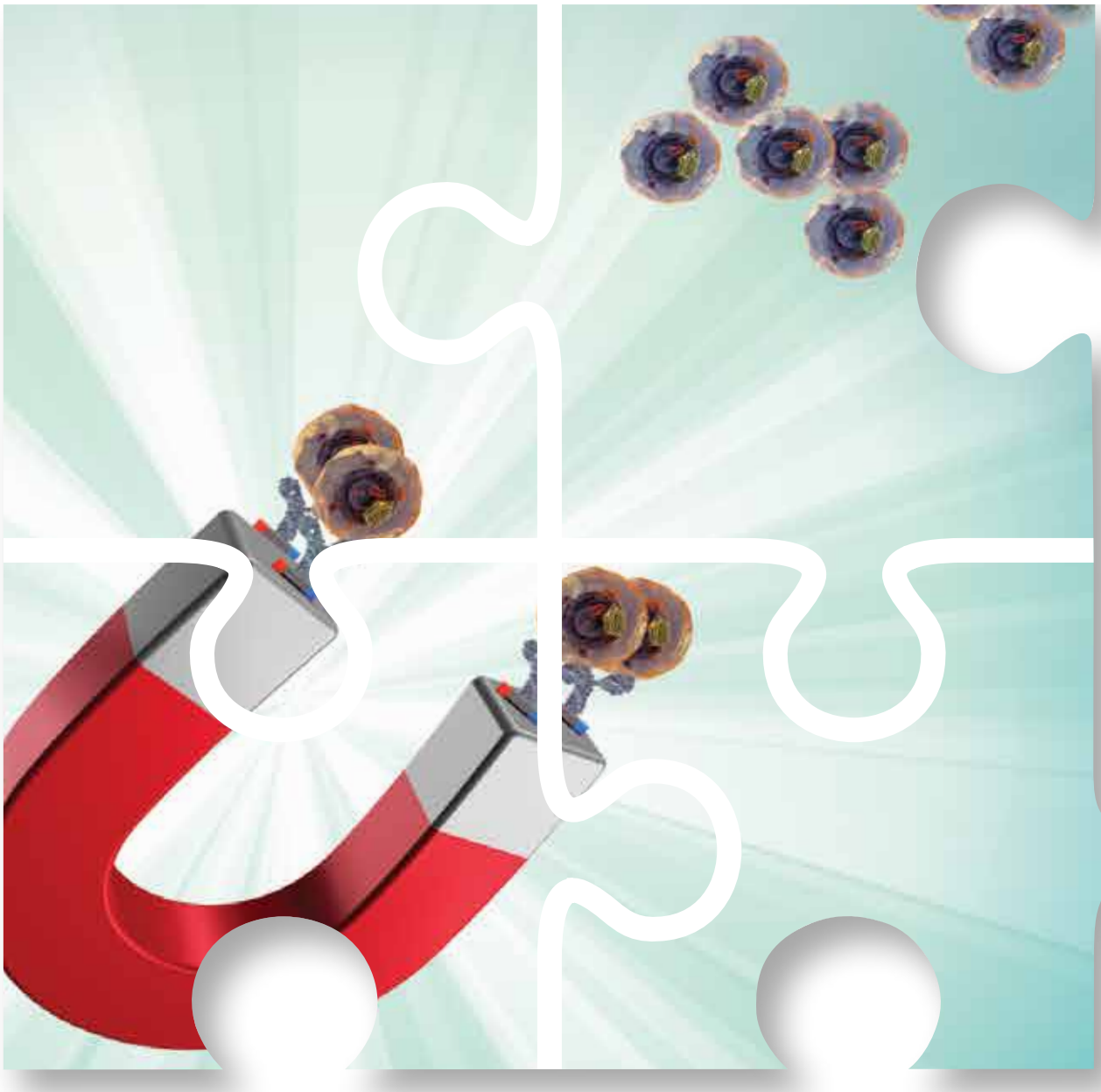


MagniSort™ kit purity
1x10^7 human normal peripheral blood cells were unsorted (black), or positively selected for CD3+ cells using competitor Human CD3 magnetic beads, human (purple) or MagniSort™ Human CD3 Positive Selection Kit. Cells were stained with CD19 APC and CD3 (clone SK7) FITC (orange).

