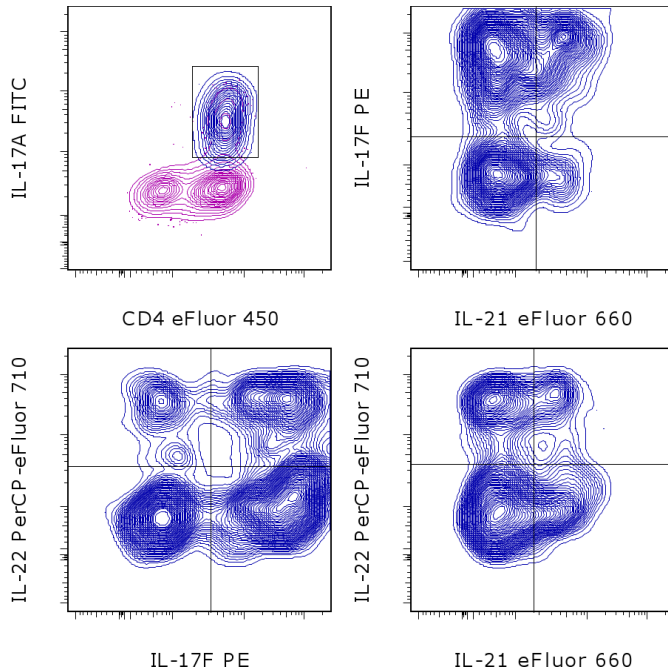


**eBioscience™ Human Th17 Cytokine Staining Panel**

**Catalog Number:** 88-8419

**Also known as:** IL-17A, IL-17F, IL-21, IL-22

**RUO: For Research Use Only. Not for use in diagnostic procedures.**



Th17-polarized CD4+ PBMC were stimulated for 5 hours with Cell Stimulation Cocktail (plus protein transport inhibitors) (cat. 00-4975) and then intracellularly stained with the Human Th17 Cytokine Staining Panel. Lymphocytes were gated for staining of CD4 eFluor® 450 and IL-17A FITC (upper left plot, blue) and then analyzed for staining of IL-17F PE, IL-21 eFluor® 660 and IL-22 PerCP-eFluor® 710.

**Product Information**

**Contents:** eBioscience™ Human Th17 Cytokine Staining Panel

**Catalog Number:** 88-8419

**Concentration:** 5 uL/test

**Formulation:** aqueous buffer, 0.09% sodium azide, may contain carrier protein/stabilizer

**Temperature Limitation:** Store at 2-8°C. Light sensitive material.

**Batch Code:** Refer to vial

**Use By:** Refer to vial



**Description**

This human Th17 cytokine staining panel includes all reagents needed for simultaneous flow cytometric detection of all the major cytokines produced by the Th17 lineage: IL-17A, IL-17F, IL-21 and IL-22. An anti-CD4 antibody that can be used after fixation and permeabilization, as well as IC Fixation and Permeabilization Buffers, is also included.

CD4+ T helper cells are critical mediators of the cellular immune response. For many years, due to cytokine expression patterns, it was thought that CD4+ T helper cells existed as a dichotomy of lineages named Th1 and Th2. However, further investigation revealed that the T helper cell population was not limited to these two subsets. Although it had long been appreciated that IL-17 (also known as IL-17A) production by T cells was required for protection against some pathogens, studies demonstrated that this cytokine was produced by a unique subset of T helper cells. Subsequent reports definitively showed that T cells could differentiate into IL-17-producing cells *in vitro* and *in vivo* independent of Th1 or Th2 development, thereby establishing Th17 cells as a unique T helper cell lineage. In addition to IL-17A expression, Th17 cells have been reported to express IL-17F (an heterodimers of IL-17A and IL-17F), IL-21 and IL-22. Functionally, Th17 cells play a role in host defense against extracellular pathogens by mediating the recruitment of neutrophils and macrophages to infected tissues. Moreover, it is becoming evident that aberrant regulation of Th17 cells may play a significant role in the pathogenesis of multiple inflammatory and

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autoimmune disorders.

