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iF647 Anti-Mouse CD16.2 (FcγRIV) Antibody

Catalog Number:	205203, 205204
Size:	25 μg, 100 μg
Target Name:	CD16.2, Fc gamma RIV, FcgRIV, Fcgr4, FcgammaRIV
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	9E9
Application:	Flow Cytometry
Reactivity:	Mouse
Format:	iF647
Isotype:	Armenian Hamster IgG
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	Supplied at a lot-specific concentration.
Storage&Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Recommended Usage:	For flow cytometric staining, it is recommended to use less than 0.5 µg of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. iF647 has an excitation max at 656 nm and an emission max at 670 nm.
Excitation Laser:	Red Laser (633 nm)
Isotype Control:	300511
GeneID:	246256
RRID:	AB_3759429

BACKGROUND INFORMATION

Mouse CD16.2 (FcγRIV) is a low-affinity activating Fc gamma receptor expressed on myeloid immune cells, including monocytes, macrophages, neutrophils, and certain dendritic cell subsets. It belongs to the immunoglobulin superfamily and mediates effector functions triggered by IgG immune complexes.

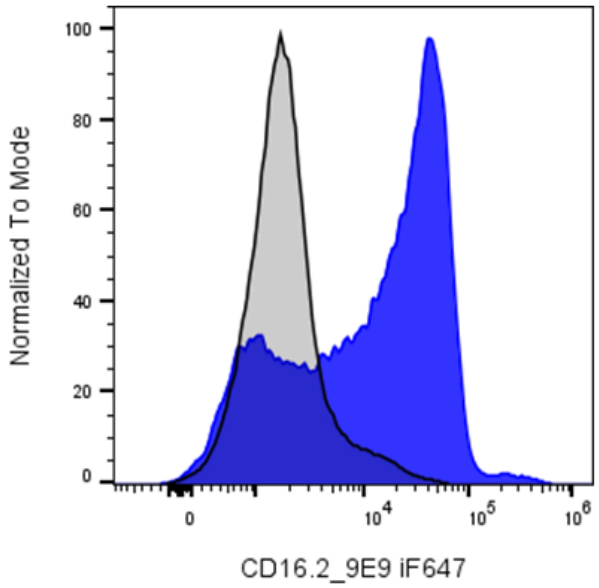
It is a type I transmembrane glycoprotein with an extracellular Ig-like domain responsible for binding IgG, a single-pass transmembrane region, and a short cytoplasmic tail. Unlike inhibitory Fcγ receptors, CD16.2 signals through association with the common Fc receptor gamma chain, which contains immunoreceptor tyrosine-based activation motifs (ITAMs) that initiate downstream signaling.

CD16.2 primarily binds IgG2a and IgG2b immune complexes in mice, promoting antibody-dependent cellular cytotoxicity, phagocytosis, and cytokine release. It plays a central role in host defense against pathogens but can also contribute to inflammatory and autoimmune pathology when overactivated.

In therapeutic contexts, CD16.2 is important for monoclonal antibody efficacy in preclinical mouse models, as its engagement enhances ADCC and tumor clearance. Conversely, blocking or modulating FcγRIV signaling is being explored to reduce autoimmune disease severity and excessive inflammation.

Overall CD16.2 serves as a key activating Fc receptor that bridges humoral immunity and cellular effector responses. Its balanced signaling determines whether IgG complexes drive protective immunity or pathological inflammation. Because of its strong role in antibody effector functions, it is widely used in mouse models to evaluate therapeutic antibodies and engineer improved Fc designs for enhanced clinical performance in vivo studies.

PRODUCT DATA



Mouse bone marrow cells were stained with iF647 Anti-Mouse CD16.2 clone 9E9 (color-filled histogram) or an isotype control (gray histogram).

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