Positive selection does not stimulate isolated cells

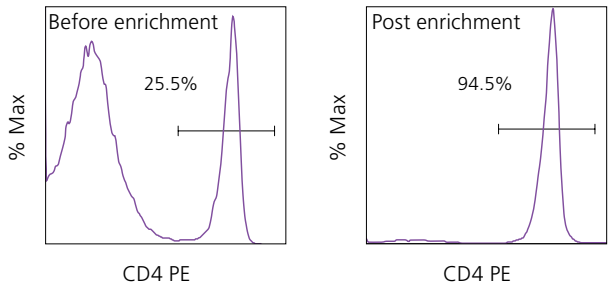


MagniSort™ kit positive selection
Mouse T cells sorted from splenocytes using either MagniSort™ Mouse CD3 Positive Selection Kit (top row) or competitor Mouse CD3 magnetic beads (bottom row) and were labeled with Cellular Proliferation Dye (CPD) eFluor® 450 and cultured in media alone for 1 day (black histogram), 2 days (red histogram) or 3 days (blue histogram). Cells were analyzed for CPD-eFluor® 450 dilution (left) or stained with CD25 (right). Histograms represent CD3+ T cells.

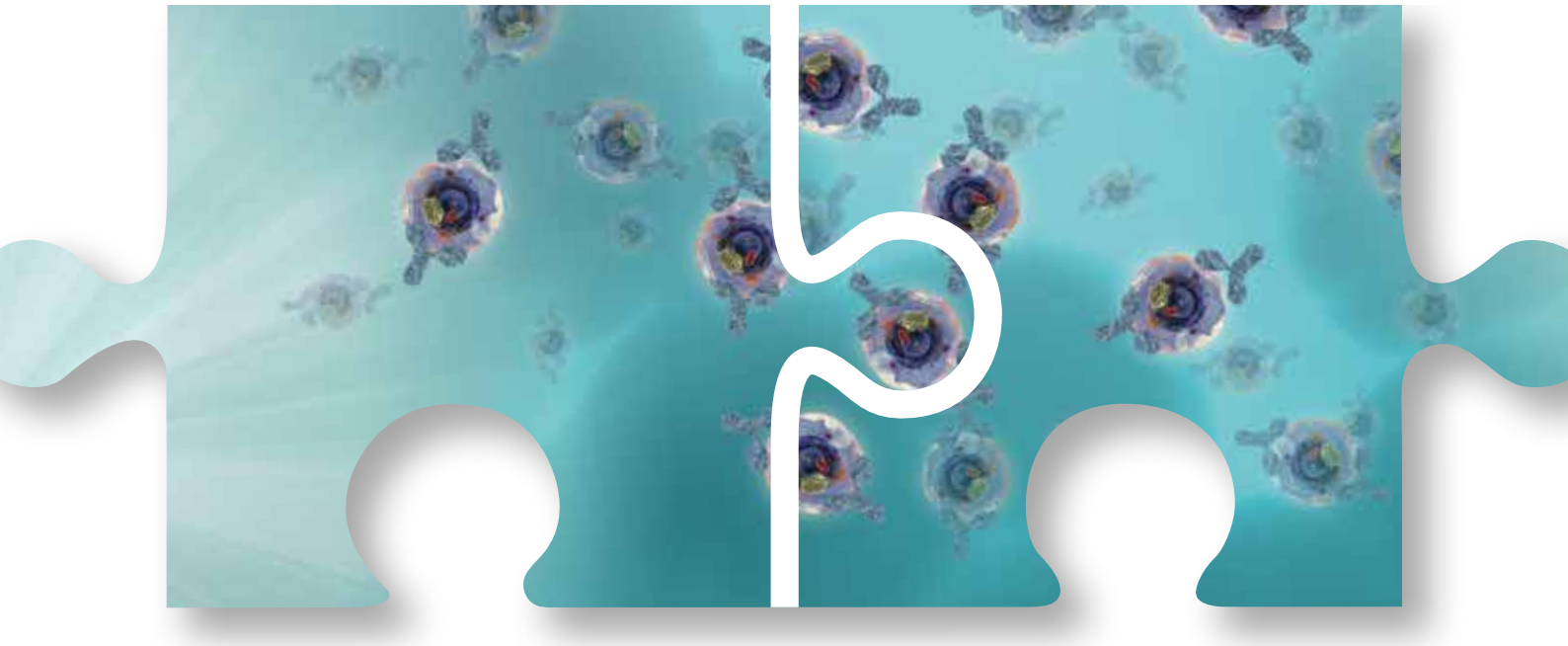


Cell isolation and enrichment

Magnetic cell separation is a method of purifying cells from heterogeneous samples. When absolute purity is not necessary, as is often the case with *in vitro* stimulation of T cells, magnetic cell separation can deliver highly enriched cells without exposure to harsh separation protocols like flow cytometric sorting, or chemical gradients.



