CD39 antibodies, human

For research use only

6
One test corresponds to labeling of up to 10 cells in a total volume of 100 µL

Product	Content	Order no.
CD39-Biotin	for 30 tests	130-110-787
CD39-VioBright FITC	for 30 tests	130-110-792
CD39-VioBright FITC	for 100 tests	130-110-654
CD39-PE	for 30 tests	130-110-788
CD39-PE	for 100 tests	130-110-650
CD39-APC	for 30 tests	130-110-789
CD39-APC	for 100 tests	130-110-651
CD39-PE-Vio615	for 30 tests	130-110-794
CD39-PE-Vio615	for 100 tests	130-110-656
CD39-PE-Vio770	for 30 tests	130-110-790
CD39-PE-Vio770	for 100 tests	130-110-652
CD39-APC-Vio770	for 30 tests	130-110-791
CD39-APC-Vio770	for 100 tests	130-110-653
CD39-Biotin	for 100 tests	130-110-649

Warnings

Reagents contain sodium azide. Under acidic conditions sodium azide yields hydrazoic acid, which is extremely toxic. Azide compounds should be diluted with running water before discarding. These precautions are recommended to avoid deposits in plumbing where explosive conditions may develop.

Technical data and background information

Antigen	CD39
Clone	REA739
Isotype	recombinant human IgG1
Isotype control	REA Control (S) antibodies
Alternative names of antigen	Entpd1, ATPDase, NTPDase-1, SPG64, EC3.6.1.5, gp80
Entrez Gene ID	953
Molecular mass of antigen [kDa]	58
Cross-reactivity	rhesus monkey (*Macaca mulatta*)
Distribution of antigen	T cells
Product format	Reagents are supplied in buffer containing stabilizer and 0.05% sodium azide.
Fixation	The antibody is suited for staining of formaldehyde-fixed cells.

Storage	Store protected from light at 2–8 °C. Do not freeze.

Clone REA739 recognizes the 70–100 kDa membrane-bound human CD39 molecule, which is expressed on an effector/memory-like subset of FoxP3^{+} regulatory T cells. CD39 is an ectonucleotidase and catalyzes the hydrolysis of extracellular nucleotides, for example, ATP. Together with CD73, which is an ecto-5’-nucleotidase, this can lead to the production of adenosine. High extracellular ATP concentrations indicate tissue injury and cell death and induce various pro-inflammatory responses in immune cells. Through its enzymatic activity, CD39 can contribute to the suppressive function of regulatory T cells, for example, by eliminating extracellular ATP or by generating adenosine, which has suppressive effects on various immune cells. Additional information: Clone REA739 displays negligible binding to Fc receptors.

Reagent requirements

- Buffer: Prepare a solution containing phosphate-buffered saline (PBS), pH 7.2, 0.5% bovine serum albumin (BSA), and 2 mM EDTA by diluting MACS® BSA Stock Solution (# 130-091-376) 1:20 with autoMACS® Rinsing Solution (# 130-091-222). Keep buffer cold (2−8 °C).
  Note: EDTA can be replaced by other supplements such as anticoagulant citrate dextrose formula-A (ACD-A) or citrate phosphate dextrose (CPD). Buffers or media containing Ca^{2+} or Mg^{2+} are not recommended for use.
- (Optional) Fluorochrome-conjugated anti-biotin antibodies, e.g., Anti-Biotin-PE (# 130-090-756) as secondary antibody reagent in combination with biotinylated antibodies.
- (Optional) Propidium Iodide Solution (# 130-093-233) for flow cytometric exclusion of dead cells without fixation.
- (Optional) Fixation and Dead Cell Discrimination Kit (# 130-091-163) for cell fixation and flow cytometric exclusion of dead cells.

