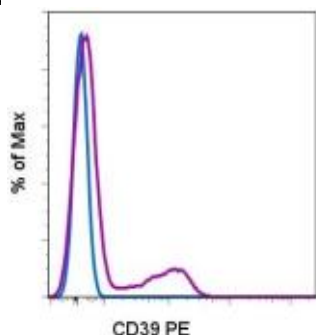


## CD39 PE


**Catalog Number(s):** 9012-0399-025 (25 tests), 12-0399-120 (120 tests)



Fluorescence profiles of normal human peripheral blood lymphocytes unstained (blue histogram) or stained with CD39 PE (purple histogram).

### Product Information

**Contents:** CD39 PE

 **Catalog Number(s):** 9012-0399-025 (25 tests), 12-0399-120 (120 tests)

**Clone:** A1

**Concentration:** 5 uL (0.125 ug)/test  
(a test is defined as the amount that will stain  $1 \times 10^6$  cells in 100 uL)

**Host/Isotype:** Mouse IgG1

**HLDA Workshop:** IV

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



**Storage Conditions:** Store at 2-8°C.

Do not freeze.



Light-sensitive material.



Caution, contains Azide



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**Authorized Representative:** Bender MedSystems GmbH, an eBioscience Company Campus Vienna Biocenter 2 A-1030 Vienna Austria

### Intended Use

The A1 fluorochrome-conjugated monoclonal antibody reacts with the human CD39 antigen. CD39 can be detected in human biological samples using immunological techniques.

### Principles of the Test

Flow cytometry is a useful tool for simultaneously measuring multiple physical properties of individual particles (such as cells). Cells pass single-file through a laser beam. As each cell passes through the laser beam, the cytometer records how the cell or particle scatters incident laser light and emits fluorescence. Using this flow cytometric analysis protocol, one can perform a simultaneous analysis of surface molecules at the single-cell level.

### Description

The A1 monoclonal antibody reacts with human CD39, also known as ectonucleoside triphosphate diphosphohydrolase 1 (ENTPD1) or NTPDase. CD39 is an integral membrane protein with two transmembrane domains and exists as a homotetramer. It is the most prominent ectoenzyme of the immune system. The function of CD39 is to effectively remove toxic extracellular ATP by converting it to ADP or AMP. CD39 is thought to work together with CD73 to hydrolyze ATP and has been well characterized on Langerhans cells. Expression of CD39 was originally identified on activated lymphocytes. Expression is also found on a subset of T

cells, B cells and dendritic cells as well as weak staining on monocytes and granulocytes. Recently, CD39 and CD73 have been found on regulatory T cells (Treg). Expression of CD39 on Treg may facilitate their entry into inflamed areas where high levels of ATP are present. Expression of CD39 on Foxp3+CD4+ cells ranges from 25-45%.

#### **Specimen Collection and Storage Instructions**

Collect venous blood sample by venipuncture into a sterile blood collection tube using an appropriate anticoagulant (EDTA is recommended). Keep samples at room temperature (18-25°C). Prior to use, mix samples by gentle agitation.

#### **Materials Required But Not Provided**

- 12x75 mm test tubes
- Buffers (eBioscience Flow Cytometry Staining Buffer, Cat. No. 00-4222 recommended)
- Lysis Buffer (eBioscience 1X RBC Lysis Buffer, Cat. No. 00-4333 or eBioscience 1-step Fix/Lyse Solution (10X), Cat. No. 00-5333 recommended)
- For intracellular staining use IC Fixation Buffer and Permeabilization Buffer, Cat. No. 88-8823 (intracellular cytokine or cytoplasmic protein staining) or Foxp3 Buffer Set, Cat. No. 00-5523 (For nuclear protein staining). Refer to the Best Protocols section of the eBioscience website for the "Staining Intracellular Antigens for Flow Cytometry" protocols.
- Viability stain (7-AAD Viability Staining Solution, Cat. No. 00-6993 or Propidium Iodide Staining Solution, Cat. No. 00-6990 recommended)
- Automated pipettes
- Centrifuge
- Vortex mixer
- Ice bucket or refrigerator
- Flow cytometer

#### **Test Protocol**

NOTE: For intracellular staining, refer to the Best Protocols section of the eBioscience website for the "Staining Intracellular Antigens for Flow Cytometry" protocols.

1. Aliquot 100 µL of the test sample into tubes.
2. Add 5 µL of the appropriate antibody to each tube.
3. Incubate 30-60 minutes at 2-8°C. Alternatively, samples can be incubated at room temperature in the dark 15-30 minutes.
4. Add 2 ml of 1X RBC Lysis Buffer (at room temperature) per tube. Mix gently. (Alternatively,

samples can be incubated with 2 mL 1-step Fix/Lyse Solution.)

5. Incubate samples in the dark at room temperature for 10 minutes. Do not exceed 15 minutes of incubation with the RBC Lysis Buffer.
6. Centrifuge samples at 300-400 x g for 5 minutes at room temperature, decant/aspirate supernatant and wash 1 time with 2 ml of Flow Cytometry Staining Buffer.
7. Centrifuge samples at 300-400 x g for 5 minutes at room temperature, decant/aspirate supernatant.
8. Resuspend stained cell pellet in 1 mL Flow Cytometry Staining Buffer and analyze samples on a flow cytometer.

#### **Limitations**

1. For optimal performance of fluorochrome conjugated antibodies, store vials at 2-8°C in the dark. Do not freeze.
2. Centrifuge the antibody vial prior to opening to recover the maximum volume.
3. Except where noted in the protocol, all staining should be done on ice or at 2-8°C with minimal exposure to light.

#### **Performance Characteristics**

Consistency of high-quality reagents is ensured by testing each lot of monoclonal antibody for conformance against characteristics of a standard reagent. Representative flow cytometric data is included where appropriate.

#### **Evidence of Deterioration**

For questions or concerns regarding the performance or quality of products received, please contact eBioscience Technical Support (see below).

#### **References**

Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture (H3-A6), 3rd Edition published by the National Committee for Clinical Laboratory Standards.

Knapp W, Dorken B, et al, eds. Leucocyte Typing IV: White Cell Differentiation Antigens. Oxford University Press. New York. 1989.

Borsellino G, Kleinewietfeld M, Di Mitri D, Sternjak A, Diamantini A, Giometto R, Hopner S, Centonze D, Bernardi G, Dell'acqua ML, Rossini PM, Battistini L, Rotzschke O, Falk K. Expression of ectonucleotidase CD39 by Foxp3+ Treg cells: hydrolysis of extracellular ATP and immune suppression. *Blood*. 2007. 110(4):1225-32.