### Components

**Anti-Human IL-17A (eBio64Dec17) FITC (cat. 11-7179):** 25 tests (0.125 µg/5 µl test)\*

**Anti-Human IL-17F (SHLR17) PE (cat. 12-7169):** 25 tests (0.5 µg/5 µl test)\*

**Anti-Human IL-22 (22URTI) PerCP-eFluor® 710 (cat. 46-7229):** 25 tests (0.015 µg/5 µl test)\*

**Anti-Human IL-21 (3A3-N2) eFluor® 660 (cat. 50-7219):** 25 tests (0.125 µg/5 µl test)\*

**Anti-Human CD4 (RPA-T4) eFluor® 450 (cat. 48-0049):** 25 tests (0.25 µg/5 µl test)\*

**IC Fixation Buffer (cat. 00-8222):** 20 ml. This solution is at a 1X working concentration and contains 4% Paraformaldehyde, which is toxic and suspected carcinogen. Contact with eyes, skin and mucous membranes should be avoided.

**Permeabilization Buffer (10x) (cat. 00-8333):** 100 ml. Dilute to 1X with deionized/distilled water and store at 4°C.

Caution: Harmful if swallowed or irritant by contact. Wear proper protective clothing and gloves. Note: The 10X Permeabilization Buffer has a natural tendency to precipitate, however, its function is not affected by this. To clarify, the solution can be filtered after dilution to 1X working solution.

\*A test is defined as the amount of antibody to use for 1 million cells in a 100 µl staining volume.

### Applications Reported

The Human Th17 Cytokine Flow Phenotyping Panel has been reported for use in intracellular staining followed by flow cytometric analysis.

### Applications Tested

The Human Th17 Cytokine Flow Phenotyping Panel contains antibodies that have been pre-titrated and tested by intracellular staining followed by flow cytometric analysis of Th17-polarized peripheral blood mononuclear cells. Each antibody in the panel can be used at 5 µL per test. A test is defined as the amount (µg) of antibody that will stain a cell sample in a final volume of 100 µL. Cell number should be determined empirically but can range from 10<sup>5</sup> to 10<sup>8</sup> cells/test. Positive events were gated based on unstimulated cells.

For Staining Protocol refer to Best Protocols: Protocol A: Two-step protocol for intracellular proteins.

### References

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Bettelli E, Korn T, Oukka M, Kuchroo VK. Induction and effector functions of T(H)17 cells. *Nature*. 2008 Jun 19;453(7198):1051-7.

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Chen Z, Tato CM, Muul L, Laurence A, O'Shea JJ. Distinct regulation of interleukin-17 in human T helper lymphocytes. *Arthritis Rheum*. 2007 Sep;56(9):2936-46. (**eBio64Dec17**, FC, PubMed)

Ivanov II, McKenzie BS, Zhou L, Tadokoro CE, Lepelley A, Lafaille JJ, Cua DJ, Littman DR. The orphan nuclear receptor RORγ<sub>1</sub> directs the differentiation program of proinflammatory IL-17+ T helper cells. *Cell*. 2006 Sep 22;126(6):1121-33.

### Related Products

12-1969 eBioscience™ Anti-Human CD196 (CCR6) PE (R6H1)

45-1619 eBioscience™ Anti-Human CD161 PerCP-Cyanine5.5 (HP-3G10)

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88-7117 Human IL-17AF Uncoated ELISA Kit

88-7176 Human IL-17A (homodimer) Uncoated ELISA Kit

88-7216 Human IL-21 ELISA Ready-SET-Go!® (Discontinued. Refer to Cat. No. 88-8218)

88-7478 Human IL-17F Uncoated ELISA Kit

88-7522 Human IL-22 Uncoated ELISA Kit

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