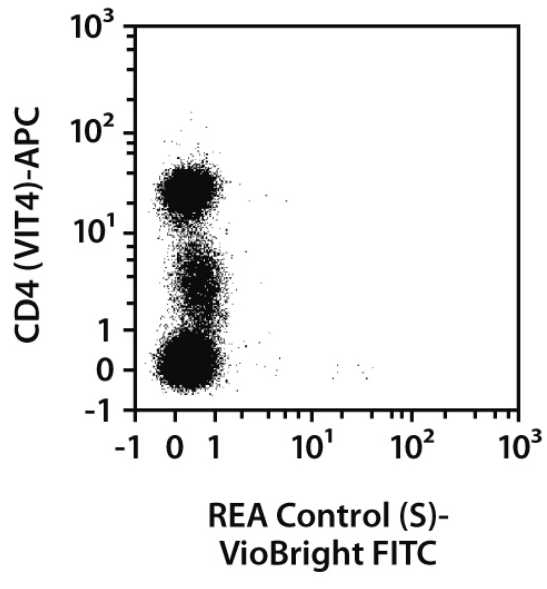
Protocol for cell surface staining

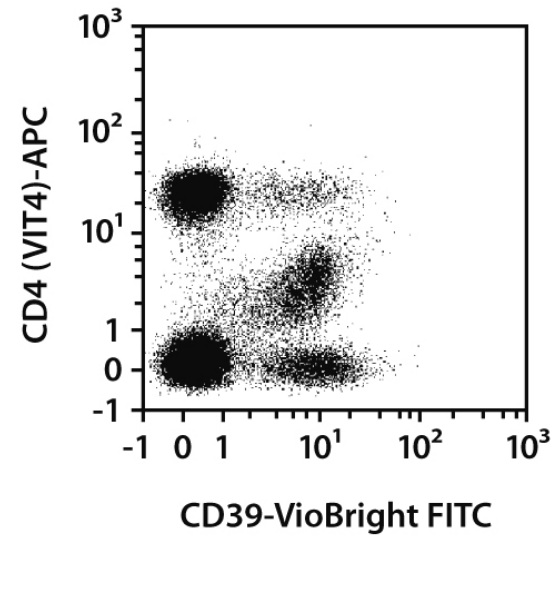
- The recommended antibody dilution for labeling of cells and subsequent analysis by flow cytometry is 1:50 for up to 10^{6} cells/100 µL.
- Volumes given below are for up to 10^{6} nucleated cells. When working with fewer than 10^{6} cells, use the same volumes as indicated. When working with higher cell numbers, scale up all reagent volumes and total volumes accordingly.

1. Determine cell number.
2. Centrifuge cell suspension at 300×g for 10 minutes. Aspirate supernatant completely.
3. Resuspend up to 10^{6} nucleated cells per 98 µL of buffer.
4. Add 2 µL of the antibody.
5. Mix well and incubate for 10 minutes in the dark in the refrigerator (2−8 °C).
   Note: Higher temperatures and/or longer incubation times may lead to non-specific cell labeling. Working on ice requires increased incubation times.
6. Wash cells by adding 1−2 mL of buffer and centrifuge at 300×g for 10 minutes. Aspirate supernatant completely.
7. (Optional) If biotinylated antibody was used, resuspend the cell pellet in buffer and stain with fluorochrome-conjugated anti-biotin antibody according to the manufacturer's recommendations.
8. Resuspend cell pellet in a suitable amount of buffer for analysis by flow cytometry or fluorescence microscopy.

Examples of immunofluorescent staining

Human peripheral blood mononuclear cells (PBMCs) were stained with CD39 antibodies or with the corresponding REA Control (S) antibodies (left image) as well as with CD4 antibodies. Flow cytometry was performed using the MACSQuant® Analyzer. The Tandem Signal Enhancer has been used to increase binding specificity of tandem-dye–conjugated antibodies. Cell debris and dead cells were excluded from the analysis based on scatter signals and propidium iodide fluorescence or 4',6-diamidino-2-phenylindole (DAPI) fluorescence, as in the case of tandem conjugates.


