Alexa Fluor® 647 anti-mouse CD64 (FcγRI) Antibody

Catalog# / Size	139321 / 25 µg 139322 / 100 µg
Clone	X54-5/7.1
Regulatory Status	RUO
Other Names	FcRI
Isotype	Mouse IgG1, κ
Description	CD64 is a 72 kD single chain type I glycoprotein also known as FcγRI and FcRI. CD64 is a member of the immunoglobulin superfamily and is expressed on monocytes/macrophages, dendritic cells, and mast cells. The expression can be upregulated by IFN-γ stimulation. CD64 binds IgG immune complex. It plays a role in antigen capture, phagocytosis of IgG/antigen complexes, and antibody-dependent cellular cytotoxicity (ADCC).

Product Details

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	BALB/c mouse FcγRI-human IgG Fc fusion protein.
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
Concentration	0.5 mg/ml
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.**
Application	FC - Quality tested SB - Reported in the literature, not verified in house
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For flow cytometric staining, the suggested use of this reagent is ≤0.5 µg per million cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application. * Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633 nm / 635 nm. Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation. View full statement regarding label licenses
Excitation Laser	Red Laser (633 nm)
Application Notes	The X54-5/7.1 antibody reacts with mouse strains carrying CD64a and b alleles but not CD64d. X54-5/7.1 recognizes a conformational determinant formed between domains 2 and 3. Additional reported application (for relevant formats) include: immunoprecipitation[1], and spatial biology (IBEX)[5,6]. Clone X54-5/7.1 is not found to be useful for Western blots[1].
Additional Product Notes	Iterative Bleaching Extended multi-pleXity (IBEX) is a fluorescent imaging technique capable of highly-multiplexed spatial analysis. The method relies on cyclical bleaching of panels of fluorescent antibodies in order to image and analyze many markers over multiple cycles of staining, imaging, and, bleaching. It is a community-developed open-access method developed by the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).
Application References	

(PubMed link indicates BioLegend citation)	1. Tan PS, *et al.* 2003. *J. Immunol.* 170:2549. (IP) 2. Ingersoll MA, *et al.* 2010. *Blood* 115:e10. (FC) 3. Ozeri E, *et al.* 2012. *J. Immunol.* 189:146. PubMed 4. Richardson ML, *et al.* 2014. *PLoS Negl Trop Dis.* 8:2825. PubMed 5. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci U S A.* 117:33455-65. (SB) PubMed 6. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) PubMed
Product Citations	1. Peterson EJ, *et al.* 2019. Mol Syst Biol. 15:e8584. PubMed 2. Sierro F, *et al.* 2017. Immunity. 47:374. PubMed 3. Sepe JJ, *et al.* 2022. JACC Basic Transl Sci. 7:915. PubMed 4. Wieghofer P, *et al.* 2021. EMBO J. 40:e105123. PubMed 5. Ferrer-Font L, *et al.* 2020. Elife. 9:. PubMed
RRID	AB_2566560 (BioLegend Cat. No. 139321) AB_2566561 (BioLegend Cat. No. 139322)

Antigen Details

Structure	Ig superfamily, type I glycoprotein, 72 kD
Distribution	Monocytes, macrophages, mast cells, dendritic cells
Function	Phagocytosis, ADCC
Ligand/Receptor	IgG
Cell Type	Dendritic cells, Macrophages, Mast cells, Monocytes
Biology Area	Immunology, Innate Immunity
Molecular Family	CD Molecules, Fc Receptors
Gene ID	14129

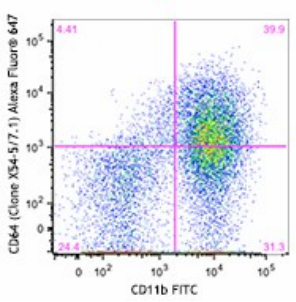
Related Protocols

Cell Surface Flow Cytometry Staining Protocol

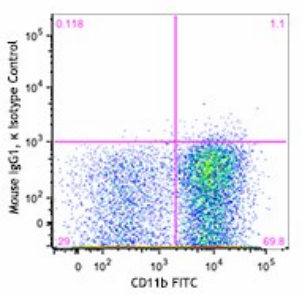
Other Formats

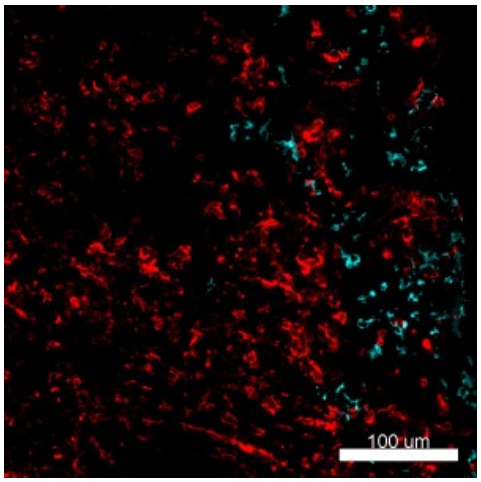
Purified anti-mouse CD64 (FcγRI), PE anti-mouse CD64 (FcγRI), APC anti-mouse CD64 (FcγRI), PerCP/Cyanine5.5 anti-mouse CD64 (FcγRI), Brilliant Violet 421™ anti-mouse CD64 (FcγRI), Brilliant Violet 711™ anti-mouse CD64 (FcγRI), PE/Cyanine7 anti-mouse CD64 (FcγRI), FITC anti-mouse CD64 (FcγRI), Biotin anti-mouse CD64 (FcγRI), PE/Dazzle™ 594 anti-mouse CD64 (FcγRI), Alexa Fluor® 647 anti-mouse CD64 (FcγRI), Brilliant Violet 605™ anti-mouse CD64 (FcγRI), TotalSeq™-A0202 anti-mouse CD64 (FcγRI), TotalSeq™-C0202 anti-mouse CD64 (FcγRI), TotalSeq™-B0202 anti-mouse CD64 (FcγRI), PE/Cyanine5 anti-mouse CD64 (FcγRI), APC/Fire™ 750 anti-mouse CD64 (FcγRI)

Product Data



C57BL/6 mouse bone marrow cells were stained with CD11b (clone M1/70) FITC and CD64 (clone X54-5/7.1) Alexa Fluor® 647 (top) or mouse IgG1, κ Alexa Fluor® 647 isotype control (bottom).





Mice were injected subcutaneously with sheep red blood cells in a volume of 25 µl per site on days 0 and 4 and harvested on day 11. Confocal image of C57BL/6 mouse lymph node acquired using the IBEX method of highly multiplexed antibody-based imaging: CD11c (red) in Cycle 3 and CD64 (cyan) in Cycle 6. Tissues were prepared using ~1% (vol/vol) formaldehyde and a detergent. Following fixation, samples are immersed in 30% (wt/vol) sucrose for cryoprotection. Images are courtesy of Drs. Andrea J. Radtke and Ronald N. Germain of the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).

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