Monoclonal Anti-human CD7-APC

Catalog Number: FAB7579A
Lot Number: ADLX01
100 Tests

Reagents Provided

Allophycocyanin (APC)-conjugated mouse monoclonal anti-human CD7: Supplied as 10 μg of antibody in 1 mL saline containing up to 0.5% BSA and 0.09% sodium azide.

Clone #: 848438

Isotype: mouse IgG_{2B}

Reagents Not Provided

- Flow Cytometry Staining Buffer (Catalog # FC001) or other BSA-supplemented saline buffer.

Storage

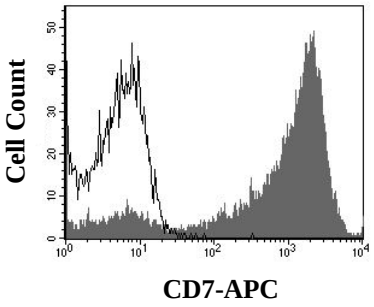
Reagents are stable for **twelve months** from the date of receipt when stored in the dark at 2-8 °C.

Intended Use

Designed to quantitatively determine the percentage of cells bearing CD7 within a population and qualitatively determine the density of CD7 on cell surfaces by flow cytometry.

Product Description

This antibody was produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with purified HEK293-derived recombinant human CD7 (aa 26-180; Accession # P09564). The IgG fraction of the tissue culture supernatant was purified by Protein A or G affinity chromatography. The purified antibody was then conjugated to APC fluorochrome. Cell surface expression of CD7 is determined by flow cytometry using 620-650 nm wavelength excitation and monitoring emitted fluorescence with a detector optimized to collect peak emissions at 660-670 nm.



Human peripheral blood lymphocytes were stained with APC-conjugated anti-human CD7 (Catalog # FAB7579A; open histogram) or APC-conjugated isotype control (Catalog # IC0041A; open histogram).

Background Information

CD7 (Cluster of Differentiation Antigen 7; also known as Leu9, TP41, and GP40) is a 4-44 kDa member of the Ig superfamily of proteins. It shows restricted expression being found on fetal thymocytes, $CD34^+$ myeloid and lymphoid progenitor cells, memory $CLA^-CD45RA^+$ T cells, and $CD56^+$ IFN-γ-secreting natural killer cells. CD7 binds to both SECTM1/K12 and Galectin-1, and when bound to the latter, initiates complex formation with CD43 in *cis*. Activation of CD7 may result in either cell proliferation or apoptosis, suggesting a context-dependent mechanism. Mature human CD7 is a 215 amino acid (aa) type I transmembrane glycoprotein. It contains a 155 aa extracellular region (aa 26-180) that shows one V-type Ig-like domain (aa 26-130), and a 39 aa C-terminal domain. There is one potential alternative splice variant that contains a 79 aa substitution for aa 133-240. Over aa 26-180, human CD7 shares only 43% aa sequence identity with mouse CD7.

Flow Cytometry Validation

This antibody has been tested for flow cytometry using human peripheral blood lymphocytes.

1. Cells may be Fc-blocked with 1 μg of human IgG/10^5 cells for 15 minutes at room temperature. Do not wash excess blocking IgG from this reaction.
2. After blocking, 10 μL of conjugated antibody was added to up to 1 x 10^6 cells and incubated for 30 minutes at room temperature.
3. Unbound antibody was removed by washing the cells twice in Flow Cytometry Staining Buffer (Catalog # FC001). Note that whole blood requires a RBC lysis step at this point using Flow Cytometry Human Lyse Buffer (Catalog # FC002).
4. The cells were resuspended in Flow Cytometry Staining Buffer for final flow cytometric analysis. As a control for this analysis, cells in a separate tube should be treated with APC-labeled mouse IgG_{2B} antibody. This procedure may need to be modified, depending upon the cell type and final utilization. Individual users may need to titrate to determine the optimal reagent amount for their specific use.

Warning: Contains sodium azide as a preservative. Sodium azide may react with lead and copper plumbing to form explosive metal azides. Flush with large volumes of water during disposal.

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