CD4 (VIT4)-APC
REA Control (S)-VioBright FITC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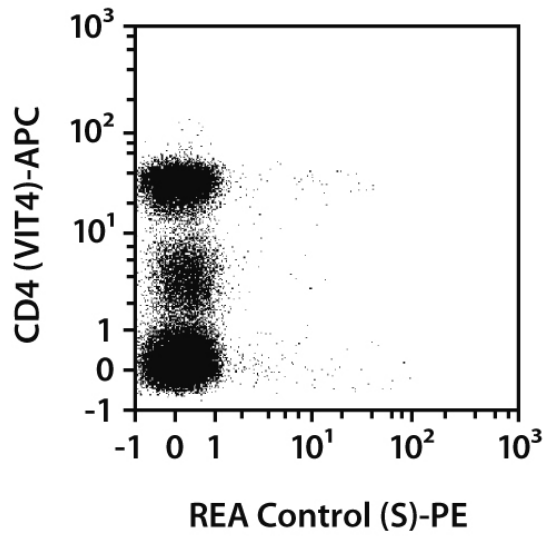
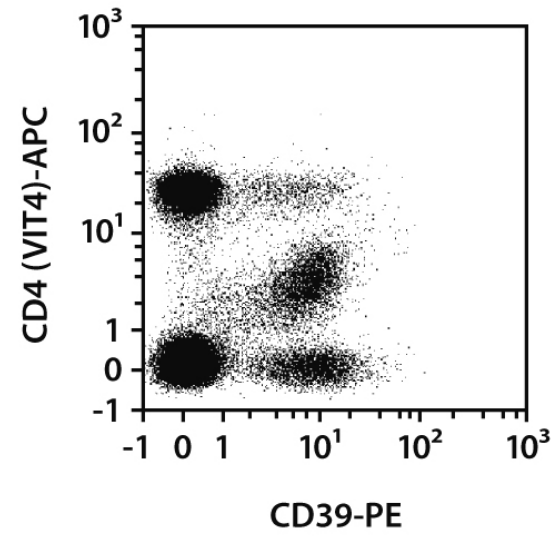
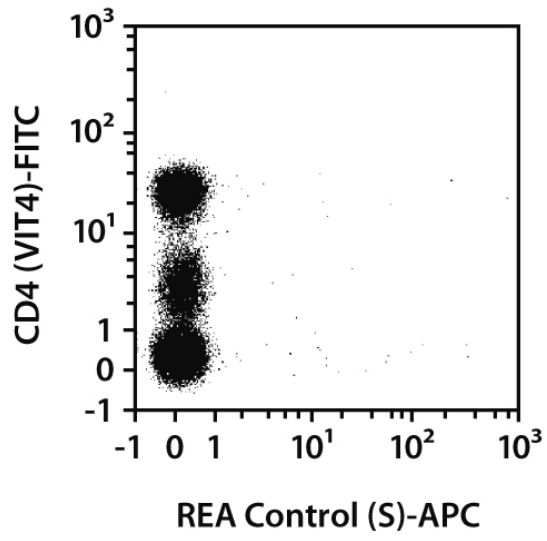
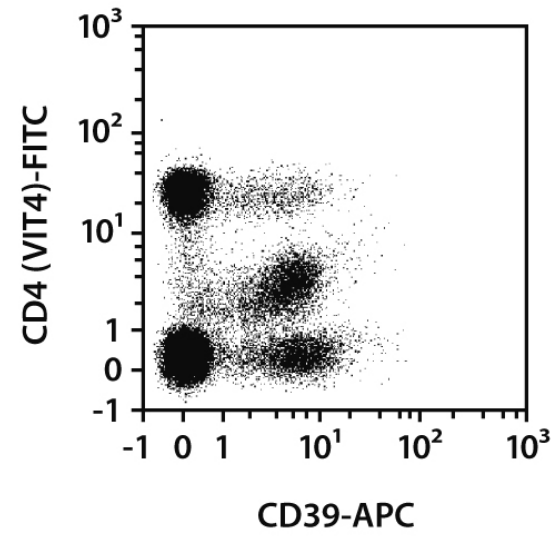
CD39-VioBright FITC