MagniSort™ Mouse CD4 T Cell Enrichment Kit
Mouse splenocytes were unsorted (left) or sorted with the MagniSort™ Mouse CD4 T cell Enrichment Kit (right) then stained with Anti-Mouse CD4 PE (cat. 12-0041). Total viable cells were used for analysis as determined by fixable viability dye.

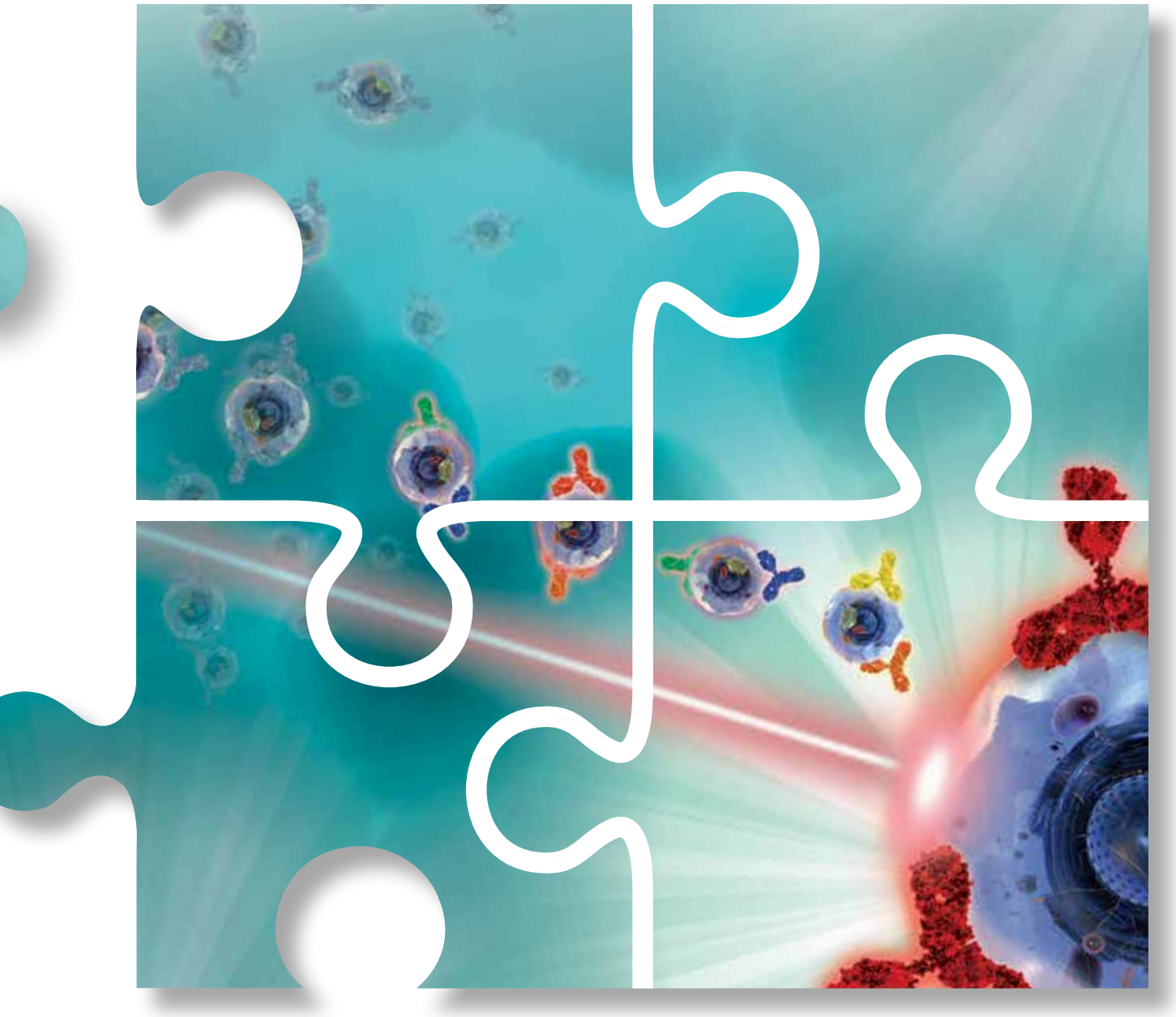


In vitro activation and polarization

Resting cells, such as naïve CD4 T cells, sometimes need to be stimulated in order to guide them down a path of biological relevance for study. For differentiation studies, the antibodies able to cross-link and artificially signal through their cognate antigen (often a cell-surface receptor) can be combined with recombinant cytokines or antibodies (which neutralize the inhibitory signals), specifically driving differentiation down a given biological pathway.

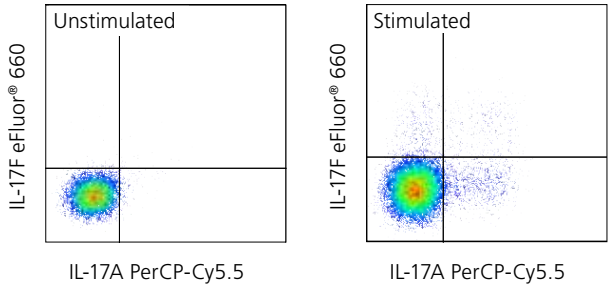
T Cell Polarization Conditions

Description	Cat. No.						
	Human	Mouse	Th0	Th1	Th2	Th17	Role
Anti-CD3 (plate coated)	16-0039 16-0037 16-0038 16-0038	16-0031 16-0033 16-0032	■	■	■	■	- Binds and cross-links TCR and provides signal 1 to T cells
Anti-CD28	16-0289	16-0281	■	■	■	■	- Co-stimulatory signal 2 for T cells, necessary for activation of T cells *in vitro*
IL-2	14-8029 34-8029	14-8021 34-8021	■	■	■		- Expressed by activated T cells - Mediates activated T cell proliferation and clonal expansion
IL-4	14-8049 34-8049	14-8041 34-8041			■		- Required for Th2 priming and maturation - Autocrine of Th2 cells during their maturation - High concentrations can block the generation of Th1 cells from naive T cells
IL-12	14-8129 34-8129	14-8121 34-8121		■			- Produced by activated macrophages - Promotes survival and growth of Th1 cell - Sustains sufficient number of memory/ effector Th1 cells - Inhibits the formation of Th2 cells
