

eBioscience™ Mouse Th17 Cytokine Staining Panel

Catalog Number: 88-8411

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

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

Product Information

Contents: eBioscience™ Mouse Th17 Cytokine Staining Panel

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

Temperature Limitation: Store at 2-8°C. Do not freeze. Light sensitive material.

Batch Code: Refer to vial

Use By: Refer to vial



Description

This mouse 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 (and heterodimers of IL-17 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 autoimmune disorders.

Components

Anti-Mouse IL-17A (eBio17B7) FITC (cat. 11-7177): 25 ug ([optimal] = 0.25 µg)*

Anti-Mouse IL-17F (eBio18F10) PE (cat. 12-7471): 25 ug ([optimal] = 0.5 µg)*

Anti-Mouse IL-22 (1H8PWSR) PerCP-eFluor® 710 (cat. 46-7221): 25 ug ([optimal] = 0.125 µg)*

Anti-Mouse IL-21 (FFA21) APC (cat. 17-7211): 25 ug ([optimal] = 0.125 µg)*

Anti-Mouse CD4 (RM4-5) eFluor® 450 (cat. 48-0042): 25 ug ([optimal] = 0.125 µg)*

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.

***The optimal concentration is based on 1 million cells in a 100 µl total staining volume.**

Applications Reported

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

Applications Tested

The Mouse Th17 Cytokine Flow Phenotyping Panel has been tested on Th17-polarized mouse splenocytes restimulated with PMA, Ionomycin and Brefeldin A for 5 hours. Positive events were gated based on unstimulated cells.

Not for further distribution without written consent.

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

References

Bauquet AT, Jin H, Paterson AM, Mitsdoerffer M, Ho IC, Sharpe AH, Kuchroo VK. The costimulatory molecule ICOS regulates the expression of c-Maf and IL-21 in the development of follicular T helper cells and TH-17 cells. *Nat Immunol.* 2009 Feb;10(2):167-75.

Lee YK, Turner H, Maynard CL, Oliver JR, Chen D, Elson CO, Weaver CT. Late developmental plasticity in the T helper 17 lineage. *Immunity.* 2009 Jan;30(1):92-107. (18F10, FC, Pubmed)

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

Dong C. TH17 cells in development: an updated view of their molecular identity and genetic programming. *Nat Rev Immunol.* 2008 May;8(5):337-48.

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

Related Products

00-4506 eBioscience™ Brefeldin A Solution (1000X)

11-4321 eBioscience™ Rat IgG2a K Isotype Control FITC (eBR2a)

12-4321 eBioscience™ Rat IgG2a K Isotype Control PE (eBR2a)

46-4301 eBioscience™ Rat IgG1 K Isotype Control PerCP-eFluor™ 710 (eBRG1)

51-4321 Rat IgG2a K Isotype Control Alexa Fluor® 647 (Discontinued. Refer to Cat. No. 50-4321) (eBR2a)

88-7272 Mouse IL-17AF (heterodimer) ELISA Ready-SET-Go!® (To Be Discontinued. Please refer to 88-8711 for the 2nd generation kit)

88-7371 Mouse IL-17A Uncoated ELISA Kit

88-7422 Mouse IL-22 Uncoated ELISA Kit

88-7472 Mouse IL-17F Uncoated ELISA Kit

88-8210 Mouse IL-21 Uncoated ELISA Kit

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