CD4 (VIT4)-APC
REA Control (S)-PE


CD4 (VIT4)-APC
CD39-PE


CD4 (VIT4)-FITC
REA Control (S)-APC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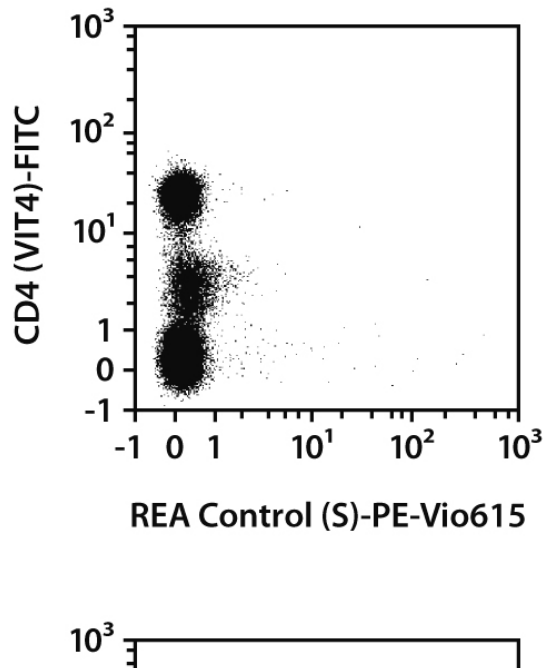
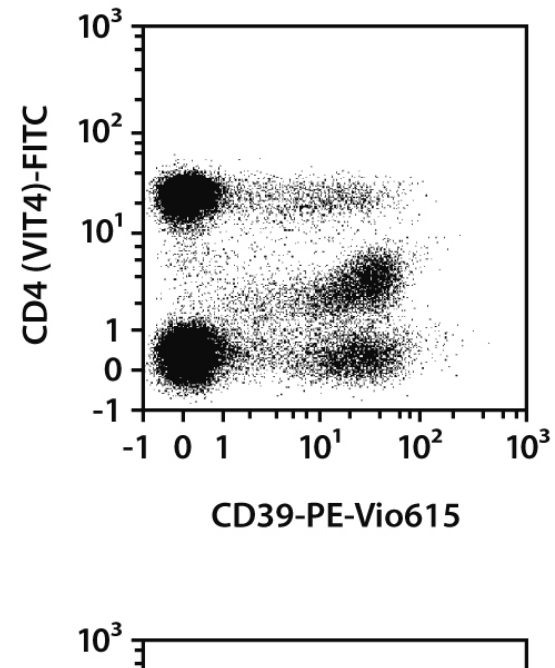
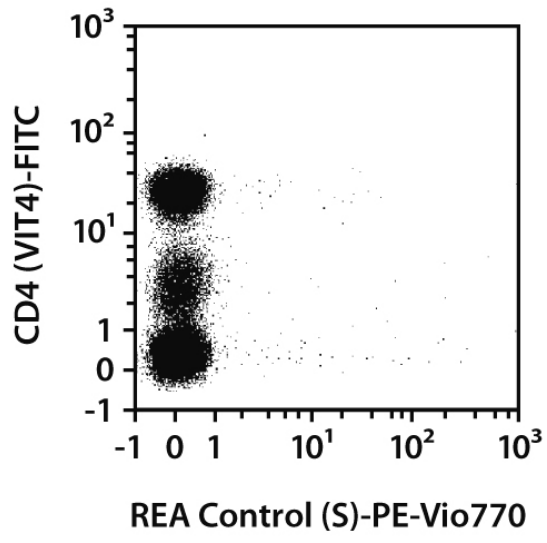
CD39-APC


