Human CD72 Alexa Fluor® 594-conjugated Antibody

Monoclonal Mouse IgG_{2A} Clone # 982405

Catalog Number: FAB5405T

100 µg

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
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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	0.25-1 µg/10^6 cells	Ramos Human Burkitt's Lymphoma Cell Line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** • 12 months from date of receipt, 2 to 8 °C as supplied.

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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