TGF-β1	14-8348 34-8348	14-8342 34-8342				■	- Essential factor for Th0 to Th17 development in concert with IL-6 and IL-23
IL-6	14-8069 34-8069	14-8061 34-8061				■	- Essential in the activation of IL-17 specific transcription factor - RORγt and IL-21 expression that then activates the expression of IL-17A, IL-17F, and IL-23R on Th17 cells
Anti-IL-4	16-7048	16-7041		■		■	- Inhibits Th1 differentiation and promotes Th2 differentiation
Anti-IFNγ	16-7318	16-7312			■	■	- Inhibits Th2 differentiation and promotes Th1 differentiation
Anti-IL-12	16-7285	16-7285			■		- Inhibits Th2 differentiation and promotes Th1 differentiation



Analyze by flow cytometry

Flow cytometry is unmatched in its ability to deliver multi-parametric detection of protein, RNA, and cellular status, such as proliferation or apoptosis, within thousands of cells per second. However, an assay is only as powerful as its weakest reagent which is why reliable and highly-validated antibodies are crucial to every flow cytometry experiment.



Th17 differentiation
Intracellular staining of CD4-enriched Th17-polarized (with Human IL-23 Recombinant Protein [cat. no. 14-8239]) normal human peripheral blood cells with Anti-Human IL-17A PerCP-Cy5.5 (cat. no. 45-7179) and Anti-Human IL-17F eFluor® 660. Cultures were treated with Protein Transport Inhibitor Cocktail alone (cat. no. 00-4980; left) or Cell Stimulation Cocktail (plus protein transport inhibitors) (cat. no. 00-4975; right) for 5 hours prior to intracellular staining. Cells were fixed and permeabilized using the Intracellular Fixation & Permeabilization Buffer Set. Viable cells, as determined by Fixable Viability Dye eFluor® 450 (cat. 65-0863), were used for analysis.

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