CD4 (VIT4)-FITC
REA Control (S)-PE-Vio615


CD4 (VIT4)-FITC
CD39-PE-Vio615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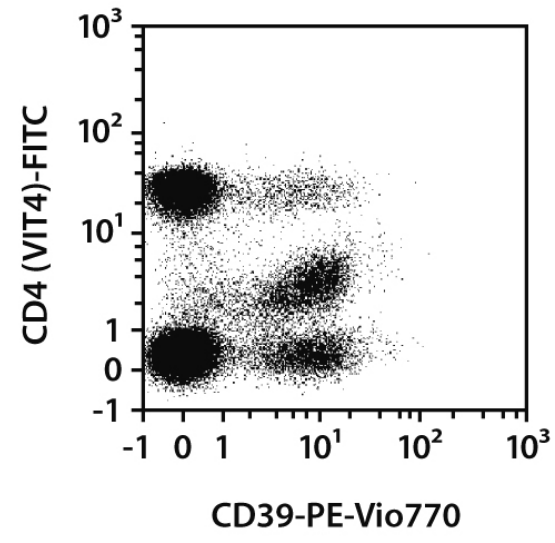
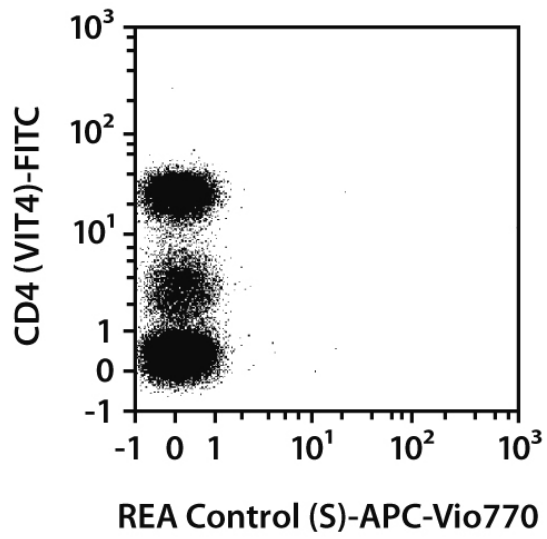
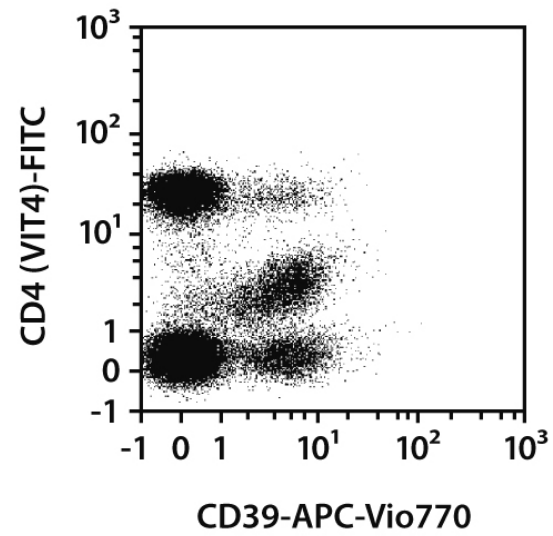
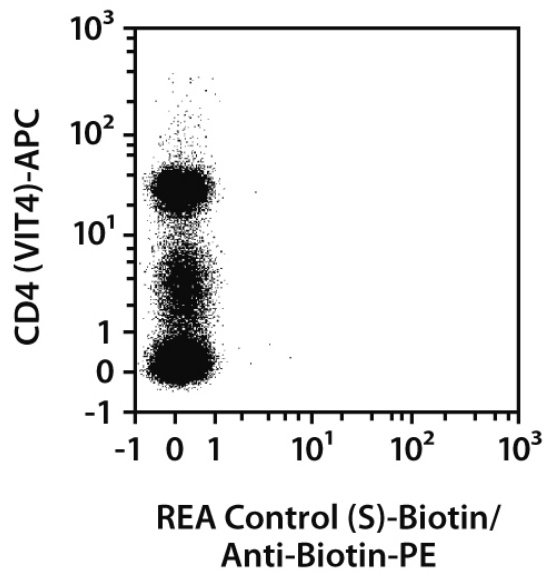
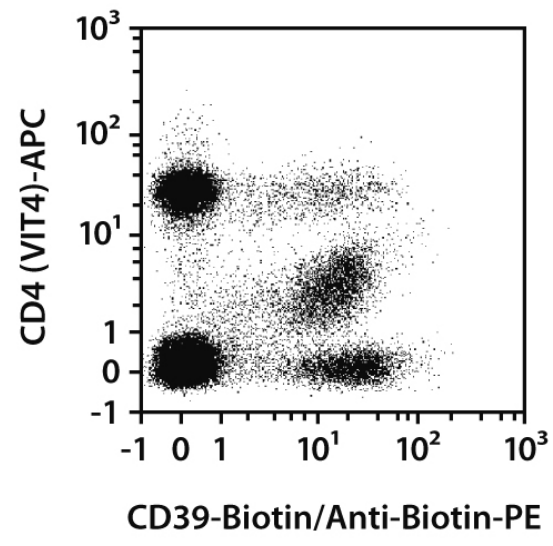
REA Control (S)-PE-Vio770


CD4 (VIT4)-FITC
CD39-PE-Vio770









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