Human CD72 Antibody

Monoclonal Mouse IgG_{2A} Clone # 982405

Catalog Number: MAB5405

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD72 in direct ELISAs.
Source	Monoclonal Mouse IgG_{2A} Clone # 982405
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human CD72 Arg117-Asp359 Accession # P21854
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

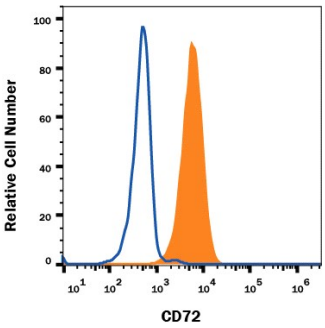
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunocytochemistry	8-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

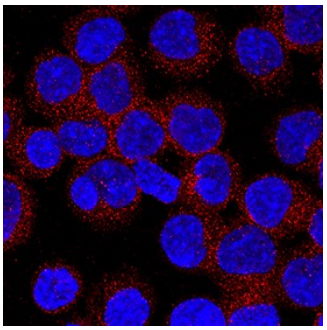
DATA

Flow Cytometry



Detection of CD72 in Human Ramos Cell Line by Flow Cytometry. Human Ramos Burkitt's lymphoma cell line was stained with Mouse Anti-Human CD72 Monoclonal Antibody (Catalog # MAB5405, filled histogram) or Mouse IgG2A Isotype Control (Catalog # MAB003, open histogram) followed by APC-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). View our protocol for Staining Membrane-associated Proteins.

Immunocytochemistry



CD72 in Ramos Human Cell Line. CD72 was detected in immersion fixed Ramos human Burkitt's lymphoma cell line using Mouse Anti-Human CD72 Monoclonal Antibody (Catalog # MAB5405) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CD72, also known as Lyb-2, is a 40-45 kDa type II transmembrane glycoprotein that plays a role in immune system regulation (1). Mature human CD72 consists of a 95 amino acid (aa) cytoplasmic domain with two immunoreceptor tyrosine-based inhibitory motifs (ITIMs), a 21 aa transmembrane segment, and a 243 aa extracellular domain with a coiled-coil domain and a C-type lectin domain (2). Within the ECD, human CD72 shares 48% and 44% aa sequence identity with mouse and rat CD72, respectively. CD72 is expressed on B lineage cells, NK cells, monocytes, dendritic cells, and mast cells (2-6). CD72 binds to CD5 with mouse/human cross-reactivity and to Semaphorin 4D/CD100 (5, 7-9). It associates with CD79A in the B cell antigen receptor (BCR) complex following antigen stimulation and dampens BCR signaling through interactions with the phosphatase SHP-1 (10). CD72 ligation with antibodies or with Semaphorin 4D induces tyrosine dephosphorylation of the CD72 cytoplasmic domain and its dissociation from SHP-1, leading to B cell proliferation (5, 9). Both CD72 and Semaphorin 4D are required for the maintenance of B cell anergy and the regulation of peripheral B cell tolerance as shown by the development of autoimmunity in mice that lack either molecule (10, 11). In addition to its negative regulation of BCR signaling, CD72 can induce positive signaling in B cells independent of the BCR (12). CD72 binding to Semaphorin 4D induces cytokine production by monocytes and dendritic cells, inhibits SCF R/c-kit induced mast cell proliferation and activation, and inhibits the cytolytic activity of NK cells (4-6). Semaphorin 4D is expressed on activated NK cells and contributes to the adhesive interaction between NK and $CD72^+$ target cells leading to a more efficent killing and enhanced IFN-γ secretion (13).

References:

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