Mouse CD47 Antibody

Monoclonal Rat IgG_1 Clone # 974214

Catalog Number: MAB1866

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse CD47 in direct ELISAs.
Source	Monoclonal Rat IgG_1 Clone # 974214
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line, NS0-derived mouse CD47 protein Gln19-Pro158 Accession # NP_034711
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.

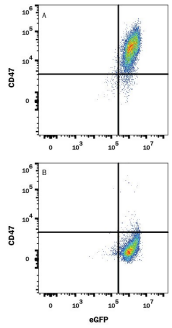
APPLICATIONS

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
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 CD47 in HEK293 Human Cell Line Transfected with Mouse CD47 and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with (A) CD47 or (B) irrelevant protein, and eGFP were stained with Rat Anti-Mouse CD47 Monoclonal Antibody (Catalog # MAB1866) followed by Allophycocyanin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # F0113). Quadrant markers were set based Rat IgG1 Isotype Control Antibody staining (Catalog # MAB005, data not shown). View our protocol for Staining Membrane-associated Proteins.

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

CD47, also known as Integrin-Associated Protein (IAP) and OA3, is a 40-60 kDa variably glycosylated atypical member of the immunoglobulin superfamily (1, 2). Mouse CD47 is an integral membrane protein that consists of a 122 amino acid (aa) extracellular domain (ECD) with a single Ig-like domain, five membrane-spanning regions with short intervening loops, and a 16 aa C-terminal cytoplasmic tail (3). Alternate splicing of mouse CD47 generates an additional isoform with an insertion of 21 aa following the Ig-like domain (3). Within the N-terminal ECD, mouse CD47 shares 63% and 84% aa sequence identity with human and rat CD47, respectively. A portion of the N-terminal ECD can by shed from smooth muscle cells by MMP-2-mediated proteolysis (4). The ubiquitously expressed CD47 binds to SIRP family members on macrophages, neutrophils, and T cells (5, 6). These interactions prevent macrophage-mediated clearance of healthy CD47-expressing cells and promote immune cell transmigration across the vascular endothelium (5-8). The CD47-SIRPα interaction is species specific, and this lack of cross-species interaction has been implicated in xenotransplantation rejection (16). CD47 associates *in cis* with Fas on T cells and enhances Fas-mediated apoptosis; its ligation promotes T cell anergy and dampens Th1 immune responses (9-11). CD47 also associates *in cis* with Integrins α4β1, αVβ3, α2bβ3, and α2β1 which can positively or negatively modulate Integrin-mediated function (2, 12). In the vasculature, CD47 binding by Thrombospondin-1 inhibits the angiogenic and vasorelaxant effects of nitric oxide (2, 13, 14). On dendritic cells and myeloma cells, CD47 ligation by TSP-1 induces giant cell formation and osteoclast differentiation (15).

References:

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